650-0030

PD-AAG-116 i [5000300420]

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

1. TRANSACTION CODE: [A] A = ADD, C = CHANGE, D = DELETE — PP

2. DOCUMENT CODE: 3

3. COUNTRY/ENTITY: SUDAN

4. DOCUMENT REVISION NUMBER: [ ]

5. PROJECT NUMBER (7 digits): 650-0030

6. BUREAU/OFFICE: A. SYMBOL: AFR; B. CODE: 06

7. PROJECT TITLE (Maximum 40 characters): RURAL HEALTH SUPPORT

8. ESTIMATED FY OF PROJECT COMPLETION: 85

9. ESTIMATED DATE OF OBLIGATION: A. INITIAL FY: 80; B. QUARTER: 4 (Enter 1, 2, 3, or 4); C. FINAL FY: 84

10. ESTIMATED COSTS ($000 OR EQUIVALENT $1 = 8)

A. FUNDING SOURCE	FIRST FY B. FX	FIRST FY C. L/C	FIRST FY D. TOTAL	LIFE OF PROJECT E. FX	LIFE OF PROJECT F. L/C	LIFE OF PROJECT G. TOTAL
AID APPROPRIATED TOTAL	3000		3000	18063		18063
(GRANT)	3000	( )	3000	18063	( )	18063
(LOAN)	( )	( )	( )	( )	( )	( )
OTHER U.S. 1.						
OTHER U.S. 2.						
HOST COUNTRY		1127	1127		11883	11883
OTHER DONOR(S)						
TOTALS	3000	1127	4127	18063	11883	29946

11. PROPOSED BUDGET APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	PRIMARY TECH. CODE D. LOAN	E. 1ST FY 80 F. GRANT	E. 1ST FY 80 G. LOAN	H. 2ND FY 81 I. GRANT	H. 2ND FY 81 J. LOAN	K. 3RD FY 82 L. GRANT	K. 3RD FY 82 M. LOAN
(1) H	530	510		2977		3124		3660	
(2) P	440	440		165		401		675	
(3)									
(4)									
TOTALS				3142		3525		4335	

A. APPROPRIATION	N. 4TH FY 83 O. GRANT	N. 4TH FY 83 P. LOAN	Q. 5TH FY 84 R. GRANT	Q. 5TH FY 84 S. LOAN	LIFE OF PROJECT T. GRANT	LIFE OF PROJECT U. LOAN
(1) H	3162		3401		16182	
(2) P	305		335		1881	
(3)						
(4)						
TOTALS	3467		3736		18063	

12. IN-DEPTH EVALUATION SCHEDULED: MM 09, YY 82

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

[1] 1 = NO, 2 = YES

14. ORIGINATING OFFICE CLEARANCE

SIGNATURE: Howard K Diener

TITLE: USAID Director

DATE SIGNED: MM DD YY

15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

AID 1330-4 (3-76)

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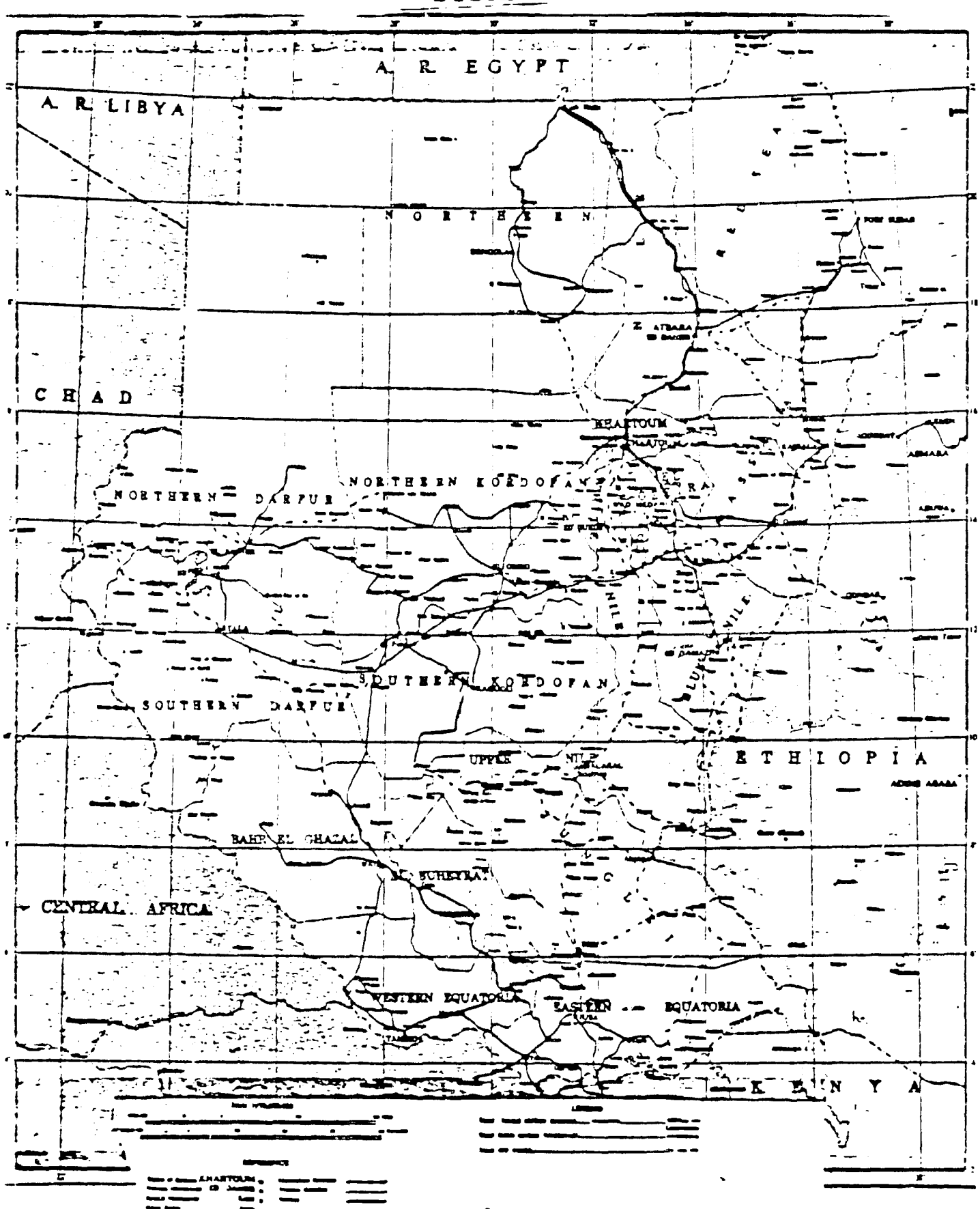
ABBREVIATIONS

AMREF	African Medical Research Foundation
ASO	Assistant Sanitary Overseers
CHW	Community Health Worker
CMOH	Central Ministry of Health
DRS	Democratic Republic of Sudan
FY	Fiscal Year
GDP	Gross Domestic Product
GNP	Gross National Product
GOS	Government of Sudan
HMIS	Health Management Information System
HV	Health Visitor
MA	Medical Assistant
MCH	Maternal and Child Health
MO	Medical Officer
MOF	Ministry of Finance
MOH	Ministry of Health
MOP	Ministry of Planning
NHP	National Health Program
NMW	Nurse Midwife
PACH	Provincial Assistant Commissioner for Health
PHCP	Primary Health Care Program
PHCU	Primary Health Care Unit
PIU	Project Implementation Unit
PVO	Private Volunary Organization
PWC	Ministry of Construction and Public Works
SO	Sanitary Overseer
SRG	Southern Regional Government
SSU	Sudan Socialist Union
SYP	Six Year Plan
VMW	Village Midwife
WHO	World Health Organization

SUDAN


A R EGYPT
A R LIBYA
N O R T H E R N
C H A D
KHARTOUM
NORTHERN DARFUR
NORTHERN KORDOFAN
SOUTHERN KORDOFAN
SOUTHERN DARFUR
UPPER NILE
E T H I O P I A
BAHR EL GHAZAL
CENTRAL AFRICA
WESTERN EQUATORIA
EASTERN EQUATORIA
K E N Y A

PART I

SUMMARY AND RECOMMENDATIONS

A. Facesheet: (See previous page)

B. Recommendations:

This Project Paper recommends that:

- AID assist the Government of Sudan (GOS) in the strengthening and improving of its Primary Health Care Program by providing grant funding in the amount of $18,063,000 of HN and POP funds over life of the project

- AID assistance be administered over a five-year period (FY 1980-FY 1984) focussing on three essential areas:

1. Delivery of PHCP services
2. Institution of MCH/FP element
3. Strengthening Planning/Management/Logistic support

- AID approve the waivers and conditions included in the Project Paper which are considered essential to successful project implementation.

C. Project Description:

In order to assist the GOS to meet basic health needs of its rural population, this project has been designed to support the Primary Health Care Program (PHCP) which is the prime GOS health activity in the rural areas. The activities in this project are selected, as addressing the highest priority constraints on delivery of health services in rural Sudan. These activities will be carried out jointly by the appropriate GOS governmental institutions under the leadership of the Ministry of Health, and by contract personnel to be supplied by this project. The specific technical inputs have been selected on a basis of relevance, practicality and replicability in both the ongoing development of rural health activities and the initiation of regional governmental institutions. In order to be responsive to both AID objectives of serving the poor majority and to GOS objectives in fostering decentralization, the geographic scope of this project lies in the South and West of Sudan. The ultimate goal of the project is the prevention of disease and the promotion of health in the rural areas, especially for women and children.

Specific Project Components and Activities

(a) Improved Delivery of PHCP Services:

(1) In-country training, especially of a refresher

and reorientation type, for the broadest possible coverage of existing trained personnel.

(2) Provision of training facilities, complementary to existing centers, which can provide both training and retraining.

(3) Development of radio broadcasting facilities to undertake pilot health education activities in support of PHCP personnel.

(4) Limitied third country and U.S. training.

(5) Assistance in expanding dispensary coverage of the project area.

(6) Provision of part of the drug requirements to be used in the project area.

(b) Inclusion of MCH/FP in PHCP

(1) Development, in conjunction with UNFPA, of curriculum for MCH/FP training of PHCP and other personnel.

(2) Reorientation training of existing midwifery and basic training of traditional birth attendant personnel, in conjunction with UNFPA.

(3) Provision of training facilities to be used for in-country training.

(4) Observational third country, and limited U.S., training.

(5) Support of UNFPA activities in rural areas in material terms.

(c) Strengthening Planning/Management/Logistic Support of PHCP

(1) Provision of management, planning and logistic expertise to assist GOS in effecting decentralization.

(2) Reinforcing physical logistic system for PHCP with warehouse and vehicle requirements.

(3) Assistance in providing in-country training in planning, logistics, management and data collection techniques useful in the PHCP.

D. Summary Findings

The PHCP is a creation of the GOS to address the health needs of the rural areas. Reinforcing of activities already underway (albeit in limited scope) is the most effective utilization of funds available through this project, while at the same time avoiding a costly proliferation of health service institutions with a concomitant long-term drain on recurrent budgets. New initiatives in MCH/FP and rural radio broadcasting are being done in conjunction with other donors or on a pilot basis, for absorption into the PHCP.

Phasing of project activities has been undertaken specifically to support the GOS decentralization policies related to the development of new regional governments. The project also provides AID with an opportunity to ultimately fold two existing closely related health activities (Northern Primary Health Care and Southern Primary Health Care) into a more unified management unit.

The project meets all applicable statutory criteria and is ready for the immediate commencement of implementation activities upon authorization.

E. Project Issues

(1) This project has been designed to be responsive to developmental objectives in rural health and has consciously been relieved of addressing macro-economic objectives toward which a health sector activity could address itself. This transition has been made upon the assumption that AID will continue to address macro-economic issues using other funding mechanisms.

(2) MCH/FP activities have been included with full awareness of the GOS despite their lack of a formal family planning policy. The recent GOS/UNFPA project for $12.5 million underlines the GOS commitment in this area. Funding for MCH/FP activities is drawn from AID population funds to assure that MCH/FP objectives are appropriately included and monitored within the PHCP.

PART II

PROJECT BACKGROUND

A. Introduction

The Sudan is a vast country (over 2.5 million sq. km.) which covers a land mass greater than all of Western Europe. Yet it is very unevenly populated: much of the desert country of the Northern Region is uninhabited while in the agricultural areas of the country the population density averages about 50 persons per sq. km. The overwhelming majority of the population of 16 million Sudanese, approximately 90%, is rural, and most of them are subsistence farmers and herders. Although per capita figures are not very reliable, the 1976 figure of US$ 271 per capita GNP is illustrative of the grinding poverty faced by the people of Sudan.

This poverty finds expression in many aspects of life. The average life expectancy is about 48 years and infant mortality is 140/1000 live births. The crude birth rate is 49/1000, and the crude death rate is approximately 24/1000. Estimates of the population growth rate range from 2.5 to 2.9% annually. Less than half of the rural population has access to a water supply judged "safe" by government standards; for most nomads and most settled peoples simply getting any water at all is a severe problem during the dry season. An inadequate diet, unclean water, poor sanitation, endemic diseases and inadequate maternal and child care are factors contributing to health problems in the rural areas. Quite apart from the picture of suffering and needless death reflected by these health statistics is the economic impact of disease and illness. The Sudan is a predominantly agricultural country. Although there is no accurate data on the effects of disease and illness on the ability of these people to plant, tend, harvest and transport foodstuffs, observation and comments from informed individuals indicate that the toll of poor personal health on rural production is great.

B. GOS Health Policy

In 1975, the Government of Sudan (GOS), with assistance from the World Health Organization (WHO) and donor agencies prepared a National Health Programme. This planning effort was based on a thorough analysis of Sudan's health problems and the factors that must be overcome to improve the health status of the Sudanese people.

Briefly these factors include: a primarily rural population with a sizeable nomadic component; a large country with diverse geographic and climatic conditions; significant parasitic and communicable diseases that affect large numbers of people; environmental sanitation problems; inadequate safe water; protein-calorie malnutrition in several sections of the country; and a high illiteracy rate.

On the basis of this analysis, the GOS developed a strategy for meeting the health needs of the nation. First, a specific national health policy was established whose key components are:

1. The provision of preventive and social medical services that stress: control of endemic and epidemic diseases; maternal and child welfare services; school health; immunization of children against tuberculosis, smallpox, diphtheria, pertussis, tetanus and polio; health education; improved environmental health.

2. Coverage of the population, especially in rural areas, with primary health care.

3. The training of health manpower, especially in the areas of preventive and social medicine.

4. Consolidation and improvement of curative health institutions.

Plans were made for eight specific 6-year health programs; malaria; (nationwide), malaria (man-made); primary health care; control of bilharzia in irrigated areas, safe water supply; environmental health, food (dura) production; and onchocerciasis control and prevention.

Of the eight programs, the Primary Health Care Program (PHCP) has been emphasized by the GOS. This is in part because it is the most comprehensive in its approach and has the potential of incorporation elements from the other seven programs. The PHCP is low-cost, based on community participation and utilizes health workers selected by the community. It also offers the GOS the best opportunity to reach the rural and the nomadic peoples with preventive health care, as required by the GOS national health policy.

In October 1976, the GOS sponsored an International Donors Conference at which the National Health Programme and the PHCP were reviewed, and technical and financial support was elicited. While some assistance was promised, the amount was not great. Despite this, the GOS decided to begin implementation of the eight programs using whatever resources it could commit.

C. Overview of the Health Sector Infrastructure*

The delivery of curative, promotive and preventive services under the National Health Programme (NHP) is dependent upon four

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* H.S. in this paper refers to the health care delivery system of the GOS. While there is a limited private health care system which involves physicians who work on a fee for service basis and some private clinics, these are not included in this definition.

subsystems in the health sector infrastructure:

- personnel
- facilities
- logistics/supply system
- health data system

1. Personnel and Facilities**

At the village level, the basic level of the health delivery system, there are three types of workers:

- Traditional Birth Attendants (TBA) who have little or no formal training and who perform deliveries.

- Village Midwives (VMW) who have formal training and provide limited maternal and child health services (not present in all villages).

- Community Health Workers (CHW), and among nomads, Nomad Community Health Workers (NCHW) (not present in all villages). These are two new categories of health personnel who receive nine months training in curative, promotive, and preventive services.

The CHWs are stationed in Primary Health Care Units (PHCU) which are the simple one or two room facilities. The VMWs are not assigned to the PHCU but may utilize it for clinics.

At the next level of this pyramidal infrastructure is the dispensary. This is a somewhat larger facility where outpatient services are provided and referrals are received from PHCUs. The dispensaries are staffed by a Medical Assistant (MA) who gives simple curative and preventive care and provides supervision for the village level CHW. A Nurse-Midwife is also stationed at the dispensary and provides MCH services (including deliveries) and supervises the village midwife.

Two or more dispensaries and their satellite PHCUs are served by a health center. This is staffed by a senior Medical Assistant, one or more Nurses and a Health Visitor (HV). The latter is a femal nurse-midwife with one additional year of training who also supervises VMWs. The health center and its staff can give both outpatient and some limited impatient services. The staff of the health center also provides supervision for its related dispensaries.

Above the health centers are district hospitals. These are staffed by one or more Medical Officers (MO) including specialists in the larger hospitals, several medical assistants and nurses. District hospitals provide primarly curative care on both an inpatient

and outpatient basis.

The district hospitals in turn are backstopped by, and refer patients to, provincial hospitals. These offer a broad range of curative services and are staffed by medical officers, nurses, nurse-midwives and medical assistants.

Administration of this pyramidal infrastructure of facilities and staff at the provincial level is through the Assistant Commissioner for Health (PACH). He is the person responsible for all health management and line functions including curative and preventive care in the provincial health delivery system.

The PACH reports through the Provincial Commissioner to the Regional Ministry of Health (in Juba in the South and in the future the new Regions in the North). Under the current GOS decentralization policy, the PACH has a great deal of autonomy, particularly in resource allocation. In the North the PACH submits his health budget through the Provincial Commissioner to the Provincial Council. After it has been approved, it is forwarded directly to the Ministry of Finance (MOF) in Khartoum, bypassing the MOH.

The Regional Ministry of Health in Juba has a coordinating and policy making role for the six Southern provinces. The Ministry of Health in Khartoum provides overall administrative leadership for the entire health infrastructure. It is actually the Central Ministry of Health (CMOH) for the entire country. Under the system of decentralization, most administrative functions are delegated to the provinces. The CMOH, however, is responsible for such functions as:

- National Health Planning
- National Manpower Training
- National Medical Stores
- Health and Vital Statistics
- International Health
- Capital Construction

2. Logistics/Supply System

The personnel and facilities described above are supported by a logistics/supply system. It is headed by the Chief of the Central Medical Stores/Khartoum (CMS/K) of the Central MOH. This department supervises the distribution of all equipment and supplies from the point of arrival (usually Port Sudan) through the regional and provincial warehouses, and into the provincial hospitals, district hospitals, health centers and dispensaries* (Also see Annex E).

* For a more detailed description, please refer to Report of the Health Sector Assessment Team - Sudan, Africa Bureau, AID, WAshington,DC. September 1977. (Available in AFR/DR/HN)

3. Health Information System

The third subsystem in the health sector is the statistical/information system which is operated by the CMOH's Directorate of Statistics and Coordination. It receives information on vital registration, statistics on morbidity and mortality from hospitals and health centers, and data on curative, promotive and preventive care from the dispensaries and PHCUs.

D. Constraints in the Health Sector*

1. Achievements

Since the inception of its new health policy in 1975 and the beginning of the implementation of the six year National Health Programme in 1976, the following have been accomplished:

- a significant number of new health workers, particularly at the village and community level, have been trained and placed in the field;
- a large number of facilities at the village level have been constructed, primarily by self-help;
- health services are beginning to reach the rural poor, including the nomads who have had few, if any, such services before.

2. Constraints

At the same time, Sudanese health professionals have been evaluating their program and have identified a number of problems and constraints:

- the National Health Programme is comprehensive, but perhaps too ambitious in its scope;
- the economic situation of Sudan has seriously affected the availability of development funds, especially for training, construction of health facilities; and purchase of drugs, gasoline and other supplies;
- the transportation and communication sector upon which the health sector must rely to bring services to the rural poor is inadequate;
- the health infrastructure, and particularly the health data and logistics/supply systems, are inadequate to support the demands of an expanding health sector;
- there is still an overemphasis on curative care partly because the concepts of disease prevention and health promotion have not become integrated in the training and thinking of health workers;

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* For a more detailed description, please refer to Report of the Health Sector Assessment Team - Sudan, Africa Burea, AID, Wahington, DC., September 1977. (Available in AFR/DR/HN)

- the coverage of rural villages and nomadic population is poor; most still lack access to basic health care;
- there is inadequate supervision of personnel, particularly at the PHCU and dispensary level;
- maternal and child health, the core of primary health care has had a low priority and maternal care is provided principally by village midwives and traditional birth attendants who do not have adequate training and equipment.
- there is fragmentation of services at the village level, and little coordination of MCH, health education and safe water in the rural community.

Of particular concern is the slower rate at which the health sector is expanding in the poorer parts of the country, notably the four western provinces and the Southern Region. The health sector problems of the Southern Region are particulary complex. The six Southern Provinces were devastated during the recent civil disturbance. As a result there are few trained health personnel and insufficient facilities Here, a combination of geographic and climatic conditions, inadequate resources and insufficient infrastructure combine to slow the progress of the health programs.

AID's Rural Health Support Project is designed to assist the Sudanese Ministry of Health in addressing these constraints to the Primary Health Care Program.

By choosing to focus its health support on the Primary Health Care Program, USAIS/S is not ignoring other key health problems in Sudan. GOS programs in endemic diseases (malaria, schistosomiasis, onchocerciasis) are worthy efforts but assistance from USAID/S is not proposed at this time.

E. Project Implementation - Summary Description*

The implementation of the Rural health support project in the North will be carried out by a private contractor who will be selected to provide the necessary technical services and to monitor the training, construction, flow of commodities*, and selected Title III Program funds.

In the South, the non-competitive procurement of services will be negotiated with the African Medical and Research Foundation (AMREF), an American private voluntary organization with experience in Southern Sudan. AMREF will provide similar overall technical support and management (see Annex P for non- competitive procurement waiver).

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* For a detailed description of the implementation plan see Part V.

GOS supervision, coordination and direction of the project in the North will be provided by a Project Director who will operate in Khartoum. In the South, the Director of the Primary Health Care Program will serve as the project coordinator and monitor for the Regional MOH in Juba.

A steering committee chaired by the RMOH Director of Medical Services has been established to coordinate activities in the Southern Primary Health Care Project. The committee is composed of representatives from RMOH including the Director of the Primary Health Care Program and from AMREF.

PART III

THE PROJECT

A. Goal Structure of the Project

1. To improve the health status of the rural poor.

2. Project Purpose

To improve the capability of the Ministry of Health to deliver primary health care to the rural population of Sudan, with special emphasis on Maternal and Child Health and Family Planning.

3. EOPS

Rural health services are operating effectively in the rural areas of seven provinces (four in the Northern Region and three in the Southern Region).

B. Rationale

Primary health care programs are an important means of meeting basic human needs, particularly among the rural poor in developing countries. Improvements in the availability and quality of health services in rural areas can help relieve suffering caused by the burden on disease that falls heavily on the poorest groups. Extending low-cost, appropriate health care to the rural poor promotes growth with equity by providing services to those least able to purchase health care. A healthier population has a greater productive capacity; they are able to grow more food and engage more successfully in other productive pursuits.

The project will provide support to the Primary Health Care Program of the GOS, which was developed by the government with assistance from WHO.

The concept and design of the Primary Health Care Program is consistent with the ideals expressed at the conference on Primary Health Care in Alma Ata, USSR, in 1978, and endorsed by virtually all nations. It is also consistent with AID's new health policy, particularly in its emphasis on the health of children and of mothers at and around the time of birth. The Primary Health Care Program in Sudan is a rural-based, preventive program, depending on trained village-level health workers, rather than a curative, urban-based program heavily dependent on physicians and sophisticated technology. AID's project, as coordinated with the UNFPA, will help introduce family planning as part of comprehensive MCH services, an approach

that has the support of Sudan's Ministry of Health. Finally, in addition to projected training inputs, the project will provide needed assistance in logistics, management, and planning, areas universally achnowledged to be critical to the success of primary health care programs.

C. Project Strategy

1. Given the recent GOS emphasis on decentralization, this project proposes to design and implement most activities on a regional or provincial basis, rather than at the national level. Existing health activities (Southern Primary Health Care Project - SPHC) in the Southern region as well as the general experience of managing activities on a regional basis by the Southern Regional Government (SRG), strongly suggest that substantial emphasis be placed in this project on activities in the Southern Region. Such operational activity will allow the project (and the GOS) to refine regional operational techniques which may be applicable in the newly created regions of the North.

For purposes of both equity and growth, the project proposes that two of the new regions in the North be selected for implementation activities in addition to the Southern Region. (These regions being consistent with the Mission's CDSS).

The new regions of Kordofan and Darfur (each consisting of two provinces) are proposed as they include large elements of the poor majority in Sudan. Implementation activities will take place on a phased basis, Kordofan then after two years Darfur, to permit refinements to be made based on experience from both the Southern region and the first region in the North.

This policy of regionalization is believed to benefit the provision of health services by enhancing local participation and permitting the tailoring of health service to local situations. Decentralization may involve the placement of additional manpower and equipment at the regional level, but the costs involved should be compensated for by the increased interaction of mid- and upper-level health professionals with operational problems on a practical development level.

2. An additional feature of project strategy is the desire by USAID and the GOS to limit the requirements of high-level management time necessary to implement activities in the health sector. Without uprooting those activities now ongoing in the North and South, the strategy of this project is to attempt to:

a. create a common core of activities which will initially support and be complementary to those ongoing projects,

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bottlenecks, and improve project efficiency.

In addition to building upon its ongoing health projects, USAID/S also proposes to utilize a phased approach in the planning and implementation of this project. This will give the Mission the necessary flexibility to allocate resources and accommodate such significant variables as the diverse cultural and demographic characteristics of the population. This approach is described more fully in Part V, Implementation.

B. Project Activities

1. Improved Delivery of Services under the PHCP

To strengthen the system of delivering services under the PHCP this project provides inputs in the following areas: (A) training, including construction and equipping of training facilities, (B) construction and equipment of dispensaries, (C) provision of drug supplies, and (D) introduction of radio health education. Each of these activities will be described briefly below.

a. Training

At present, the delivery of health services and commodities at the village level is inadequate due to deficiencies in the broad areas of administration and management, human resources development, facilities for delivery of services and training of personnel and logistics/supply capabilities.

Until now the training and full experience of front-line health workers has not been coordinated. Except for the CHW, there has been little emphasis on community outreach and the integration of curative, promotive and preventive care.

In addition, not enough CHWs and VMWs have been trained to provide the expected coverage because of recruitment problems, insufficient number of tutors for training and inadequate training facilities, both in number and quality.

The training element of the project will increase accessibility and availability of rural health services under PHCP:

- by increasing the training capacity of the present infrastructure
- by incorporating into the curricula material that will give all new health workers the knowledge, skills and abilities to provide services in promotive and preventive health as well as curative care
- by improving job performance of health workers already in the system including those in supervisory roles through refresher courses, reorientation

and continuing education programs.

Increasing the training capacity of the present infrastructure will be done by:

- preparing additional tutorial personnel through in-country and through short-term participant training in a third country
- limited technical assistance for curriculum development and training with the MCH/FP elements being done in conjunction with the UNFPA
- the construction of facilities for training of personnel.

In the Southern region, technical assistance and participant training of a greater magnitude will be provided reflecting the paucity of trained personnel.

Expanding the scope of activities performed by front-line workers will be accomplished by supporting and improving the present pre-service and in-service training programs. Curriculum and training specialists will evaluate the content of courses and the methods of presentation for the purpose of enhancing the integration of new concepts into the activities of the workers. Teaching aids will be provided to the newly constructed facilities and also to those already in existence. A better mix of theory and field practice will be possible through the provision of vehicles to the training schools making possible supervised work in the village environment.

Improved job performance depends not only on the initial training given to a worker but also on follow-up guidance and supervision in the field. Provision of motorcycles, on a pilot basis, may make it possible for the MA in the dispensary to travel to the PHCUs which are his responsibility. Motorcycle utilization is presently being tested by UNICEF in Rural Gezira and Blue Nile provinces and their results will be scrutinized before procurement is commenced.

At the village level selected CHWs and VMWs will be provided with bicycles which will make it possible to expand their areas of coverage. The CHW can then go beyond his PHCU into the village and areas nearby to be involved in such things as planning placement of latrines and other activities more related to preventive aspects of health. The village midwife usually covers more than one village. The bicycle will make travel easier, especially as she carries her midwifery kit on home visits and to the PHCU where she can schedule clinics. Such use of motorcycles and bicycles in selected areas will be observed to see if the quantity and qualities of services provided have been enhanced by improved mobility.

Lastly, continuing education programs for improved job performance will not only update and expand skills of health workers, but will also provide a mechanism for strengthening professionalism and giving moral support to the front-line workers. (See Annex B).

Inputs to be provided in this component are tabularized in Table 1. In brief, they consist of long-term technical assistance in health education (located in the South) which will be supported by appropriate short-term advisors (both North and South) especially in curriculum review and training evaluation. Extensive training will be provided to GOS personnel, the large majority of which will be in-country. Limited funding is provided for training in the U.S. as well as selected third country sites. To build toward a situation where adequate training facilities are available, the project will provide for the construction of six training centers (four in the south and two in the north) and will provide appropriate equipment in these centers. Location and type of training centers is located in Annex H. Finally, vehicles will be provided for the long-term advisor as well as to each of the training centers, as will funding to provide for operational costs.

b. Construction of Primary Health Care Units & Dispensaries*

1. Primary Health Care Units

A significant feature of the PHCP is the self-help component at the village level. In practically all provinces, PHCUs have been built by the communities using locally available materials. Those provinces which are better off economically (Gezira, Khartoum) have almost reached their six year quota of PHCUs. Some of the very poor villages in the Western and Southern provinces, however, have not been able to keep pace.

In order to speed the pace of PHCU construction and support self-help efforts, the project will provide local currency to enable Village Councils to purchase window frames, door frames, poles and other locally available building materials as appropriate. This will assist in alleviating the present shortfall of PHCUs.

2. Dispensaries

The building of dispensaries has also lagged. In the South only 65 of 763 have been built and in the North 450 of 1980. For the number of operating dispensaries and PHCUs by province see Annex B. Through its ongoing Northern and Southern Primary

* For information concerning site selection, plans and specification, costs and construction schedule, Engineering Analysis, Annex H.

TABLE I

COMPONENT COST BREAKOUT

($'000)

	Input	Level of Effort	Value	Component	PHCP	MCH	Management
		pm	000 $				
TA							
LT	Proj Mgr/Health planner (N)	54	585				585
	MCH advisor (N)	54	450			450	
	Prov Coord (N) (K)	54	450				450
	Proj. Mgr (S)	36	117				117
	Health Planner (S)	54	176				176
	Health Educator (S)	54	176		176		
	MCH Advisor (S)	54	136			136	
	Prov Coord (S) (Wau)	54	176				176
	Prov Coord (S) (Rumbek)	48	156				156
	Radio Producer (S)	36	117		117		
	Prov Coord (N) (D)	36	300				300
	Prov Coord (S) (Malakal)	54	176				176
	Admin Assistant (S)	54	176				176
			3191		293	586	2312
ST			630		100	60	470
TRG			3821		393	646	2782
	US	3	96		32	32	32
	3rd Country		250		68	106	76
			346		100	138	108

Input	Level of Effort	Value	Component	PHCP	MCH	Management
	Unit	000 $				
COMM						
Trucks	8	200				200
Vehicles	20	365		155	55	155
Motor bikes	62	96		96		
Bicycles	300	72		54	18	
Spares/TRP		330		148	33	149
Drugs		2200		2200		
Warehouse equipment		330				330
Training equipment		237		237		
Radio equipment		85		85		
Furniture		127		11		116
Office equipment		55				55
Dispensary equipment and other		90		90		
Boat		2		2		
MCH equipment and supplies		225			225	
		4414		3078	331	1005
CONST						
Warehouse	12	399				399
Training Center	6 *	936		710	226	
Dispensary	12 **	861		861		
Housing		482		53		429
Other		35				35
		2713		1624	226	863

* 3 district training centers
2 mid-wife training centers
1 CHW training school

** 6 in South
6 in North

Input	Level of Effort	Value	Component	PHCP	MCH	Management
OTHER						
AMTEF Overhead		1065		564		501
Veh Maint/OP		350		150	50	150
Other		180		95		85
		1595		809	50	736
Contingency		1017		472	117	428
Inflation		4157		2207	373	1577
		5174		2679	490	2005
TOTAL		18063		8683	1881	7499

TABLE I

COMPONENT COST BREAKOUT

($'000)

	Input	Level of Effort	Value	Component	....	....	Management
		pm	000				
TA			$				
LT	Proj Mgr/Health planner (N)	54	585				585
	MCH advisor (N)	54	450			450	
	Prov Coord (N) (K)	54	450				450
	Proj. Mgr (S)	36	117				117
	Health Planner (S)	54	176				176
	Health Educator (S)	54	176		176		
	MCH Advisor (S)	54	136			136	
	Prov Coord (S) (Wau)	54	176				176
	Prov Coord (S) (Rumbek)	48	156				156
	Radio Producer (S)	36	117		117		
	Prov Coord (N) (D)	36	300				300
	Prov Coord (S) (Malakal)	54	176				176
	Admin Assistant (S)	54	176				176
			3191		293	586	2312
ST			630		100	60	470
TRG			3821		393	646	2782
	US	3	96		32	32	32
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Health Care Projects, AID is already providing support to build 17 dispensaries. In this project support will be provided for the construction of six dispensaries in the North and six in the South. The GOS will meet the recurring costs of operating and staffing the PHCUs and dispensaries which will be built.

The construction itself will be done through the Ministry of Public Works in the North and through subcontractors supervised by AMREF in the South. Dispensary site selection criteria will include:

- availability of at least three associated PHCUs in the service catchment area;
- availability of, or MOH commitment to supply, staff for the dispensaries;
- availability of a contractor to build the structure;
- potential for, or existence of, a nearby safe water source;
- availability of skilled and unskilled local labor;
- an acceptable engineering/architectural site assessment study.

Preliminary dispensary site selection will be done during the development of initial provincial work plans, with final site selection to be done by the Provincial MOH/PWC just prior to construction.

Supervision of the construction in the North will be through local engineering firms on sub-contract to the contractor.

Equipment for these dispensaries will also be provided by the project and is consistent with existing GOS dispensaries.

c. Drugs and Supplies

One of the major constraints in the PHCP is the scarcity of durgs for the CHW at the village level. Assistant Commissioners of Health complain that with only a few drugs to dispense, the CHW loses his credibility in the community and has a difficult time promoting preventive health activities. With the increasing numbers of PHCUs and dispensaries, the problem is becoming acute. The procurement of drugs by the MOH is made difficult because of a lack of foreign exchange.

The project will therefore underwrite the cost of $2.2 million in PHCP drugs and supplies to be procured by the MOH with assistance from the contractor, which will be gradually phased

out over the life of the project. The North will receive $1.2 million in commodities which will be for the four targeted provinces under the project. The three targeted provinces in the South will receive $1.0 million. This amount for the South will be spent for drugs and equipment through AMREF during the project. This will enable the South to utilize the more expeditious supply route through Mombasa, Kenya, until the PHCP's own logistic supply system is in place. Because the amount of project funds allocated for drugs and supplies is insufficient to supply all PHCP dispensaries and PHCUs in the targeted provinces over the life of the project, the following priority allocation will be used: 1) dispensaries built under the project and the AID Northern and Southern PHCP projects and their satellite PHCUs; 2) PHCP complexes being staffed by personnel trained under the project.

To help defray some of the recurrent costs, the project will experiment in the South with donation boxes for voluntary contributions for all participating PHCUs and dispensaries. This scheme which has been working on a pilot basis in both North and South has been endorsed enthusiastically by the Minister of Health in the South and by several Assistant Commissioners of Health in the North. Other community schemes will be worked out during the project.

d. Improved Health Communications for PHCP

The communications component of this project consists of two pilot sub-projects: 1) Radio broadcasting, making use of CHWs for teaching health, nutrition and community development information at village-level radio forums: 2) Radio broadcasting for continuing education for CHWs.
Evaluations of PHCP operations to date
indicate that CHWs must become more active in preventative medicine and community education and development. They conclude that CHWs need stronger field support, encouragement, opportunities for advancement and supervision.

1. Broadcasting to Radio Forums: The principal pilot project for radio planned here is "radio forums" organized by CHWs and used as vehicles for promoting preventative medicine and community development in two southern provinces (Bahr El Ghazal and Lakes). For further discussion of the rationale for establishing radio forums in the south, see Annex F. Radio forums have been used for teaching health information in Tanzania, the Philippines, Peru and elsewhere. A usual forum is made of no more than twelve members of a village who meet one evening a week to listen to and discuss a 30-minute radio broadcast, although the project may test use of shorter programs in this pilot phase.

In addition to broadcasts, key parts of a radio forum project are utilization field support, getting resources and teaching materials into the field, feedback and evaluation to get maximum audience participation, keeping programming relevant to village needs, and maintaining cost-effectiveness.

Part of what makes this radio forum format justified in Sudan is that it provides a way to help ~~shift~~, the CHWs carry out their community education responsibilities. It also provides a mechanism for getting useful information about health, sanitation, nutrition and child-care directly to the grass-roots level. Third, because a successful radio project requires investment in a field support staff, this same staff can provide a source of additional supervision and support for a range of CHW activities.

Personnel running one of the only two radio broadcasting stations in Sudan, at Radio Juba, as well as senior spokesmen for the Southern Regional Ministries of Health, of Culture and Information, and of Transport and Communications are enthusiastic in their support of the project. The proposed implementing contractor for AID's Southern PHCP operations, under this project, the African Medical and Research Foundation (AMREF), is already active in radio broadcasting for health in Kenya and Tanzania and is eager to develop new programs in Southern Sudan. Finally, additional local resources to support this broadcasting are available at the newly-formed Distance Education Section of the University of Juba's Department of Education, AID's Summer Institute of Linguistics projects, and at a health, agriculture and development radio broadcasting unit of the Sudan Council of Churches, also in Juba.

2. Broadcasting for In-Service CHW Training: A second component, which will also use Radio Juba, is educational radio programs aimed at CHW and other health workers in the field. The content of these programs will parallel radio forum content so CHWs can take stronger leadership where radio forums are active.

The rationale for using radio for in-service training of CHWs is that training broadcasts will provide useful information to improve CHW expertise and performance. These will also reduce a sense of isolation and of being forgotten by providing an opportunity for at least some regular exchange with RMOH. Third, these broadcasts will provide a step for CHWs who want opportunities to show ability and to take on more reponsibility in the PHCP hierarchy. Fourth, AMREF already runs an active extension program in "correspondence" health education for front-line health workers in East Africa.

The objectives of the radio forum broadcasting project are to teach practical information related to health. In addition to nutrition, sanitation, and child care, this includes

information on livestock raising and veterinary medicine, as well as agriculture.

Broadcasting is to take place in two languages initially, although SIL resources may be utilized later for other local languages. Although the official languages of Southern Sudan are English and Arabic, these are not widely understood outside provincial capitals. The best available estimate, discussed in more detail in Annex F, is that the population of the South totals 3.07 million. Of 53 language groups in the region, Dinka accounts for 1.26 million people or 41% of all Southern residents and Nuer accounts for 480,000 people or 16%. Because these two languages are the most widely spoken in the south and are also concentrated in Lakes and Bahr El Ghazal provinces, the radio project plans use of Dinka and Nuer, while concentrating fieldwork in these two provinces as a pilot phase.

Field organization to support group activities, provide print and poster materials, answer questions, and to serve as a conduit for feed-back and field recordings is indispensable. In the radio forum project each group has a leader who provides organization, has access to a radio and takes attendance. Between four and five forum group leaders report to one monitor. Monitors are to be either CHWs or local community leaders and are expected to visit each forum group regularly, providing local organization, keeping forum leaders informed and answering questions. Field supervisors are full-time workers responsible for 35 to 55 monitors each, and are expected to meet regularly with them at local seminars forum on an individual basis.

Technical assistance, local personnel, training and commodities that make up the radio broadcasting project are discussed in Annex F.

2. STRENGTHENING MATERNAL AND CHILD HEALTH AND FAMILY PLANNING

Among the most pressing health problems of the Sudan are those associated with maternal and child health. Infant mortality is approximately 140/1,000 live births. Maternal mortality is estimated at 200/100,000. The crude birth rate is 49/1000 and fertility varies from about 5.4 to 7.9, depending on the province.

a. Problems of Pregnancy and Child Birth

From a review of existing data, a more detailed picture emerges.

conducted in Khartoum Hospital showed that 17.9% of all infants had low birth weight, overall mortality was 7.4% (and this in the largest hospital in the capital city). A survey of 1,000 uncomplicated deliveries in the hospital in nearby Omdurman revealed a rate of hemorrhaging of 186.6/1000 and a rate of "other complications" of 207.1/1000. It has been estimated that traditional practioners - traditional birth attendants (TBAS) or village midwives, perform 80 to 90% of all deliveries in the Sudan. The most common problems of mothers at the time of delivery include toxemia, obstructed labor, anemia, malnutrition and infectious hepatitis.

The prevalent practice of female circumcision (in particular, the Pharaonic form) often leads to hemorrhaging, obstruction of labor and other complications at the time of delivery. The problems of neonatals are usually birth trauma (especially when traditional midwives use harmful techniques), neonatal tetanus, respiratory distress, and gastroenteritis.

No national statistics exist on mortality and morbidity among children under 5 years of age in the Sudan. It is known that the principal health problems of infants and young children include premature birth; malnutrition and anemia resulting from poor weaning and feeding practicies; infections (particularly infant diarrhea and respiratory infections); rheumatic fever; and other communicable diseases (especially measles, polio, whooping cough, tetanus and diptheria).

b. Malnutrition

Few reliable surveys exist on the extent and severity of malnutrition in the Sudan, particularly in rural areas. It has been estimated that between 20 and 70% of pregnant women have significant iron deficiencies. Contributing to malnutrition among children are traditional beliefs and practices. For example, although 35% of children are breastfed for two years, often without adequate supplementary foods, mothers will wean infants suddenly when they discover they are pregnant, in the erroneous belief that breast milk from a pregnant woman is harmful to the nursing infant. Food taboos also contribute to malnutrition, there are prolonged dietary restrictions, invoked when a child has diarrheal disease.

Adult malnutrition is most likely related to patterns of food distribution and utilization, and cultural and seasonal factors, with economic factors also playing a major role.

c. Family Planning

There is no official Sudanese government policy on family planning. Unofficially the GOS supports family planning as a means of promoting maternal and child health through the reduction of the risks of high parity and its consequences for the health and welfare of the

child. Thus, family planning is considered a means of child-spacing for the promotion of maternal and child health rather than the limitation of births for population control. There is a belief in many quarters that Sudan's population is small given the vast land area of the country. Nonetheless, there is now support for the integration of family spacing into maternal and child health services. The GOS and the UNFPA have recently signed a $12.5 million program to reinforce activities in this field.

Evidence of the need for family planning in the Sudan is the rapid population growth rate of approximately 2.5% high infant and mortality rates, apparently high fetal wastage (i.e. stillbirths and spontaneous abortions), a high percentage of the population under 15 years of age (approximately 45%), and high levels of infertility in some areas of the South. Few studies of knowledge, attitudes and practice in family planning have been carried out, and there is virtually no information on rural areas.

Some family planning activities are carried out by the Sudan Family Planning Association (SFPA), an IPPF affiliate) and the Sudan Fertility Control Association (SFCA) is conducting research with support from IFRP and the International Fertility Research Program (IFRP) and the Association for Voluntary Sterilization (AVS). The World Fertility Survey is also being conducted in the Sudan. (See Annex C for additional details on these programs).

d. The MCH Strategy of the Government of the Sudan

The National Health Program formulated in 1975 placed priority on MCH-related activities, but there was no clear identification of MCH in the Program. Delivery of MCH services is currently uncoordinated, highly fragmented, and maldistributed, with emphasis on the curative rather than the preventive and promotive aspects of health. There are several single purpose health programs that involve MCH services administered through other Ministries with their own priorities. There has been no coordination to eliminate duplication of some aspects and neglect of others.

Coordination of MCH in the MOH has been hampered by the absence of a department with a director who has legal authority for developing policy and programs. The Minister of Health, recognizing this need, has planned the creation of a MCH unit and assigned a Deputy Director, as well as large numbers of other personnel.

The strategy of the Government of the Sudan is to integrate Maternal and Child Health Care (including family planning) into the broader Primary Health Care Program (described above) rather than to create a separate MCH/FP program. There will, however, be MCH coordinators in each of the 18 provinces, and there is a national MCH/FP program administrator whose offices are located in the Omdurman Hospital near Khartoum.

MCH/FP has not to date been emphasized in the training given the paraprofessional workers in the PHCP. Moreover, the regular nursing and medicine curricula are inadequate in their coverage of MCH/FP. Thus, the major task facing the MOH will be to provide practical training in MCH to all members of the health cadre, including Medical Assistants (MA), Health Visitors (HVs), Village Midwives (VHWs) and Community Health Workers (CHWs). Emphasis will be on training CHWs and VMHs in the delivery of MCH/FP services, since they have the greatest contact with women and children in rural communities. Other workers will be trained in basic service delivery and presumably in the supervision of the category(ies) of health workers for whom they are responsible. The GOS has also recognized the potential MCH/FP role that can be played by other community- level personnel - namely traditional birth attendants (TBAs) and village volunteers - if they are trained, particularly where no government-employed health personnel are available.

In October 1979, U.N.F.P.A. sponsored a national conference on Maternal and Child Health and Family Planning to articulate in greater detail a national MCH-FP strategy. At the conference, participants agreed that the principal objective was to improve MCH-FP services by training CHWs and VMWs to deal with such areas as nutrition, gastroenteritis, prolonged labor, high parity, breastfeeding, screening of high risk cases, health education, record keeping, complications of pregnancy (anemia, toximia, malnutrition, etc.) oral rehydration, referral and family planning. Interest was also expressed in integrating the expanded program in Immunization into MCH/FP.

Steps to be taken to incorporate MCH/FP into the PHCP will be:

1) Revise all training curricula to include material on MCH/FP (nutrition, health education, immunization, etc.)

2) Strengthen the resources and capacities of existing training schools.

3) Provide in-service training through short workshops, technical training, and seminars at the provincial and village levels.

4) Provide short courses for village volunteers and TBAs where there is no VMW.

e. Current Activities in MCH/FP

The United Nations Fund for Population Activities prepared a "Needs Assessment for Population Assistance" in late 1978. The UN sponsored MCH/FP conference in October 1979 followed up some of the recommendations of the assessment. U.N.F.P.A. subsequently negotiated with the Ministry of Health a 5-year (1980-1984) grant to support MCH/FP activities throughout the Sudan. The project was submitted in November 1979, funding of $3,772,000 is expected to be approve in June 1980, and the project should begin in July 1980. In fact, the GOS has already begun some of the activities in the project. The

U.N.F.P.A. funded project essentially provides support for the activities prescribed at the 1979 conference.

The U.N.F.P.A. grant includes $1.2 million for training; $1.57 million for equipment (drugs and contraceptives, MCH/FP kits, vehicles, and construction), $825,000 in salaries and personnel support and $120,000 for operational research (5-year totals). Emphsis will be on preventive aspects of MCH/FP and on the integration of MCH/FP within the existing PHCP system. The program will be based in the Omdurman Maternity Hospital, but provincial MCH/FP coordinators will be appointed. In brief, activities to be carried out under the U.N.F.P.A. funded project include:

- new job description;
- revision of curriculum;
- coordination with the national teacher training program in MCH/FP;
- support for provincial health worker schools (equipment, facilities, educational material in MCH/FP), e.g. 2 regional training centers, in Juba and El Obeid;
- provision of MCH/FP to rural health facilities;
- support to other community health workers who can provide MCH/FP*;
- research on such topics as KAP in breastfeeding/weaning, TBAs (numbers, practices, receptivity to training), contraception and lactation;
- 56 vehicles and funds for gas and maintenance.

The project is designed to be nationwide and to reach most VMWs, CHWs, and MAs.

A.I.D.'s MCH/FP STRATEGY

AID's strategy for strengthening MCH/FP in the Primary Health Care Program of Sudan is to complement the efforts of the GOS, aided by UNFPA and to reinforce the program. After reviewing the UNFPA MCH/FP grant proposal, the mission has concluded that the project is underfunded, particularly in the amount set aside for jeeps, construction and renovation. The quantity of MCH/FP kits and drugs that will be purchased with UNFPA funds will probably not be sufficient to supply a material program over a five-year period. Moreover, UNFPA (for reasons relating to problems with their previous MCH program in the Sudan) will only support the training of the rural health workers. Finally, the UNFPA supported program does not adequately address the MCH /FP training needs of the worker currently providing the bulk of MCH services, the traditional birth attendant.

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* This presumably means TBAs and village volunteers, but no detail is provided on activities nor does funding seem to be included.

g. The A.I.D. Supported MCH/FP Program

Thus the MCH/FP component of this project will reinforce and complement the UNFPA program by providing additional funds for kits, drugs and construction of training centers. It will support continuing and refresher training in MCH/FP for all levels of health workers, but with emphasis on Village Midwives and TBAs. Urban as well as rural health personnel will, however, be included in training. Regional MCH/FP coordinators for MCH will receive training (probably 3 months each in a third country) in substantive areas of MCH/FP as well as in the planning and administration of MCH/FP programs. A.I.D. will also assist regional MCH/FP coordinators and others responsible for MCH/FP programs to develop appropriate supervision and support services to institute MCH/FP services.

h. Traditional Birth Attendants

In the Sudan, with the exception of Gezira Province, a TBA attends 80-90% of the deliveries. In Kordofan and Darfur Provinces, locale of the AID Northern Primary Health Care Project, 92% of the deliveries are attended by TBAs. Even with the proposed acceleration of the village midwife training program, coverage of rural areas will certainly not be attained by 1983 when the CHW cadre is scheduled to be in place nationwide. During the transitional period when the TBA is being replaced by the VMW there is need to provide training and support services to these indigenous health service providers to up-grade their skills and knowledge of MCH.

The CHW is predominantly a male cadre in the Sudan and is for this reason constrained by cultural mores in providing health services to women. In programs to promote maternal and child health, the TBA and VMW are key members of the PHC team.

The technology for training and supervising TBAs has been developed and has been successfully applied in many LDCs, including the Sudan. Studies indicate that where such programs have been carried out, maternal mortality has been reduced and TBAs have applied the improved procedures taught. WHO/UNICEF program guides and training manuals are available.

This type of program is relatively inexpensive as has already been demonstrated in the Sudan. As in other training programs, necessary inputs include costs of assessments of needs (though in this program, AID will support anthropological surveys of TBAs' roles and capacity for additional responsibility as well) planning, local training, provision of basic equipment kits and supervisory services. It does not involve such recurrent costs as salaries of the trainees. TBAs would continue to be paid by their clients for their services. Central support services would help to develop consistent policies, to carry out studies and evaluations, to provide consultation, and to supply program guides, training materials, and basic supplies required by provincial and local authorities for implementation of these programs.

i. Procedure:

Training programs will be initiated at the district level, or as close to the village level as possible, when assessment of the situation indicates the need for such programs. The training will be planned and implemented by the nearest appropriate training centers. Methodologies will be adapted to local conditions and to the needs of the trainees. The training program for TBAs will be integrated into the broader training programs for village level workers to foster a team approach to village health work. It is imperative that other members of the health cadre understand the role of the trained TBA and support her in MCH/FP activities.

Continuing refresher training and referral support services for the TBA following the training period will be planned and implemented at the district and local level. Continuing assessments of the needs and evaluation of the program will be the responsibility of health administrators at the district and provincial level. Support at the national level for TBA training programs will include policy development, program guidance, consultation services on planning and curriculum development, but provision of training materials and basic supplies will be done at the provincial or district level.

j. A.I.D. Activities in MCH

General: Strengthen the capacity of the PHCP to deliver MCH/FP services.

Components:

Technical Assistance

- 1 full time MCH advisor in North and in South;
- Short term TA in regions;
- Short term MCH/FP training/curriculum to review UNFPA materials;
- Short term to put together information on TBAs and design pilot training program.

Training: Back up refresher training to be done under UNFPA project.

- 1800 VMWs trained in MCH/FP
- 1800 CHWs training in MCH/FP
- 400 TBAs trained in MCH/FP
- Short term training, MCH/FP medical officers in regions
- Training of urban health cadre in MCH/FP.

Construction: 2 VMW training schools

Commodities:

- Training equipment
- Books, manuals, materials
- Drugs
- Additional midwifery kits.

Studies and Evaluation: These are described in the "Special Studies and Evaluations" section.

- Anthropological/sociological study of TBAs (north and south)
- Pilot TBA training program
- Evaluation of CHWs and VMWs trained with UNFPA support to modify curriculum if necessary. (MCH/FP needs assessment).

Extensive study of the health needs of nomad communities and the experience of NCHWs and Village Midwives has been done by two anthropologists, David and Angela Chell. Their many recommendations on the selection, training, placement, and supervision of NCHWs, just made available in draft, should be carefully reviewed and used in the design of project support for nomadic populations. The Chells present information on the role of TBAs among the nomads, and taking into account that VMWs now cover only 1% of all nomads, and in view of the interest and abilities of nomad TBAs, strongly recommend short term training of nomad TBAs to strengthen MCH services. Their specific suggestions on how to design the training program should be considered as the details of project implementation are developed.

3. Improving Planning, Management and Logistics Systems

A. Planning and Management

Responsibility for the planning and administration of many of the projects and operations of the Ministries of Health in the North and South have been delegated to the provinces, according to the GOS action program for governmental decentralization. Provincial responsibilities include the administration of virtually all health facilities (one exception is teaching hospitals), the running of training courses, the collection and processing of health information and provincial level planning. Provincial recurrent health budbets and province development budget requests are submitted directly to the Ministry of Finance and Ministry of Planning respectively, bypassing the central Ministries of Health in the North and South. It is expected that this procedure may be modified with the advent of regional governments in May 1981.

The central ministries are responsible for long range planning, evaluation, the setting of national policies and standards, vital statistics and medical supplies and logistics. At

both the central and provincial levels there is limited capability to translate the policy objectives of the Primary Health Care Program into a coordinated, effective, functioning national program. Skills need to be strengthened, particularly in operational planning, program evaluation and resource allocation. The traditional approach to vertical planning by directors of specific components of the PHCP will need redirection to focus on horizontal planning for the broad spectrum of services of these programs. The shift in emphasis from curative to preventive services will demand greater coordination between hospital and public health program components to assure proper balance in the use of limited resources.

Well-planned and articulated health programs and projects should elicit greater support from the Ministry of Finance and the Ministry of Planning in their roles as allocators of scarce resources. Consequently, an analysis process of the PHCP must be incorporated into health planning. This will provide a firm and continuing basis for monitoring health policy and strategy choices for program development, as well as for the analysis of interrelationships within the sector.

Responsibility for health planning is shared between the Central MOH, the Regional MOH's in Juba and the West and the Assistant Commissioner for Health in the Province. Planning capability and resources are scarce at the regional and provincial levels. This is due, in part, to an inadequate data collection and information system which is unable to provide sufficient data upon which to base planning decisions. This project will assist in strengthening the health management so that it will be an important planning tool at the regional and provincial levels. It also will seek to increase the planning capability of all levels to ensure better allocation of funds, improved personnel utilization, and more efficient commodity distribution.

Management skills at the central, regional and provincial levels will also have to be improved as the PHCP is expanded. Many of the administrative positions in the health system are occupied by physicians and others who may not have had formal training in management. The project will seek to increase the capabilities of these administrators through in-service training, refresher courses and seminars.

The planning and management activity of this project will involve three main elements:

- strengthening of planning and management functions
- establishment of training programs for health administrators
- strengthening of health management information systems.

1. Strengthening of Planning and Management Functions at the Central, Regional and Provincial Levels

To improve the various planning and management functions at the Central, Regional and Provincial Ministries of Health, technical assistance will be provided in this project as follows:

In the North, a long-term Project Manager/Health Planner will be assigned by the contractor to the GOS Project Implementation Unit in Khartoum. He will work closely with the GOS Project Director and monitor all project-supported activities directed to the four participating provinces in the North. He will coordinate activities with his AMREF counterparts in the South, and with the Chiefs of Party of the ongoing AID Northern and Southern Primary Health Care Projects.

His work will also involve the development and implementation of health planning systems and training of health administrators in coordination with the Training advisor of the NPHC, for the PHCP in the North. He will also coordinate his activities with his AMREF counterparts in the RMOH - Juba and in the Southern provinces (see below). In the South, a long-term health planner (54 pm) will be provided through AMREF and will have similar functions in the Regional MOH, Juba, besides being actively involved in developing the health information system for the South.

Short term technical assistance will be provided by the contractor in the North to the MOH for a health economist (4 pm). He will be responsible for assisting the initial Regional Government in the development of annual budget procedures, financial analyses of budgets and recurrent cost projections. In addition, two short term advisors will be provided to each of the four participating Northern Provinces on a phased basis. They will assist the Assistant Commissioners for Health and their staffs in evaluating and planning their PHC and Programs. They will then determine the constraints to program expansion and the resource requirements that will be needed to overcome those problems.

Short term technical assistance in the South will be provided through AMREF to assist the Regional MOH and the participating Southern Provinces in the fields of:

- resource allocations and program budgeting
- personnel and facility survey methodologies
- operations research design
- health care administration
- health economics
- health management systems.

In the North, the project will place two provincial coordinators, first in Kordofan and then after two years in Darfur. In the South, the project will provide through AMREF three long term provincial coordinators. These provincial coordinators will assist in developing the provincial PHC programs in Lakes, Bahr El Ghazal and Upper Nile provinces in collaboration with the PHCP supervisors in those provinces.

2. Support to Project Implementation Units

The project will underwrite the local costs of establishing the Project Implementation Unit in the MOH. This includes a salary supplement for the Project Director, salaries for a secretary, clerk, administrative assistant and driver as well as office rent and equipment. A 4-wheel drive vehicle also will be provided.

In the South, the project implementation unit is the PHC Department which is located temporarily in a guest house in Juba. Obviously, this is not adequate for an expanding program. Through AMREF, the project will fund the renovation of the first floor of the Regional Ministry of Health to provide adequate office space. This will enhance integration and consolidation of PHCP activities with related RMOH units.

Some commodities (e.g. office equipment and supplies) will be provided to the GOS Project Implementation Unit in the MOH, the PHCP office in Juba and the PHCP offices in the participating provinces.

The project will also fund AMREF project management costs, which include, (a) the Juba operation: project manager and administrative assistant and local hire secretaries, clerks, drivers, watchmen and (b) essential project backstop support from the Nairobi office of AMREF: project administrative officer, project accountant, supplies/procurement officer and secretary and senior Nairobi staff in health behavior, training, communications, finance, etc.

The Executive Director and Administrative Assistant of the New York office of AMREF will require 15 person months each to support proposed AMREF activities under the project. Other direct costs include travel, per diem, office equipment, flying time and administrative expenses.

3. Establishment of Training Programs for Health Administrators

Under this aspect of the management and planning component, health administrators in the Central, Regional and Provincial MOHs, who have working relationships with the PHCP, will be

provided with in-country training opportunities to improve their skills in:

- information/statistics
- planning and programming for health services
- human resources and physical resources
- budget, accounting and audit systems
- personnel procedures
- supply and maintenance, and
- management practices.

To assist in this effort, the project manager in the North and in the South will work with Sudanese counterparts from the CMOH, RMOH, the Institute for Public Administration (IPA), the Regional Ministry of Adminstrative Reform in the South, and appropriate faculty members of the Universities of Khartoum, Gezira and Juba. Together, they will analyze the training resources and needs in health administration.

After compiling and analyzing the results of this study, a set of in-service training courses will be developed for all appropriate levels of health administrative personnel.

Two types of in-service programs will be developed. For 120 senior personnel from the ministries, Provincial Assistant Commissioners for Health and similar executive managers, 6 (4 in the North and 2 in the South) intensive 2 week seminars will be held. For 280 middle management and field administrators, including MAs, storekeepers, provincial and district personnel, and others, 12 (9 in the North and 5 in the South) training programs will be offered in the field.

The project will offer three regional programs during the first year and, after evaluation, expand until the practical limit of the effort are reached during the third and fourth years. By then, the training will be fully integrated into the personnel system of the CMOH and RMOH and will be a self-sustaining part of such Sudanese institutions as the IPA and the Universities of Juba, Khartoum and Gezira.

To assist this in-service training program, to assure its dynamic growth and continuity after termination of AID assistance, three additional activities will be supported under the project:

- participant training for 2 individuals from the South who will be sent for 4 months in health administration training in Kenya,
- seminars and workshops for senior and middle level managers including 10 joint North-South seminars. Topics will include the HMIS, logistics/supply system, personnel management, and budgeting for health programs,

- applied research into administrative problems of Sudanese development programs in general and the Primary Health Care Program in particular. In addition, baseline studies will be conducted in the targetted provinces,
- research projects may be funded through universities, the Economic and Social Research Council and the Institute of Public Administration during the life of project.

4. Strengthening of Health Management Information System (HMIS)

The Central MOH in Khartoum has the responsibility for collecting and analyzing health statistics for the entire country. The data gathered currently deal primarily with service statistics in the curative area. Few data are collected on promotive and preventive activities.

In the preimplementation phase of this project, the full time statistician in the Northern Sudan Primary Health Care Project is working with his counterpart in the Directorate of Health Statistics. As noted elsewhere, one of the weak points identified in the Sudanese health system is regional-level planning, budgeting and administration. In addition, the collection and compilation of needed health information is particularly weak at the provincial level (See Annex A). With the decentralization, these weaknesses will seriously diminish the effectiveness of the health care system.

Thus, the project will provide training for provincial-level statisticians in the North in the collection and compilation of basic health statistics. The training will be carried out by the MOH Directorate of Health Statistics, assisted if appropriate by CDC (or a comparable organization), in short (2 weeks) courses given at the provincial level in 7 provinces. Assistant commissioners of health or provincial health planners, where they exist, will participate in a national course (also conducted by CDC or comparable organization) which will include instruction on the use of health information for planning, budgeting, evaluation, and the design of health activiities to deal with prevailing disease patterns. The project will also provide support for the printing of data collection forms.

Similar activities will occur in the South resulting from the presence of the full time Survey and Evaluation Officer in the Southern Sudan Primary Health Care Project and the Vital Statistician in the RMOH PHCP Department. This project will add a local hire provincial survey and evaluation officer to be placed at Rumbek in Lakes Province. In collaboration with the Survey and Evaluation Officer, and his/her counterparts, the Health Planner and Provincial Coordinator, this officer will develop an appropriate health management

information system for front line health workers on a pilot provincial basis and monitor the utilization and flow of informative through extension fieldwork. The provincial survey and evaluation officer will also assist in developing the health statistical services for the three participating provinces besides carrying various related baseline studies. The provincial survey and evaluation officer will be Sudanese and will receive extensive in-service training from the Survey and Evaluation Officer, Health Planner and short term HMIS consultants as well as receive training with AMREF in Nairobi.

B. Health/Logistics/Supply System

As the implementation of the PHCP progresses, a number of specific problems and bottlenecks have been revealed with respect to the supply and delivery of commodities and services.

The logistics system of movement of drugs and supplies from port to the CHW is extremely weak and inefficient. Serious gaps occur in the flow of administrative leadership from the top level in the central depot, both North and South, down through middle management to the lower operational levels. Job functions and procedures need to be defined and monitored. Top management who have been trained professionally as physicians need to be made aware of modern techniques for administration and management. Inventory control procedures need to be instituted. Transport mechanisms need to be improved and a check-up system instituted to see that drugs arrive at their final destinations. For further information concerning the supply system, including a description of facilities, see Annex E.

To help overcome these constraints the project will provide selected short-term technical assistance. This assistance will be initiated in coordination with the Logistical/Supply Advisors under the AID Northern and Southern Sudan Primary Health Care Projects. These long term advisors will assist the GOS in a detailed plan for the supply system that will include the development of training programs and the design of detailed logistical procedures.

Short term logistics technical advisors (4 pm in the North and 9 pm in the South) will assist in designing and implementing procedures for improving supply.

Short term practical training programs will be provided, by the GOS with assistance from contractor personnel, for upper, middle and lower level GOS logistics/supply personnel. These persons will be trained in Sudan through short courses aimed at improving practical skills.

The present logistic/supply system is characterized by a choked pipeline with infrequent, poorly scheduled and insufficient

deliveries to the regional, provincial, district and local levels. Most PHCP commodities come through Port Sudan and are sent by rail to the Central Medical Stores of the MOH in Khartoum. Average current delivery time is over three months.

To expedite delivery from both port and airport to the central medical depot and down to the provinces, 8 trucks of appropriate capacities will be provided.

As the PHCP expands and increased numbers of dispensaries and PHCUs are established, a heavy burden is placed on the already strained MOH logistics system. Storage space for drugs and supplies is in such short supply that these items frequently are stacked outside central regional and provincial warehouses and exposed to damage by the weather. To assist in the needed expansion and improvement of the logistics and supply system, a separate chain of warehouses in the participating provinces will be established for the PHCP to replace the present inadequate or non-existent facilities.

The project will provide the PHCP warehouses with a complete complement of equipment and materials, including commodities for the repair of vehicles and equipment in the South. (See Annex E for a commodity list). Moreover they will be equipped with an appropriate handling and inventory control system to assure more efficient packaging of drugs and supplies being assembled for distribution to the provinces and from the provinces down to the district and village level. These facilities also will serve as the site for on-the-job training for pharmacists and storekeepers.

The preliminary plans and specifications for these buildings have been developed by the PP team logistics and supply expert and approved by the REDSO/EA engineer. For further information concerning site selection, plans and specifications, construction schedule and costs see Annex H.

When completed, this chain of warehouses will provide a separate system for the storage and disbursement of all health equipment, supplies and drugs for the PHCP. Ultimately, this system will be expanded by the GOS to handle all such commodities for the entire health sector.

PART IV

SPECIFIC PROJECT ANALYSES

A. Technical Analysis

1. Appropriateness of the Technology

This project will support a major component of the GOS/MOH National Health Program - The Primary Health Care Program (PHCP). This program seeks to deliver balanced curative, promotive and preventive services to the people of Sudan, particularly the rural poor and the nomads.

The PHCP is based upon a concept which utilizes low cost, lower-level paraprofessional workers to perform a small number of health-related activities. These CHWs, NCHWs and village midwives are selected from their village, trained in simple health delivery skills and returned to their own village.

Sudan's PHCP, initiated in 1977, was developed with the technical assistance of WHO experts. It is similar to primary health care programs being introduced in other LDCs.

This project takes into account the financial and technological constraints of the country. Technical assistance will be provided for health planning, training of front-line health workers, maternal and child health, health education, logistical support, and health management systems.

Baseline studies were conducted by the MOH at the start of the program. These, plus those to be conducted under the project, will be used to evaluate program performance and effectiveness over the life of the project and beyond. Also, the PHCP data collection and management system will be strengthened, thus giving a sound basis for future rural health service planning and evaluations.

Moreover, project inputs will seek to expand service delivery and strengthen the integration of health services at the rural level in the provinces. In many parts of the country, health services are non-existent. In other parts, services are fragmented and uncoordinated.

Project support will be used to evaluate existing training programs for various workers (e.g., CHW, MCH personnel). Job descriptions will also be assessed. Subsequently, MOH personnel development staff will determine how changes may be introduced into the training program to ensure that greater community awareness and integration of services might be achieved. This is particularly important in the area of MCH where promotional and preventive programs have a great potential for improving health status.

The planned extension of services delivery at the rural level is consistent with existing sociocultural and economic patterns in Sudan. There is a precedent for self-help activities and this mechanism will be utilized to ensure the building of PHCUs. Also communities are involved in selecting their own CHWs and MCHWs. Together with the VMW, these persons have responsibilities which do not exceed their abilities. In addition, the training courses under the project will be conducted in and near rural areas where trainees will be providing services and will take into account the existing traditions of health care. These courses will teach new skills which are compatible with the educational level of the recipient.

Thus, the project inputs to the PHCP will be consistent with the GOS strategy of utilizing a health service technology which is appropriate.

2. Suitability of the Technology for Replication and Diffusion

The concept of the village health worker has been introduced and tested in a number of developing countries over the last three decades. It is a concept which has gained wide acceptance in the international health field.

Replication and diffusion of the health services within the PHCP format will be more difficult as lines of administrative, logistic and supervisory support grow longer. However, the basic pattern for delivery of services to the remote villages and nomad tribes is sound.

Several important aspects of the PHCP plan reflect positively on the GOS/MOH capability to successfully conduct this program on a national scale. These include:

- the PHCP plan was developed in a systematic and analytical way, using the WHO blueprint, but adapted to fit Sudan's needs;

- the PHCP addresses diverse needs of different population groups, settled farm communities, semi-settled nomadic groups and nomad tribes;

- health activities promoted through self-help have been encouraging, particularly the construction of PHCUs for the CHW;

- the training of CHWs and other village level workers strikes a balance between the capabilities and motivation of the workers and the needs and interests of the villagers

- the responsibilities assigned to CHWs are explicit, small in number and represent a manageable range of tasks;

- ongoing evaluation is built in so that the program can be modified as more experience is gained.

The GOS is also interested in a balanced integration of curative, promotive and preventive services in rural areas. This will involve the several components of the PHCP (including MCH services).

B. Administrative Analysis

1. Issues Relevant to the GOS Health Care Delivery System

a. Organization and Function*

An important GOS policy is the decentralization of a wide range of public services, including health, to the provincial level. Currently this policy is being implemented by devolving administrative authority to Provincial Commissioners. In the health sector, this means that each Provincial Assistant Commissioner for Health has a very wide range of discretion in designing, operating and developing budgets for his province.

Once action has been taken at the provincial level, the provincial budgets are submitted directly to the Ministry of Finance in Khartoum. The MOF lacks a formal health planning unit. Instead, the provincial budgets are reviewed in line-item fashion. Questions are often raised about proposed increases over previous expenditures for particular items. MOF personnel may call upon the Central MOH personnel in Khartoum to explain this or that technical item, but it is largely the task of the Provincial Assistant Commissioner for Health to defend his requests. Thus, the Central MOH has very little planning input in to the operating budgets at the provincial level.

In 1979, the GOS announced additional plans to further devolve many administrative and social service operations to four regional clusters of provinces rather than the present one. At this time, it is unclear what, if any, implications such an action will have on the operations of the Primary Health Care Program. It is quite possible, however, that even if new or additional tasks are devolved to the provinces from Khartoum or Juba, the basic functions and characteristics of the health care system will remain largely unchanged.

In early 1980 the GOS announced its intention to implement a decentralization policy which creates six regions. (The SRG is the only existing regional government.) Detailed working plans to launch these regional governments in the North are to be worked out during the period May 1980 to May 1981. Thus Regional governments will commence in May 1981 to exercise actual authorities which are now located either at the national or provincial levels.

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* For further information see Annex A, Assessment of PHCP.

The organization of the Sudanese health care delivery system is hierarchical, with increased levels of technical skill and administrative responsibility at each ascending stage from the village (or nomadic group) to the Southern Regional Ministry, and on to the Central MOH in Khartoum.

The Central MOH is organized along traditional lines and is reasonably well staffed. Its planning, data gathering and analytic capabilities, however, are somewhat limited. At present, the Director General of the Directorate for Rural Health Services is responsible for the implementation of the PHCP.

The Southern Regional MOH in Juba has far less personnel and less management and administrative capability. There is, however, a Director for the PHCP and a concerted effort on the part of the Minister of Health to staff fully provincial offices.

The national health delivery system is characterized by a number of strengths. There is reasonably high morale and professional/career spirit among its members. The British legacy of effective and efficient non-political civil service is widely represented. The top cadre, including the provincial health officers, are seasoned, dedicated and receptive to suggestions for improving their performance.

On the negative side, field administration is hamstrung by the lack of transportation and communication. Few, if any, administrators have had formal training in planning and management skills. Coordination and control, both within the system and between it and other systems, is inadequate.

b. MOH Capability in Program Coordination

At present, coordination for the many aspects of the PHCP in the North are carried out through the Director General for Rural Health. While the PHCP is one of his responsibilities, several of the other Directorates also have input into the program (e.g. Training, Statistics, MCH and EPI).

USAID/S sees the Project Implementation Unit as an excellent mechanism for ensuring that project inputs are properly administered. The PIU will be the focal point in the MOH for coordinating PHCP activities and should expedite coordination inside the Ministry and with other ministries.

In the South, coordination of this project will be more difficult because of the lack of manpower within the RMOH. However, the addition of staff to the RMOH PHCP Department through the Southern Primary Health Care Project has helped relieve this situation to a certain extent. The GOS Project Director will be the Director of the PHCP. AMREF has provided a counterpart technical advisor (Medical Training Officer) through the Southern Primary Health Care Project who works in the RMOH under the

GOS Project Director. This technical advisor is a member of AMREF staff seconded to RMOH and will act as Technical Chief of Party in collaboration with the AMREF Health Planner. Administrative and non-technical project management responsibilities will be handled by the Project Manager who will be a member of AMREF staff in Juba but not seconded to RMOH. In addition, full time technical advisors will be placed in Lakes Province at Rumbek, Bahr el Ghazal at Wau and Upper Nile at Malakal. Each will work directly under the Assistant Commissioner for Health for Lakes, Bahr el Ghazal and Upper Nile provinces and be responsible for planning, implementing and monitoring PHCP activities in those provinces in collaboration with the respective PHCP supervisors.

Project activities in the South under the PHCP program will be coordinated by the GOS through the already established Southern Primary Health Care Project Steering Committee which is chaired by the RMOH Director of Medical Services with membership from AMREF and the PHCP Department, including the Director of the PHCP. This Committee meets quarterly.

Most of the PHCP's accomplishments to date have been through the efforts of the Sudanese themselves. Except for some inputs from multilateral donors (e.g. WHO and UNICEF), bilateral donors (e.g., Qatar, Germany, England, the Netherlands) and PVOs, it is primarily Sudanese resources that have been utilized.

USAID/S is mindful of the MOH's limited absorptive capacity. The proposed project was designed to accommodate this problem. The resource inputs have been spread out from four years (approved PID) to five years, the number of recipient provinces reduced to seven and the project greatly reduced in scope. Moreover, these inputs are intended to overcome very specific bottlenecks which the Sudanese themselves have identified in the health sector infrastructure. These problem areas are amenable to correction through the types of support proposed by this project.

Careful attention has been paid to the related issue of recurrent costs. All inputs, with the possible exception of drugs, are of the type which should not overburden the capability of thw GOS once AID's project terminates.

There is no doubt, however, that the problems of absorptive capacity and recurrent costs are much more significant in the Southern Region than in the North. At the same time, the need for the PHCP is greater in the South than in the North. The Southern component, with its considerable technical assistance inputs, is designed specifically to improve the absorptive capacity of the health system and to remove specific infrastructure bottlenecks.

There is little doubt that the health care system can absorb the new graduates of the PHCP front line workers training programs.

Many villages lack such personnel and they especially are willing to construct PHCUs by using self-help for CHWs.

Absorbing the graduates of in-service training programs will pose no problems since all will be returning to their posts. Middle and upper level administrators recognize the need for planning and management training, thus widespread acceptance and participation can be expected.

c. MOH Support Services

Three of the key elements in this proposed project are aimed at improving the GOS health support services capability. These are the health management information, the logistics/supply and the training systems. All three are intended to benefit the rural poor who are not now receiving adequate health services because of an inadequate health support infrastructure.

C. Economic Analysis

A general review of the economic situation in Sudan and its impact on the health sector as a whole is to be found in Annex D. This section will address only the economic impact and benefits relating to the PHCP.

The Primary Health Care Program is in the process of reaching the grass roots at reduced costs through self-help construction of the great majority of village units which have been completed. This is indeed a significant accomplishment and a tribute to the Sudanese people. However, the GOS realized that there were key constraints to the program which only could be addressed through increased recurrent and development expenditures such as:

- additional dispensaries to support village units;
- better trained personnel;
- more drugs and medical supplies;
- better transportation and means of communication so health services could reach the grass roots level; and
- more training facilities.

Because of these factors, both recurrent and development expenditures were increased dramatically between fiscal 1976/77 and 1977/78. (125% in the former instance and 800% in the latter). This represents a real commitment on the part of the GOS to the PHCP.

Fortunately, external assistance for the PHCP also has increased. By the middle of fiscal 1977/78, well over $16 million either has been promised or committed.

However, because of current economic difficulties including balance of payments problems, the PHCP is not expected to be able to address fully the above constraints and to achieve its goals by the end of the Six Year Plan in 1983/84. This project seeks to assist the GOS in reaching its goals in seven provinces by providing, among other things, essential foreign exchange to purchase:

- additional drugs and supplies for the PHCP;
- roofing, steel frames, wood and cement for the construction of warehouses for PHCP drugs, training facilities and dispensaries; and
- vehicles to assist in establishing an effective PHCP logistics and communication system.

It is expected that over the life of the project, GOS investments in the agricultural and industrial sectors will begin to pay off, allowing for greater investment in the social sector and the PHCP in particular.

1. Benefits

Adequate health care is a basic human need. Experience of developing countries has shown the relationship between economic development and increased health care is highly variable. Some countries have improved their health status despite limited economic development. Others have shown only limited improvements in health status despite rapid overall economic growth. A substantial body of evidence has been compiled which indicates that specific measures to improve health care for the vast majority of a population can have a major developmental impact. 1/ However, the lack of good baseline data on morbidity, mortality and productivity in rural Sudan precludes detailed calculations of the benefits from improved health that can be expected from this project.

It is therefore difficult to predict in advance the amount of suffering that will be avoided from improved health status or the increased person years of work that will become available as a result of this project. Even if this could be done, conceptual difficulties in putting a dollar value on suffering preclude calculation of benefits that could be compared with costs. In turn, the economic benefits from an increased supply of healthy labor will depend on the macro-economic development of Sudan and of the world economy.

1/ See comparative data on per capita income, infant mortality and life expectancy for all developing countries published by the Overseas Development Council in the U.S. World Development Agenda 1977.

In spite of the difficulties in estimating the benefits to accrue from this project, the nature of benefits expected in the targetted provinces are well defined; among other things:

- decreased morbidity and mortality for infants, mothers and the rural population as a whole;
- better nutrition habits; and
- prevention and control of communicable diseases.

The ability to quantify changes in these indicators will depend in large measure on the availability of rural health baseline data. Such data are now being gathered under the AID Primary Health Care projects in the North and South and will be gathered and analyzed under this projects.

Although the benefits cannot at this time be quantified in full, by comparison with the experience in other countries with similar programs for preventive health care in rural areas, we believe they will be more than sufficient to justify carrying out a project of this magnitude.

D. Environmental Analysis

The Initial Environmental Examination (IEE) of this project is attached in Annex L. It recommends a "negative determination", meaning no significant effects on the environment, for all components of the project.

E. Engineering Analysis

The construction program will support the primary health care, training and logistics supply components of the project. Twelve warehouses, six training centers, twelve dispensaries, relevant staff houses and an extension to Southern Region Ministry of Health headquarters will be constructed in four Western Provinces (North and South Kordofan and North and South Darfur), four Southern Provinces (Bahr el Ghazal, Lakes, Jonglei and Upper Nile) and at three strategic centers of administration and supply (Khartoum, Port Sudan and Juba).

Planning and implementation of the construction program will be the responsibility of existing government organizations with some project assistance in the North and of AMREF in the South. Site selection will be based on facility use criteria established by project personnel and the Ministry of Health and on construction feasibility and environmental criteria established by the Ministry of Construction and Public Works (PWC) and USAID engineers. PWC standard plans and specifications will be adapted to local materials and climatic conditions and to U.S. or geographic code 941 sources of imported materials. Project personnel and USAID

engineers will assist PWC and AMREF procurement of materials and prefabricated building components: actual construction will be performed by PWC force account labor or local private contractor (contracted by PWC) in the North and by private contractor (contracted by AMREF) in the South. Construction will be supervised by PWC and AMREF personnel and monitored by USAID and local project contracted engineers.

The construction program is planned over a four year period based on recent experience and assessments of PWC and private contractor capabilities. Costs are estimated at:

	($000)		
	LC	FX	TOTAL
Warehouse	198	399	597
Training Centers	778	936	1714
Dispensaries	801	861	1662
Housing	240	481	721
MOH expansion	18	35	53
Inflation	3177	1615	4792
Totals	5212	4327	9539

For a detailed discussion of the construction plan, cost estimates and 611(a) issues, see Annex H, Engineering Analysis of Construction Activities

F. Social Soundness Analysis - Summary and Principal Issues

This section presents a summary of some of the basic data pertinent to a social analysis of the Sudan Rural Health Support project, and a discussion of the principal social issues. More detail is provided in Annex D, "Social Soundness Analysis".

1. General Description of the Socio-Economic Setting

The Democratic Republic of Sudan, the largest country in Africa, is dominated by a tropical continental climate in the South and a desert climate in the North. The population of the Sudan is approximately 17.3 million people; 82 percent live in rural areas (71 percent

sedentary and 18 percent nomadic).

The country if characterized by a high degree of cultural diversity, but in general the north (which contains the capital, Khartoum, and most of the nomadic population) is predominantly Arabic. The south is influenced more by African than Islamic culture, and loyalty to kin in extended families affects political, economic and social behavior in this part of the country.

2. Identification of Beneficiaries

The principal beneficiaries of the project are: the rural population of the country (especially in the provinces of Bahr el Ghazal, the Lakes, and Upper Nile in the South; and North and South Kordofan and North and South Darfur in the North); women and children, nomads; and the relatively poorer population of the South. The health personnel of the MOH involved in the MCH and PHC programs will also benefit from project activities.

a. Rural Population

The rural population of Sudan suffers from a wide range of diseases, including malaria, tuberculosis, gastro-intestinal diseases, water-borne infections, malnutrition and a variety of ill-diagnosed fevers. Statistics, though sparse and unreliable, reveal high infant and maternal mortality rates and a short life expectancy. In some rural areas man-made health problems, such as high prevalence of malaria and schistosomiasis, are a major cause of morbidity and mortality.

Preventive health measures generally are unknown in rural villages. The handling of food, water, and waste is generally unhealthful and contributes to the high rates of diseases. Even where Community Health Workers are in place, villagers (and nomads) continue to depend on traditional birth attendants, village midwives and healers. Among most rural (including nomadic) groups, virtually all deliveries are performed by these usually untrained individuals.

Family planning and the provision of contraceptives is a sensitive issue. There are strict prohibitions in the discussion of sexual matters, and there is a general belief that with Sudan's vast "open spaces" continued population growth is necessary for both national defense and economic development.

b. Nomads

The nomadic population of Sudan moves across vast expanses of the north and west of the country, making the delivery of health care a particular problem. This movement gives little opportunity for members of the community to obtain enough formal education to qualify as part of the health cadre.

c. Women and Children

The PHC Program will benefit women and children in particular by training additional CHWs and NCHWs and midwives and by emphasizing MCH, nutrition, and child spacing. Among the benefits accruing to women will be better, more regular, pre-natal and post-natal care, nutrition and hygiene education, and safer deliveries.

d. The South

The south of the Sudan suffers from poorer health conditions and access to services than the north. The reasons are historical, political (e.g. the 17-year civil disturbance during which many health facilities were destroyed), geographical (the South's poor infrastructure present severe problems for transportation) and cultural. Special emphasis in the project will be placed on the south, where the "poorest of the poor" are found in Sudan.

e. The Health Cadre

Personnel in the health system - and new personnel trained under the project - will benefit from the training, orientation, and improved logistics, management and supervisory support they receive as a result of this project.

3. Women in Development

Women in most of the rural areas of the Sudan (except in some parts of the Red Sea and Kassala Provinces) work hard their entire lives within the family/domestic sphere and play an active and crucial role in the socioeconomic life of the community. Women in both the North and South have rights to own and retain their property deriving from Islam, tribal or customary rights. When a woman loses her husband or must increase her earning power, it is not uncommon for her to seek employment in the provincial or national capital. Women are highly resourceful, adaptable and mobile and responsible to opportunity to sustain their families or to improve their lot when the opportunity arises. In the modernizing process when new employment opens up in the community, women are often left behind or left out, not for lack of interest or capability, but often because males are encouraged into these new positions. The CHW is a case in point: only 5 out of 384 CHWs in the North are women, none in the South are.

There appears to be a strong association between a rural family's standard of living and the involvement of its women in non-traditional economic and social roles. The subsistence farmer and nomad shares extensive economic - especially labor - tasks with women; aside from preparing food and tending children, women work the fields near the home and engage in other food and income-earning practices. For instance, among the Dinka of the South, adolescent girls go along with boys and a a few old men when the cattle are taken into their dry season range.

Aside from preparing food and shelter, these young women learn a great deal about the Dinka's central economic activity - cattle raising.

Islam predominates in the arabized north of the Sudan among the better-off Northern rural families and the middle class of villages and towns, much less freedom is permitted girls and women. While some may attend school, and even gain a secondary school diploma, very few enter the modern economy; they are married soon after graduation and are placed under the supervision of their mother-in-law or even grandmother. A political science professor at the University of Khartoum who has made an extensive study of local participation in rural Sudan explained that it would be difficult to encourage "respectable" young Northern women (by which he meant the daughters of the middle class and local notables) to take part in local government and politics or in community public services (such as health care) because the GOS's recent push to secure female involvement has led to the opinion that only marginal women enter these activities. Yet the professor agreed that nomadic women and members of the great underclass of rural Sudanese society would have little difficulty in working with their male peers since the two genders (unlike their better-off kinfolk) traditionally work together extensively.

The conservative male/female relations associated with most Islamo-Arabic societies are more pronounced in the east where the movement of women in more restricted. Women in the eastern region do not typically participate in the socio-economic life of the community and largely live in a world of their own. These traditions are closer to traditions in the Arabian peninsula where, in fact, some of the tribes in the east have their origins. For instance, the Rashiada tribe preserve the custom of veiling. By contrast, women in the west have a marked degree of socio-economic participation in both sedentary and nomadic communities. Women in the villages of the west are active in crafts productions, selling food and crafts in the market, engage in building construction, agriculture, etc. Male/female relations are less strict in general in the south, and women are active in village and tribe socio-economic life and often make an important economic contribution to family welfare. Many make needed money through brewing, trading and food preparation.

In short, while it is easier to get female representatives of the rural poor majorities into front line occupations, it will also be difficult to find candidates who possess the educational criteria presently demanded. Objections to recruiting women as CHW, MA and other service providers on the grounds that this will offend local custom is perhaps truer of certain social classes and regions where Islam is especially strong than for the south and for the majority of the nation.

There are a wide range of social and cultural factors which impinge directly on the utilization of modern health care facilities. One is the tradition of keeping women apart from male society. In the Islamic

north, this takes the form of mores which limit strictly a man's entering dwelling places, talking with, or even "noticing" the presence of someone else'w wife or daughter. Moreover, there are extensive and widely respected taboos against physical contact between men and women who are not married to each other. Hence, health care of women in greatly restricted to other women. Childbirth and child rearing are cases in point. Consequently, any health initiative such as MCH must encounter some or great difficulty depending on the extent to which it violates prevailing customs.

The nomination of candidates of midwifery and CHW training is done in most cases by local village or tribal council. While it is undoubtedly preferable that this responsibility be vested at the local level, tradition and politics may well work to discriminate systematically against certain classes of people. For instance, there are practically no women among the CHWs. In part, this reflects the formal educational criterion; few young women - especially from rural areas - have an opportunity to attend school. But even where this educational lock has been forced and the door to health training is open, custom and prejudice could (and do) work against the entry of women. The increased division of labor which restricts female roles plus the preservation of Islamic traditions seen in Sudanese towns and cities may reinforce these attitudes more firmly among the urban-born and educated medical professionals who command the health system than among rural men and women. In any event, securing the participation of women in the health care cadre will be a difficult and complex task.

Utilization of health services by women would be greatly increased if more women became providers. There are severe taboos in most rural communities about cross-gender body contact and about men entering the quarters of women in the absence of husbands or other senior males. Moreover, MCH has not been given priority attention by the MOH, perhaps because of the role traditionally played by midwives. While upgrading of the village midwives is undoubtedly called for, there remains the problem of making suitable adjustments to meet current needs. Thus the project takes the approach outlined below, of incorporating both traditional midwives (traditional birth attendants) and village midwives, into the MCH component of the PHCP.

4. Principal Social Soundness Issues

a. Cultural/Approriateness

It is worth emphasizing that the concept of primary health care supported by this project is not new; it has been tested in Sudan and elsewhere. The project will reinforce a national program already functioning in many areas (and in part supported by the AID funded North and South Primary Health Care Programs).

A number of steps will be taken to insure that the PHCP is culturally appropriate. CHWs will be chosen by their villages

and will return to those villages to work. Nomads recruited for training will have to meet somewhat less rigorous educational requirements; overall ability, commitment and rapport and communications skills will be more important criteria than formal education.

The MCH/Family Planning component will be developed by the Sudanese in collaboration with U.N. FPA and AID advisors. New MCH/FP skills and responsibilities will be added to the current functions of the traditional birth attendants and village midwives who at present deliver virtually all babies in rural Sudan. The success and acceptance of paraprofessional health workers in performing these new functions is being closely monitored in the pilot project with Columbia University in rural Khartoum province.

Acceptance of the new health workers will not come overnight. In communities where CHWs are practicing, villagers and nomads still continue to seek care from traditional practitioners, some exclusively so, some in combination with the CHWs.

b. Women and the PHCP

The Women in Development section described some of the problems of recruiting women as health providers (particularly for MCH/FP), and the limitations of an essentially male health cadre in reaching Arabic Islamic women. This problem will be addressed by the training and utilization of village midwives and traditional birth attendants to deliver MCH/FP. Village midwives, a traditionally acceptable source of MCH services, for example, are already proving this care. With additional training, they and the TBAs, will reinforce the coverage achieved by the other (virtually all male) health providers. (See Appendix C for a breakdown of MCH/FP tasks currently performed by each member of the health cadre.) However, the GOS should also ensure that a certain proportion (25%) of the CHWs selected for training are women.

c. Community Participation

Certain forms of community participation will be easier to generate than others. Communities must be aware of, and accept from the outset, their responsibilities vis-a-vis the PHCP. For example, it is difficult to get rural people involved in environmental sanitation. Prevailing custom is to use whatever bush or tree is available; little or no thought is given to animal excreta contaminating water; flies, rats and other pests are accepted as a normal part of the food storage and preparation environment. In short, there is a vast and complex web of cultural, social and environmental constraints which must be overcome in order to secure the participation of the rural population in preventive health care activities. The health education and promotion aspects of the project still help overcome this problem.

Another facet of participation is the recruitment and training of community health workers, midwives, sanitarians and other

local cadres. Formal educational requirements effectively eliminate a vast portion of potential candidates. This is especially true among the nomads and in the Southern communities where attendance at school is virtually impossible for the majority of the rural children. Thus, the staffing of local facilities with local people will be difficult unless the selection and training procedures are corrected to encourage broader participation.

Past experience has shown success in getting communities to contribute to the construction of health facilities usually with labor and local materials (though less in the South than in the North). The GOS's philosophy is that health care, like other social services, should be provided free of charge. Thus neither patients nor communities are obliged to pay fees or make any other monetary contributions towards the salaries or operating costs of health facilities. One approach that appears to be working in numerous communities is to have a box for voluntary contributions by clients. However, this is not a dependable source of funds. The MOH should seriously consider requiring some local cash contribution for health services, such as a monthly donation by the village council towards the salary of the CHW or VMW. This would not only relieve part of the GOS's financial burden, but would serve to make the village health workers more responsive to the needs of the community.

d. Female Circumcision

Female circumcision is both a health and a social problem. Details on the health consequences of female circumcision and its prevalence in Sudan are contained in the Annex. In general, it is widespread in the Northern part of the country, and, as a deeply ingrained cultural and religious ritual, it is likely to continue far into the future.

At a recent meeting of AID/W health personnel, chaired by Dr. Stephen Joseph, the issue of an Agency position on female circumcision was discussed. The group considered, in particular, whether or not it was realistic to expect the Sudan Health Support Project to include specific activites aimed at discouraging the practice of female circumcision in the Sudan. The conclusions of the meeting were: (1) it was too premature to require specific actions in a given country; (2) the first step should be to make AID staff aware of female circumcision as a serious health threat; (3) attempts should be made to working through private and other donor agencies organization.

This temporary guidance corresponds well with the approach being followed in the Sudan. UNICEF is making an attempt to address female circumcision as a health problem, as part of MCH activities. UNICEF has developed a pamphlet for health personnel in the Sudan, which describes the hazards of the practice. The pamphlet is currently being tested. In its support for MCH/ training, AID will encourage the inclusion of information on female circumcision as a practice harmful to

the health of women and girls.

e. Health Behavior: From a Curative to a Preventive Mode

One of the most difficult accomplishments of the Primary Health Program in Sudan will be a shift in orientation - on the part of the health care provider as well as consumer - from a curative to a preventive mode. The present health care system of the Sudan has evolved from a curative, Western model. Moreover, as baseline surveys have shown, basic preventive health measures are not taken in many communities (for example, human wastes in rural communities surveyed were deposited with no concern for contamination) and the link between these preventive measures and better health is not understood.

Preventive health behavior must receive greater emphasis in the curriculum of the health personnel, in the radio programs, in the supervisory activities, and in the activities of health providers.

G. Financial Analysis and Plan

1. General

The proposed Rural Health Support Project will cost a total of $18,063,000 in grant funds to finance technical assistance, training, commodities, construction and vehicles.

The GOS contribution is estimated at LS11,883,000 or 45% of total project costs. Of this amount, LS1,813,000 is in local currency from operating funds and LS10,070,000 is in local currency which is expected to be financed with PL 480 Title III Program funds.

Approximately $8.5 million estimated costs for project activities excluding inflation, in the Western region total. Of this amount, AID would contribute $5.4 million in foreign exchange. The GOS will contribute $3.1 million in pounds from operating funds and counterpart.

For the Southern Region, estimated project costs excluding inflation, approximately $11.8 million. Of this amount, AID will contribute $7.4 million in foreign exchange. The GOS will provide $4.4 million in pounds from operating funds and counterpart.

USAID proposes the use of population funds to finance the maternal and child health component of the project ($1,881,000). Activities under this component will assist in providing the necessary rural infrastructure upon which to base a possible follow-on bilateral family health project. In particular, construction of additional training facilities of which 50% is allocated to population funds, and the training of midwives in MCH activities, including child spacing, will assist in developing the trained human resource based upon which to launch a possible bilateral follow-on to the AID/DS/POP pilot project, "Developing, Testing and Demonstrating the Community Based Delivery of Family Health, Nutrition

TABLE II

PROJECT BUDGET

COMPONENT		PY1		PY2		PY3		PY4		PY5		TOTALS	
		LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX
I. Technical Assistance	PM												
A. Long Term													
1. Proj Mgr (N)	-54-	20	130	20	130	20	130	20	130	10	65	90	585
2. Proj Mgr (S)	-60-		*		*	8	39	8	39	8	39	24	117
3. Health Planner (S)	-54-	4	20	8	39	8	39	8	39	8	39	36	176
4. MCH Advisor (S)	-54-	2	16	5	30	5	30	5	30	5	30	22	136
5. MCH Advisor (N)	-54-	6	50	12	100	12	100	12	100	12	100	54	450
6. Health Educator (S)	-54-	4	20	8	39	8	39	8	39	8	39	36	176
7. Radio Producer (S)	-36-					8	39	8	39	8	39	24	117
8. Prov Coord (N) (K)	-54-	6	50	12	100	12	100	12	100	12	100	54	450
9. Prov Coord (N) (D)	-36-					12	100	12	100	12	100	36	300
10. Prov Coord (S) (W)	-54-	4	20	8	39	8	39	8	39	8	39	36	176
11. Prov Coord (S) (M)	-54-	4	20	8	39	8	39	8	39	8	39	36	176
12. Prov Coord (S) (R)	-48-			8	39	8	39	8	39	8	39	32	156
13. Admin Asst (S)	-54-	4	20	8	39	8	39	8	39	8	39	36	176
Sub Total		54	346	97	594	125	772	125	772	115	707	516	3191
B. Short Term													
1. Logistics (S)	- 9-	3	15	3	15	3	15					9	45
2. Evaluation (S)	-13-					6	30			7	35	13	65
3. Comm/Radio (S)	- 8-					4	20	4	20			8	40
4. HI System/Mgmt (S)	-16-	2	10	6	30	5	25	3	15			16	80
5. Curriculum (N)	- 6-				60								60
6. Statistics (N)	- 6-				30		30						60
7. Imp Planning (N)	- 8-		40				40						80
8. Health Econ (N)	- 4-				40								40
9. Evaluation (N)	- 9-						45				45		90
10. Logistics (N)	- 4-		40										40
11. Imp Planning (S)	- 6-	4	20	2	10							6	30
Sub Total		9	125	11	185	18	205	7	35	7	80	52	630

COMPONENT		PY1		PY2		PY3		PY4		PY5		TOTALS	
		LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX
II. Training													
(A) US	3		16		32		32		16				96
(B) Third Country			23		74		88		52		13		250
(C) Local													
(1) Reorientation	(194)	60		90		115		115		105		485	
(2) Refresher	(174)	30		60		100		130		120		440	
(3) Other	(62)	38		87		86		86		86		383	
Sub Total		128	39	237	106	301	120	331	68	311	13	1308	346
III. Commodities	#												
Trucks	8		200										200
Vehicles	20		220		145								365
Motorbikes	62		12		22		24		24		14		96
Bicycles	300		9		9		15		18		21		72
Spares/Trp			198		79		18		19		16		330
Drugs			200		400		400		600		600		2200
WH Equip			330										330
Training equipment				30	158	15	79					45	237
MCH equipment		1	25	1	50	1	50	1	50	1	50	5	225
Radio equipment					85								85
Furniture		20	83	3	17	3	27					26	127
Office equipment		20	40	2	15	4	10					26	65
Dispensary equipment						5	20	5	20	5	20	15	60
Boat		1	2									1	2
PHCU construction		36		36		36		36		36		180	
Tools for CHWs		2	4	2	4	2	4	2	4	2	4	10	20
Sub Total		80	1323	74	984	66	647	44	735	44	725	308	4414

COMPONENT		PY1		PY2		PY3		PY4		PY5		TOTALS	
		LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX
IV. Other													
1. AMRF OH	16	17	184	26	194	26	229	26	229	21	229	116	1065
2. Local contract OH (N)		25		25		25		25		25		125	
3. PIU costs		27		27		27		27		27		135	
4. Op research		15		20		25		15		10		85	
5. Veh op/maint			36		68		81		83		82		350
6. Other		20	20	40	40	40	40	40	40	40	40	180	180
7. Counterpart salaries + per diem		163		239		260		242		214		1118	
Sub Total		267	240	377	302	403	350	375	352	337	351	1759	1595
Contingency 10%		54	207	80	217	91	209	88	196	81	188	394	1017
Inflation 10% FX					239		484		714		958		2395
15% LC				131		324		505		670		1630	
Sub Total		592	2280	1007	2627	1328	2787	1475	2872	1565	3022	5967	13588
V. Construction													
Warehouse	-12-	198	399									198	399
Training centers	- 6-			323	416	455	520					778	936
Dispensaries	-12-					267	287	267	287	267	287	801	861
Housing		159	319	37	74	44	89					240	482
Other				18	35							18	35
Engineering services *		31		22		39						92	
Sub Total		388	718	400	525	805	896	267	287	267	287	2127	2713

COMPONENT	PY1		PY2		PY3		PY4		PY5		TOTALS	
	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX
Inflation on Construction FX 20%		144		231		652		308		427		1762
LC 40%	147		365		1349		759		1169		3789	
Inflated at 15%												
Sub Total	535	862	765	756	2154	1548	1026	595	1436	714	5916	4475
Grand Total	1127	3142	1772	3383	3482	4335	2501	3467	3001	3736	11883	18063
POP funds												
TA (LT)		66		130		130		130		130		586
(ST)				60								60
Vehicles		35		20								55
Bicycles		3		3		4		4		4		18
Spares/Trp		17		11		1		2		2		33
MCH equipment and supplies		25		50		50		50		50		225
MCH training centers						226						226
Vehicle maint/op		2		6		14		14		14		50
MCH part training		2		52		68		8		8		138
Sub Total		150		332		493		208		208		1391
Contingency 10%		15		33		27		21		21		117
Inflation 10%				36		155		76		106		373
* Inflation 20% on construction												
Total		165		401		675		305		335		1881
DA TOTAL		2977		2982		3660		3162		3401		16182

TABLE II

PROJECT BUDGET

COMPONENT		PY1		PY2		PY3		PY4		PY5		TOTALS	
		LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX
I. Technical Assistance	PM												
A. Long Term													
1. Proj Mgr (N)	-54-	20	130	20	130	20	130	20	130	10	65	90	585
2. Proj Mgr (S)	-60-		*		*	8	39	8	39	8	39	24	117
3. Health Planner (S)	-54-	4	20	8	39	8	39	8	39	8	39	36	176
4. MCH Advisor (S)	-54-	2	16	5	30	5	30	5	30	5	30	22	136
5. MCH Advisor (N)	-54-	6	50	12	100	12	100	12	100	12	100	54	450
6. Health Educator (S)	-54-	4	20	8	39	8	39	8	39	8	39	36	176
7. Radio Producer (S)	-36-					8	39	8	39	8	39	24	117
8. Prov Coord (N) (K)	-54-	6	50	12	100	12	100	12	100	12	100	54	450
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10. Prov Coord (S) (W)	-54-	4	20	8	39	8	39	8	39	8	39	36	176
11. Prov Coord (S) (M)	-54-	4	20	8	39	8	39	8	39	8	39	36	176
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4. HI System/Mgmt (S)	-16-	2	10	6	30	5	25	3	15			16	80
5. Curriculum (N)	- 6-				60								60
6. Statistics (N)	- 6-				30		30						60
7. Imp Planning (N)	- 8-		40				40						80
8. Health Econ (N)	- 4-				40								40
9. Evaluation (N)	- 9-						45				45		90
10. Logistics (N)	- 4-		40										40
11. Imp Planning (S)	- 6-	4	20	2	10							6	30
Sub Total		9	125	11	185	18	205	7	35	7	80	52	630

COMPONENT		PY1		PY2		PY3		PY4		PY5		TOTALS	
		LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX
II. Training													
(A) US	3		16		32		32		16				96
(B) Third Country			23		74		88		52		13		250
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Bicycles	300		9		9		15		18		21		72
Spares/Trp			198		79		18		19		16		330
Drugs			200		400		400		600		600		2200
WH Equip			330										330
Training equipment				30	158	15	79					45	237
MCH equipment		1	25	1	50	1	50	1	50	1	50	5	225
Radio equipment					85								85
Furniture		20	83	3	17	3	27					26	127
Office equipment		20	40	2	15	4	10					26	65
Dispensary equipment						5	20	5	20	5	20	15	60
Boat		1	2									1	2
PHCU construction		36		36		36		36		36		180	
Tools for CHWs		2	4	2	4	2	4	2	4	2	4	10	20
Sub Total		80	1323	74	984	66	647	44	735	44	725	308	4414

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4. Op research		15		20		25		15		10		85	
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6. Other		20	20	40	40	40	40	40	40	40	40	180	180
7. Counterpart salaries + per diem		163		239		260		242		214		1118	
Sub Total		267	240	377	302	403	350	375	352	337	351	1759	1595
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Training centers	- 6-			323	416	455	520					778	936
Dispensaries	-12-					267	287	267	287	267	287	801	861
Housing		159	319	37	74	44	89					240	482
Other				18	35							18	35
Engineering services *		31		22		39						92	
Sub Total		388	718	400	525	805	896	267	287	267	287	2127	2713

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	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX
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LC 40%	147		365		1349		759		1169		3789	
Inflated at 15%												
Sub Total	535	862	765	756	2154	1548	1026	595	1436	714	5916	4475
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TA (LT)		66		130		130		130		130		586
(ST)				60								60
Vehicles		35		20								55
Bicycles		3		3		4		4		4		18
Spares/Trp		17		11		1		2		2		33
MCH equipment and supplies		25		50		50		50		50		225
MCH training centers						226						226
Vehicle maint/op		2		6		14		14		14		50
MCH part training		2		52		68		8		8		138
Sub Total		150		332		493		208		208		1391
Contingency 10%		15		33		27		21		21		117
Inflation 10%				36		155		76		106		373
* Inflation 20% on construction												
Total		165		401		675		305		335		1881
DA TOTAL		2977		2982		3660		3162		3401		16182

and Family Planning Services in Sudanese Villages". (See budget tables following).

The following is a projected estimated annual disbursement schedule:

		($,000)
FY 1980	-	No disbursements
FY 1981	-	3,500
FY 1982	-	4,600
FY 1983	-	5,400
FY 1984	-	3,900
FY 1985	-	600
		18,100

2. Basic Financial Constraints

The current economic maladies afflicting Sudan have a direct effect on the project, especially concerning foreign exchange.

a. Fuel

Rising fuel costs and its unavailability due to lack of foreign exchange have restricted severely the delivery of services under the PHCP. For example, delivery of 24 new vehicles earmarked for the PHCP in the South was delayed two months for lack of fuel. Costs for fuel under the project are considerable but are recognized as a necessary expenditure for its sustenance. Different fuel cost allocations have been assigned for various vehicles accoridng to weight, class and usage.

b. Construction

The capital development program under the PHCP has been slowed considerably by the lack of foreign exchange to purchase essential construction materials. The project will provide foreign exchange to construct essential capital structure in targetted provinces.

c. Drugs

Provincial commissioners of health have said that a key constraint to the PHCP was a lack of drugs. The GOS has not been able to

provide sufficient drugs for the PHCP because of balance of payments problems. The project will provide $2.2 million in PHCP drugs for the selected provinces.

d. Local Currency

In addition to foreign exchange restrictions, the GOS faces liquidity problems in regard to local currency. In the South, for instance, it is not uncommon for health workers and civil servants posted in rural areas to go for several months without receiving their salaries. For this reason, this project has kept to a minimal new personnel who are outside GOS programmed increases and has transferred the costs for such new personnel to the GOS gradually over the life of the project to prevent an unrealistic burden. MOH officials have given assurances that costs in this category will be met on the basis of curren budgeting allocations and anticipated receipt of funds.

3. Recurrent Costs

Current GOS methods of book-keeping within the MOH and RMOH make it difficult to predict what the recurrent costs of the project actually will be. The central budget and the southern regional budget for health are divided into two main sections - Chapter I (Personnel) and Chapter II (Goods and Services). All the various health programs are included under these general headings and one cannot separate the PHCP from other programs. In addition, the Ministries of Finance in Khartoum and Juba have no centralized records of expenditures for health accounts have never been closed and are in arrears for periods ranging from four months to five or six years. Another complication in determining recurrent costs is that some of the training, MCH and communication elements of the project are experimental in nature.

Below is a preliminary estimate of recurrent costs which will be incurred in support of the activities in this project which would be additional to those incurred at present. Certain costs represent cash requirements while other constitute deferrable expenses.

	Annual	LS 000 Once in 5 years
Training	300	
Salaries	250	
Vehicle operations	80	
PIU costs	27	
Building maintenance	240	
Vehicle replacement		211
Drugs and supplies	600	
Other	100	
	1,597	211

TABLE III

LOCAL CURRENCY BREAKDOWN

COMPONENT	PY1		PY2		PY3		PY4		PY5		TOTALS	
	GOS Bud	Count	GOS Bud	Count	GOS Bud	Count	GOS Bud	Count	GOS Bud	Count	GOS Bud	Count
I. TA												
LT Support		63		108		143		132		122		568
II. TRG												
Local												
(1) Reorientation		60		90		115		115		105		485
(2) Refresher		30		60		100		130		120		440
(3) Other		38		87		86		86		86		383
		128		237		301		331		311		1308
III. Commodities		80		74		66		44		44		308
IV. Other												
Other Costs	10	94	20	118	20	123	20	113	20	103	90	551
Salaries/per diem	163		239		260		242		214		1118	
	173	—	259	—	280		262		234		1208	
Contingency 10%	17	37	26	54	28	63	26	62	23	58	120	274
Inflation 15%			43	88	99	225	150	355	193	477	485	1145
Sub Total	190	402	328	679	407	921	438	1037	450	1115	1813	4154

COMPONENT	PY1		PY2		PY3		PY4		PY5		TOTALS	
	GOS Bud	Count	GOS Bud	Count	GOS Bud	Count	GOS Bud	Count	GOS Bud	Count	GOS Bud	Count
Construction		388		400		805		267		267		2127
Inflation		147		365		1349		759		1169		3789
TOTAL	190	937	328	1444	407	3075	438	2063	450	2551	1813	10070

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Inflation		147		365		1349		759		1169		3789
TOTALS	190	937	328	1444	407	3075	438	2063	450	2551	1813	10070

In keeping with the intent to minimize the burden of local expenses on the GOS during the project, it is intended that during the second year a study will be undertaken which will: (a) refine actual recurrent cost estimates; (b) examine possible untapped local financial resources, and (c) suggest options for the phased assumption of all local costs by the GOS during and after the project. In this regard it should be noted that the GOS is constitutionally obliged not to charge "fees" for medical services. In order to tap local resources various communities have resorted to a "donation box" which, acting on peer group pressure, does bring in limited funding from the user community. More importantly, it begins to establish a pattern of client awareness of cost for service provided. Acceptance of "donation boxes" will be monitored carefully during the project.

The above difficulties also make it difficult to determine cost per beneficiary. Even if expenditure information were available it would not be possible to relate costs to beneficiaries because of inadequate census data. Each primary health care worker is supposed to service 4,000 people; however, it is highly unlikely that at this time coverage per worker has been expanded to this number. A tentative cost per beneficiary can be arrived at by assuming that population in the project area will benefit either directly (client at new PHCU or dispensary) or indirectly (improved delivery system for rural health services). This would lead to a per beneficiary cost in the project of $4.5 and a post project per beneficiary cost of $.28 per year. The obvious deficiency in this calculation is that neither at present nor at the end of the project will all the population have received "benefits" from the project. There is, however, no way in advance to determine specific numbers of beneficiaries.

Although it is difficult to determine recurrent costs, it is clear that if the present balance of payments problem exists when the project ends in 1985 the GOS will not be able to fully sustain the additional level of drugs ($2.2 million) provided under the project. However, current investments in the agricultural and industrial sectors recommended by the IMF are expected to ease the balance of payments problem during the life of the project thus providing for an increased investment in the health sector. In addition, other foreign donors may well fill the drug foreign exchange gap.

In any event, it would be a tragic mistake to deprive the rural poor of the health benefits derived from drugs supplied under this project simply because the GOS may not have sufficient foreign exchange during the life of the project to fully pick up these costs.

Local communities are increasingly contributing to the financial support of the PHCP and this project seeks to support these efforts. In a country where medical care is free, local citizens are beginning to realize that the quality of care can be increased through local financial support. The major number of PHCUs in the North have been built by self-help and RMOH in Juba is strongly recommending that all PHCUs will be built by self-help. Another strong indication of local support for health

services is that government-trained midwives are paid by village councils.

The concept of the PHCP is for communities to pick up the cost of salaries for the CHW at the end of the Six Year Plan. Southern health officials have established a committee to investigate the possibility of transferring this responsibility to local communities before the end of the Plan.

Construction costs for warehouses, dispensaries and training facilities are one-time investments which will require a minimal of recurrent costs for maintenance. Additional personnel, outside of planned human resources expansion, have been kept to a bare minimum. Moreover, bicycles provided under the project are to be paid for by recipient CHWs and VMWs. Maintenance for motorcycles distributed under the project will be paid for by recipients.

PART V

IMPLEMENTATION ARRANGEMENTS

A. Implementation to date in SPHC & NPHC

The implementation modes to be used in this project will follow the actual implementation patterns established in the SPHC and NPHC. To the extent that these projects are operational, no new modus operandi need to be developed. Consequently, a brief summary of accomplishments of implementation of the two projects is appropriate.

SPHC

A recent PES on the SPHC has determined that the project is proceeding reasonably. Training activities met the intended targets and one of the training schools is essentially complete. The training manual has been revised. An important baseline survery has been completed. Logistics activities have been slow due to the lack of a long-term advisor who has now arrived. Although certain problems in implementation were evident at the beginning of the project (mainly staffing) it now appears to have worked through these problems and can expect to continue reasonably smoothly.

NPHC

Project activities in this project commenced in August 1979 with the arrival of the three advisors. One of these advisors was unable to continue and was not replaced until April 1980. Accomplishments to date have been development of an inventory and reporting system for commodities, 2) a pilot primary health care data flow system for provincial use, 3) a vehicle-use reporting system 4) participation in revision of the CHW training manual and 5) completion of a spare parts warehouse facility. As in the SHPC, there have been a variety of implementational problems which are being worked out as implementation progresses.

B. GOS, AID and U.S. Contractor Administrative Arrangements for Rural Health Support Project

1. The GOS

a. Policy Direction and Mechanism for Oversight and Supervision

1) At the National Level

The GOS policies on health are clearly enunciated in the National Health Program. Emphasis is placed on the

delivery of health services through the Primary Health Care Program.

While policy-making has involved central, regional and provincial authorities, program implementation has been decentralized to the regional and provincial levels. Some functions, however, are still retained by the Central MOH. Thus, this health support project will involve direction, oversight and supervision at several levels.

On the national level, the Central MOH in Khartoum has responsibility for training quality, statistics, and logistic/supply. A description of the capabilities and supervisory role of each to these GOS entities is described in Part IV and in Annexes A and C.

2) At the Regional Level

In the North

Programmatic: In the North, the Project Director will be appointed by the Minister of Health to head a special Project Implementation Unit in the MOH. The Director will be supported by a small staff provided by the project. He will report to the Under-Secretary of the MOH and will be responsible for coordinating all aspects of this project within the MOH and in the participating Northern regions. He will supervise the preparation of a detailed project work plan in consultation with USAID and contractor staff, and will liaison with the Project Manager, USAID.

In the South

Programmatic: In the South, the Director of Primary Health Care in the MOH will be responsible for all program activities and coordination of MOH inputs to this project. Appropriate agreemetns for project-related research may be developed between the RMOH and the University of Juba.

Both the GOS Project Director in the North and the Director of PHC in the South will liaison with the Project Manager, USAID/S.

3) At the Provincial Level

The Assistant Commissioners for Health in each of the provinces (4 Northern, 3 Southern) will be involved in the implementation of the project in their area. It has been pointed out that the health needs and resources of the various Sudanese provinces are different. The rate of health services expansion has also varied from province to province. For these reasons, this project has been designed to have both flexibility in the allocation of resources and strong administrative monitoring.

Provincial health officials will participate in a project implementation survey to determine the timing and location of certain project inputs. They will also be involved in the development of detailed work plans and schedules of performance for the various project components in their areas. Coordination with other provinces will be through the CMOH and in Khartoum and the Regional MOH in Juba.

4) At the Regional Level

As noted elsewhere, details for Regional governments are in the process of being worked out and these govenments (with the exception of the Southern Region) will not be functioning until May 1981. It is, however, already apparent that investment in terms of management training, etc. at the provincial level will be definitely support the future regional government, which will assume an intermediate status between the province and the national government.

b. Project Support by Various GOS Entities

Certain implementation aspects of the project will involve non-MOH agencies and organizations. These include:

1) The Ministry of Public Works & Construction (PWC)

The construction of health facilities in the North will be done by the PWC under an agreement with the CMOH. A REDSO/EA engineer has determined that PWC has the capability to undertake this work.

2) Mechanical Transport Division (MTD)

In the North and South vehicle maintenance will be through the Mechanical Transport Division in each province and through the vehicle repair facilities of the respective MOHs. These agencies have the manpower and shop facilities to carry out the necessary repair work on the vehicles to be supplied by this project. As capability in vehicle maintenance is developed under the project by the RMOH in the South, it will be transferred from the MTD.

3) Universities and the Economic & Social Research Council

The two universities of Khartoum and Juba along with the ESRC may be called upon to design and undertake operational research projects related to the PHCP on an ad hoc basic under agreements with the MOH.

2. The USAID

a. The U.S. Contractor

1) Contractor Selection - North

A Contractor will be selected on the basis of competitive proposal evaluation in accordance with standard AID procedures to implement the Northern component of the project. The following services will be provided:

- long term and short term technical adivisors;
- monitoring of long and short term participant training in-country and in third countries;
- purchase of commodities, equipment and vehicles;
- arrangements for project evaluations;
- monitoring of all construction elements of the project.

A comprehensive request for proposals (RFP) will be issued as soon after project authorization as possible.

Selection criteria to be used in identifying an appropriate contractor will include:

- overseas experience in developing countries in the design and management of nation-wide health care programs;
- ability to field an experienced staff of long term technical advisors with Arabic language capability and a sensitivity to, and understanding of, the administrative and environmental problems related to working in Sudan;
- ability to identify and support experienced specialists for short term advisory assignments in such fields as MCH, health planning and management;
- previous experience in providing strong U.S. based administrative and technical support to both long and short term technical advisors;
- familiarity with, or previous working experience in Sudan, Middle East and Africa;
- experience in supervising training of participants in third countries;
- familiarity and experience with AID and local procurement regulations.

2) Contractor Selection - South

Implementation of the project in the South will be by the International Medical and Research Foundation of New York through its Kenyan organization, African Medical and Research

Foundation of Nairobi. This charitable organization is being proposed for a non-competitive waiver for procurement of services (see Annex P).

3) Subcontracts

Construction in the South will be handled by local construction firms in Juba. It has been determined by a REDSO/EA engineer that such contractors are available. Subcontracting arrangements will be made by AMREF.

b. USAID Monitoring

Programmatic: USAID monitoring and supervision will be the responsibility of the soon to arrive Public Health Officer in the General Development Office. Until his/her arrival, it will be monitored by the General Development Officer. The USAID manager will coordinate with the GOS Project Director in the North and the Director of Primary Health Care in the South. He/she will arrange for all necessary AID inputs including the services of REDSO/Nairobi engineers concerning the construction associated with the project.

The USAID Controller's Office will review disbursement/reimbursement requests for conformity with AID regulations and ensure that adequate financial control methods are followed. It will also establish, according to AID regulations, procedures governing the disbursement and monitoring of Title III Program funds to be utilized under the project.

The USAID office in Juba will assist in monitoring the Southern component of the project.

Monitoring will primarily be accomplished through review of contractor quarterly reports and periodic meetings with the Chiefs of Party of the contractors.

Further, an in-depth evaluation also will be performed in the project. (See Part VI).

C. Phasing Activities

The activity schedules in Annex K show the plan of project activities, the projected time of task accomplishment and the agent of prime responsibility. In addition to these activity schedules it is important to examine in greater detail two aspects of project implementation: (A) activities prior to arrival of contractor personnel, and (B) phased development of technical implementation of the project when contractor personnel are in place.

(A) Early Implementation Actions: USAID/GOS/AMRF will collaborate on the following tasks and will call upon technical expertise from REDSO/EA as appropriate:

(1) development of specifications for trucks, vehicles, prefab elements of warehouses, and warehouse equipment,

(2) establishment of specifications of basic list of drugs and MCH/FP commodities,

(3) ordering of household furniture (south) and office equipment.

PIO/C's will be issued as appropriate to assure that commodities are procured and can be delivered on a timely basis for project implementation.

(B) Contractor activities will follow a phased implementation strategy adapted to each province which will include the following phases:

Phase I: Before initiating any support effort in the selected provinces, it will be necessary to perform a site specific assessment. Each province will be visited by a three member TDY team composed of a logistics/supply specialist, a manpower training specialist, and a public health specialist. Such assessments will be made initially for the three provinces in the South and the first two in the North, with the last two in the North being done in year 3. The team will counterpart MOH officials as well as provincial health officials. Together they will perform the following tasks:

- identify provincial policy regarding rural health care and PHCP;
- assess provincial infrastructure in terms of personnel availability, facilities development, data collection capability, logistics/supply system status, and vehicle maintenance capability;
- identify budget inputs and constraints to rural health care delivery as well as planning and accounting capability;
- evaluate past performance in implementing the PHCP, and othe NHP initiatives;
- identify problems in related sectors (e.g. communication, transportation);
- identify socio-economic, geographic, climatic and cultural constraints to program implementation;
- identify how existing GOS health resources might be better utilized through improved planning and management.

A summary report will then be prepared by the GOS/TDY team in which the constraints to the implementation of rural health

services delivery in the province will be analyzed. The team will determine the specific mix of advisory, training and commodity assistance required to strengthen the provincial-level health sector and the PHC Program. This assessment will identify requirements in the area of:

- short term technical assistance and the specific disciplines in which the T/A will be needed;
- the types and extent of training needs;
- distribution points for project commodities;
- site selection for construction of health facilities;
- the logistics/supply needs;
- the requirements for strengthening the data collection system including training or reorientation of health workers;
- phasing of project inputs.

The level of effort for these provincial surveys is 2 pm per province.

Phase II: Develop Detailed Work Plans for Provincial Programs. Using the implementation survey described above, detailed work plans for the allocation of project resources will be prepared. These plans will seek to address the different needs of the various provinces. Specific plans of action will be tailor-made to address the particular constraints to the expansion of rural health services in each participating province. This activity will involve the technical staffs of the Northern and Southern Primary Health Care and the Rural Health Support Project. These plans will be reviewed and approved jointly by GOS and USAID officials.

Phase III: Implement Plans. This phase will span the first 27 months of the project and will involve the implementation of plans developed above.

Phase IV: Modify Work Plans. As a result of the evaluation in months 26 and 27, the project and individual provincial and contractor work plans may be revised and project activities in the second Northern Region should commence. Any redirection of the project will be done only with the complete approval and concurrence of both USAID/S and the GOS.

Phase V: Project Phase Out. The project will phase out during the last 3 months of activities (months 60-63) and final evaluation will be conducted. (See evaluation section).

D. Commodity Procurement

Using the commodity components shown in Table II of Section III herein, commodities will be procured by the following agents consistent with project activity schedules provided in Annex K. All commodities for the southern region will be procured by AMREF using the procurement system presently being utilized for the Southern Primary Health Care Project (650-0019). Such procurement includes tools for CHWS, boat, radio equipment and that portion of dispensary equipment, office equipment and furniture Ministry of Health equipment and training center equipment as would be utilized in the south. AMREF would also procure its own vehicles (See waiver request, Annex P) and would procure all drugs (approx. $1 million) intended to be shipped into the south via Mombasa. In order to assure the timely arrival of the vehicles for the north, USAID would issue the PIO/C; for vehicle procurement utilizing the services of procurement agents (most likely the Afro-American Purchasing Corp. in New York - AAPC). To assure standardization of warehouse equipment, USAID would work with the existing logistic advisors in the Northern and Southern Primary Health Care Projects to develop the specifications for procurement under the PIO/C's (again utilizing AAPC or similar procurement agent) for all equipment necessary for the warehouses. The northern contractor, yet to be selected, would be responsible for arranging procurement of such office, dispensary, Ministry of Health and training center equipment intended for the north, but would be closely related to similar procurement action by AMREF for the south. Drug procurement for the north will also be done by the contractor. To the maximum extent possible, the project will utilize the procurement patterns set in motion under the existing Northern and Southern Primary Health Care Projects.

PART VI

SPECIAL STUDIES AND EVALUATION

A. Special Studies

A number of special studies and a series of focussed evaluations will be necessary for the success of the project. The special studies have been chosen to provide specific information required for the final design of project components. Several of the studies will collect information for the design of training curricula for health workers who have not previously been trained on a large scale. Thus the studies on traditional birth attendants - their current roles, abilities and receptiveness to training in MCH/FP - will form the basis for the job descriptions and training programs of these women.

The expertise of local Sudanese researchers in the Economic and Social Research Council (ESRC), the University of Khartoum Department of Community Medicine in the Faculty of Medicine, the University of Juba, etc., will be utilized in conducting the studies.

The special studies conducted under the project will include:

1. Baseline Studies: Will be conducted in each of the seven provinces in which AID will support health activities. These studies, similar to those carried out by AMREF in the Southern Primary Health Care Project, will provide current, village-level information on prevalent health problems, preventive and curative health knowledge and behavior, nutritional status, and patterns of water use and hygiene. The baseline information will serve as a comparison for data collected later in project evaluations.

2. Site Specific Assessments: Will be carried out in each province to ascertain specific requirements in the technical assistance, training and commodities. The survey will anaylyze past performance, problems, needs and constraints, and will identify a strategy for better use of GOS resources. The site specific assessments will be carried out jointly by the Assistant Provincial Health Commissioner and his/her staff and the project's contract personnel.

3. Pre-Implementation Surveys: Will be carried out before beginning the project in any province. Conducted by provincial health officials, they will determine the exact timing and location of each of the inputs. Level of effort for items 2 and 3 - 2 pm per province.

4. Analysis of New MCH/FP Training: As described above, the UNFPA will work with the Sudanese MOH to train PHCP workers in MCH/FP. Before AID-supported MCH/FP activities begin, an analysis will be done of the appropriateness and effectiveness of the training

program and the performance of newly trained workers in MCH/FP. This study will be used to design the content of AID-supported orientation and refresher training in MCH/FP. The study will be carried out by the AID-funded MCH advisor in collaboration with UNFPA and MOH representatives.

5. Nomad Community Health Workers: Some training of NCHWs has already been done, but anthropological studies done recently indicate that specially designed training courses will be needed for NCHWs to deliver effective services given the special characteristics of Sudanese nomads. This study will be conducted by a social or cultural anthropologist in one of the provinces included in the project. The level of effort will be approximately 3 person months.

6. Traditional Birth Attendants (TBAs): Additional information on TBAs will be required before they can be trained. Two similar studies will be conducted in two provinces (one in the North and one in the South) to gather information on TBAs. The studies will analyze the current role of TBAs in MCH/FP, their understanding and practice of acceptable levels of medical care, and specific recommendations for the format and content of their training courses. These studies may be carried out by GOS health professionals or by social scientists.

7. Pilot MCH/FP Training Program: Traditional Birth Attendants:

Prior to initiating training of TBAs on a national scale, AID will support several training courses for TBAs which will be closely monitored and evaluated. The effectiveness of the newly-trained TBAs in MCH/FP will be measured by the MCH advisor and modifications made accordingly in the TBA training program. Only then will the program be expanded.

B. Evaluation

Three types of evaluation and review of the project are proposed. They include:

1. Periodic Contractor Evaluation Reports

The northern and southern contractors will submit quarterly reports to USAID/S. These reports will evaluate grantee and contractor performance and identify operational problem areas. The format of the reports will be delineated by USAID/S in consultation with the contractors. They will describe:

- the contractor's and AMREF's activities for the period,
- problems encountered,
- achievements,
- recommended modification to the project work plans,
- proposed activities for the next quarter.

2. Third Year Evaluation

The purpose of this evaluation will be to provide a project analysis to the GOS, USAID/S and AID/W. This evaluation will take in the third project year. The format will be delineated by USAID/S.

The following areas will be analyzed:

- the goals and purpose of the project,
- the relevance of the project to the GOS National Health Programme,
- curative, promotive and preventive service statistics,
- MOH infrastructure development,
- performance of selected health systems (e.g. logistics/supply),
- impact on health status and the health sector (e.g. changes in infant mortality),
- efficiency, effectiveness and impact of project inputs,
- conceptual and operational problems.

When possible, use will be made of studies conducted by the MOH before the onset of the PHCP. Follow up studies including baseline studies, will be supported during the first three years of the project so that comparisons can be made of project impact.

This evaluation will be performed jointly by USAID/S, AID/W and GOS personnel, with input from internationally recognized experts in primary health care delivery.

The project evaluation team will consist of three or more members including:

- a health logistics/supply specialist,
- a MCH training specialist,
- a rural health care delivery systems specialist (team leader).

The team will conduct the evaluation studies over a six week period. The cost of this activity is budgeted at $45,000.

As a result of this evaluation, changes in the project work plans, activities, time frame and resource allocations may be made. These will be agreed upon by USAID/S and the GOS.

3. Ad Hoc Evaluation and Surveys

From time to time through the course of this project, special studies, surveys and evaluations may be performed on specific parts of the program. The purpose will be to delineate problem areas, to clarify preliminary observations, or to analyze previously unrecognized health needs or resource requirements. Baseline and

follow up studies will also be performed.

These analyses will be performed by USAID/S, AID/W, GOS, Sudanese institutions and/or independent groups. The concurrence of both USAID/S and the GOS will be required before any such studies or surveys will be performed.

4. Final Evaluation

At the end of the project period, a thorough analysis will be performed. It will take into account the original goals and purpose of the project, and any modifications made during the project implementation period.

The evaluation will focus on several broad aspects of the project including the impact of the project on:

- the increase in accessibility of the rural poor to improved health care;
- changes in the health status of the rural poor;
- progress towards achieving original and modified PHCP goals and purposes;
- improvements in MOH infrastructure development and its capabilities.

It will include:

- assessment of the quality and quantity of health services delivered to people through the resources and/or assistance of the project;
- assessment of the functional relationship of the activities of this project to the activities of other Sudanese health activities, especially those supported by AID;
- assessment of the pharmaceutical supply system, including evaluation of drug acquisition, selection, storage and condition of drugs at point of use.

The evaluation will seek to assess the contribution made by project resources. It will identify successes and failures, and will describe what the implications are for similar AID interventions in other countries.

The evaluation team will be composed of experts with the same types of skills identified in the prior evaluation. The evaluation will be conducted over a six week period. $45,000 has been budgeted for this activity. Arrangements for the evaluations will be made by the Northern contractor. The Southern contractor (AMREF) is allocated $10,000 to conduct evaluations of the radio health program in the South.

Many developing nations are establishing primary health care programs at this time. Each is, more or less, tailoring its health delivery system to meet its own perceived needs. It is hoped that Sudan's National Health Program, because of its size and the diversity of the problems it will encounter, may serve as a useful model to other countries. While the Program will not be replicated in its entirety anywhere, the approach used and the results achieved will undoubtedly be studies throughout the world.

ANNEXES TO RURAL HEALTH SUPPORT PP

NO. 650-0030

TABLE OF ANNEXES

ANNEX A: ASSESSMENT OF THE SUDANESE PRIMARY HEALTH CARE SYSTEM

A. Background

Demographic Status

The population of the Democratic Republic of Sudan is currently estimated to be approximately 17.3 million. Except for 12% of the people who live in urban areas, the rest live in rural (77%) and pastoral (11%) areas scattered throughout the 2.5 million square kilometers of Africa's largest country.

The largest majority of Sudanese are poor, earning about $165.00 per capita annually. The population's vital statistics, according to the most recent estimates, are:

- Average birth rate - 47,8/1000
- Average death rate - 17.5/1000
- Infant mortality rate - 132.0/1000 live births
- Life expectance at birth - 48.6 years
- Population growth rate - 2.1%

Thus, Sudan like many developing countries is characterized by a high birth rate, a high death rate, a high population growth rate, a high percentage of children below the age of 5, and a relatively low population density. These are important factors which the GOS has taken into consideration in designing and implementing its Primary Health Care Program.

1. Health Status

According to the Government of Sudan, the health problems of the country are, in priority order:

- Malaria - "nationwide"
- Malaria - "man made"
- Wider coverage by primary care
- Bilharzia - "man made"
- Lack of health information and lack of hygienic habits
- Communicable diseases, especially those preventable by immunization
- Need for safe water and adequate water supplies
- Environmental sanitation including refuse and human excreta disposal
- Protein-calories malnutrition
- Gastroenteritis
- Tuberculosis

As might be expected in a country as large and geographically diverse as Sudan, the incidence and distribution of these health problems varies in different parts of the nation. For these reasons, the GOS has developed and is implementing a regionalized health delivery system to deal with the public health needs of its urban, rural and nomadic people.

B. Effecitveness of Present Primary Health System

It is too early in the implementation phase of an untested comprehensive health delivery system like the PHCP to document measureable impact on the health status of the target rural populations. Small baseline surveys on existing health conditions have been conducted in several provinces. These studies, in addition to the baseline studies to be conducted under the project, will be followed up with assessments in two or three years which should begin to reflect improvements in health status attributable to the PHCP.

Provincial health administrators, North and South, have met in their respective regions to review their first two years of experience with the program and to recommend changes to improve effectiveness of the service. They were in general agreement that basic concepts of the PHCP are essentially sound, but that far more flexibility in implementation is needed to meet diverse conditions in the provinces.

Reports from those who have observed PHCP activities provide some indication of program effectiveness based on:

- geographic coverage of the PHCP,
- kinds and quality of services delivered,
- community awareness and utilization of services available,
- community organization for health, and
- logistics and supply carability.

1. Geographic Coverage of the PHCP

Reports indicate that distribution of primary health care units are uneven in most provinces. Villages closer to urban centers have been able to get their workers trained and facilities prepared much sooner than more remote and less accessible places. In some settled and nomadic areas, candidates meeting national educational requirements (6 years of junior school) cannot be found. Thus, coverage by CHWs or NCHWs has fallen short of targets. This is particularly true for women.

For a more detailed discussion of Sudan's population and health issues, please refer to the "Report of the Health Sector Assessment Team*" and the "Primary Health Care Programme for Sudan".

*Medical Services Consultants, Inc. Report of the Health Sector Assessment Team - Sudan, Arlington, Va., September 1977 (under AID contract).

2. Kind and Quality of Service Being Delivered

Basically the primary health care complex involves the dispensary and its five primary health care satellite units.

Services at the dispensary level are mostly curative medicine and referral by the medical assistant who also has supervisory responsibility for the CHW and the activities of village midwives. Because the medical assistant has a definite curative approach through training and practice and so many of the activities that he should supervise are preventive and promotive, many MAs focus on the curative activities in the PHCU, indirectly relegating the preventive and promotive tasks to a lesser status. Thus, services at both levels (dispensary and PHCU) are basically the same, curative in nature. Most MAs are unprepared to supervise the work of the village midwife in delivery care and there is a tendency for maternal-child health to be neglected unless it is curative.

To date, services of the CHW also have been predominantly curative in nature. This may be due in part, to what the villagers have been used to and expect from their new health worker. But it is also due to the curative orientation and experience of the CHW tutor -- medical assistants drawn almost exclusively from curative facilities. The short three month training of tutors does not prepare them adequately to teach CHW's how to do preventive health care.

In villages where there is a trained village midwife (VMW), it is expected that the CHW and VMW will cooperate in meeting village health needs. At present, the role of the VMW is one related only to maternal and infant care for a short period of time after delivery. Cooperation between the two workers is rare. It is felt that the PHCU should be made available for regular MCH clinics. In some villages this is done and the CHW and VMW make referrals to each other, but it cannot be assumed that this practice exists everywhere.

Quality of service is uneven, depending on the acquired skills and ability of the individual CHW and the nearness to available sources of supply and supervision. Treatment duties of the CHW may be inadequate for lack of adequate drugs and supplies. Villagers have been known to buy their own drugs in the larger towns under the direction of the CHW when he has run out of the more commonly used drugs.

3. Community Awareness of the Program and Utilization of Service Available

If standard procedures in the selection of CHW candidates are followed, community awareness of the program is assured. The medical assistant in the district, who does the recruiting, is expected to meet with village leaders and organizations to explain the health goals and services. This procedure is sometimes short circuited with selection

handled by the village chief alone.

When this occurs, a lack of understanding of the CHW's role results, constituting a weakness in program implementation. The national health plan places considerable emphasis on the need to prepare the villagers for the PHCP, but in practice this step in the process often is neglected.

One of the best resources for improved health lies with the people themselves. Most villages have a number of development oriented groups, such as the village council, the villlage development committee, the local unit of the Sudan Socialist Union, women's groups and youth organizations. These are excellent vehicles for cooperation with the CHWs in carrying out his promotive and preventive functions.

4. Maternal Care in the Primary Health Care Program

Antenatal clinics, immunizations, indentification of protein-calories malnutrition cases and oral rehydration for gastro-enteritis are part of the function of the CHW. However, the CHW is predominantly a male worker and is not very effective in dealing with mothers and children except in curative functions. He is not trained to assist with deliveries, but is supposed to cooperate with the village midwife or trained birth attendant. Training of village midwives has not progressed concurrently with the training of CHWs. In villages with a CHW but no trained midwife, there may be no emphasis at all on maternal and child health, especially the promotive and preventive aspects.

The health visitor who is a nurse-midwife combines service responsibilities for MCH care with community-health responsibilities. In the south, due to the low level of candidate qualifications, the position of assistant health visitor is sometimes used. Her duties include supervision of nurse-midwives and trained village midwives. The numbers of health visitors are so inadequate and their distribution so skewed to the more populated areas that effective supervision is virtually impossible. Some village midwives are seen only once a year on a routine supervisory visit.

There has been no retraining of those midwives trained many years ago as the present midwifery training schools cannot meet the demand for initial training. Therefore, the village midwives who were trained earlier are limited in the scope of their work. Undoubtedly, they do some maternal education but the preventive-promotive tasks now being emphasized are probably minimal.

Recruiting candidates to be village midwives is not always easy. Although the training for midwives is a government program, completion of the program does not give the women a place in the civil service. The midwife receives no salary from the Central MOH. Her renumeration is about one-half that of the CHW and is received from the village council. She does receive payment either in money or in

kind from the families of women she delivers. However, in small villages this number may not give her income enough to be a recruitment incentive. (In urban areas, midwives often are highly paid because the majority of deliveries are still home deliveries.)

Another constraint is the fact that although the program for village midwives is said to be 12 month in duration, in fact, many of the students are kept longer to fulfill the requirement of participating in a specified number of deliveries. Reducing the number of deliveries is not recommended. Since about 80% of the village midwives are illiterate, supervised practice is essential. However, an effort should be made to reduce this extended time by seeking out deliveries in peripheral areas. This requires transportation which has been a constant problem. A new class of trainees does not start until all the original trainees have had their course completed so considerable time can be lost, thus reducing output of midwives. With transportation provided, students might fulfill their delivery requirements at a more rapid pace.

While the Ministry of Health expects to have trained enough CHWs by the end of 1983, there will be a shortfall of 3830 midwives, 956 less being trained annually than are needed.

A retraining period has been built into the PHCP program and the provision of supervisory visits is a part of the system. The trained village midwife who is also a front-line worker has had no program for retraining on a regular basis. Some midwives are brought back to the midwifery school after an "unfortunate incident" when an untoward result is obviously the result of ignorance or improper technique. Since the village is the de facto supervisor of the midwife, such incidents do get reported to the higher level of the system by the villagers.

It is perhaps understandable that the need for the initial training of village midwives is so crucial that refresher courses have been delayed. Nevertheless, the yearly supervisory visit from the province capital is insufficient to maintain the quality of care. There is a need to reach all midwives who have been trained in the past not only to review and update their present maternal-child care service delivery but also to teach them promotive aspects of health, especially family spacing which was not part of the curriculum at the time they were trained.

The CHWs trained earlier have not had this information either. CHWs trained under the specially prepared tutors from the pilot program at Wad Medani will have family spacing information but they are few in number.

Actual services in FP will be delivered through referral, most likely at the health center. By standard order of procedures these services can only be delivered at a higher level under supervision of a doctor.

C. Non-Financial Resources for Health

1. Personnel

Extension of health services to the rural population of the Sudan under the Primary Health Care Program initiated in 1977, is being carried out by the following health personnel:

Category	Placement
Community Health Worker (CHW)	Own Village(s)
Nomadic CHW (NCHW)	Own Tribe(s)
Village Midwife (VMW)	Own Village/Dispensary
Nurse Midwife (NMW)	Dispensary/Health Center Rural Hospital
Health Visitor (HV)	Health Center
Sanitary Overseer (SO)	Large Town
Medical Assistant (MS)	Health Center/Rural Hospital/ Dispensary

The Sudan, like other LDCs, is testing a new concept in rural health care, based on the premise that workers can be recruited from the villages, trained in simple health delivery skills, and returned to their own village or tribe. Key to the success of this scheme is the quality of supervisory and technical support and supply from the next service level, the dispensary, and in turn, from the health center. Annex B on Personnel Development and Training describes this process in more detail.

Addition of the new categories of community health worker and retraining, reorientation of the others to render preventive health service has added a bold new dimension in health care. Prior to 1977, health services reached only to stationary dispensaries and dressing stations. Because of maldistribution and inadequate staffing, these static facilities did not provide equitable care for the large majority of the rural people. Promotive and preventive efforts to reduce the causes of common ailments were grossly neglected.

The new PHC approach to serve the people where they live and prevent or treat early those conditions causing a large percentage of illness and death, is making steady progress. Even without much-needed

donor assistance, the Ministry of Health has already trained nearly one-half of the CHWs required for the PHCP. The training and deployment of NCHWs has been slower due to the difficulty in finding candidates meeting nationally set educational standards.

The Northern 12 provinces have made much greater progress than the six provinces of the Southern Region in building their health infrastructures and in training/deployment of primary health care workers. The Southern Region, depleted of socio-economic and human resources during 17 years of civil strife will require a much longer time and more intensive outside assistance to adequately serve the health needs of its people.

The following table summarizes PHCP personnel presently in service in the Northern Region and projects program requirements through 1984. In the South 118 CHWs have been trained and an additional 78 are in training now (see "Primary Health Care Program in the Southern Region" in this Annex page 21.

Shortfalls in numbers of CHWs generated identify areas for training health care objectives. (See Annex B, Personnel Development and Training pages 7-12.

Northern Regions

Category of Worker	Requirements by 1984	No. In Service 1979*	No. To Be Trained 1979/84	No. In Service 1984	Shortfall ** 1984
CHW	1980	711	1269	1980	--
NCHW	837	178	659	837	--
Village Midwife	12678	4678	4170	8000	3830
Nurse Midwife	916	400	375	516	141
Health Visitor	1204	457	200	657	547
Sanitary Overseer	920	258	270	528	392
Medical Assistant	2416	1016	1000	2016	400

*Does not include classes of trainees graduating in July, 1979.
**Projected on basis of present training rate.

However, rates of attrition may create a shortfall. In addition, the use of the better CHWs as CHW supervisors will decrease the numbers of CHWs delivering services at the community level. So the assumption that the requirement for CHWs and NCHWs will be met is optimistic.

With the additional training being given to village midwives, it is the hope of the PHCP that every village or cluster of villages will eventually have a VMW.

Operational strength of the Primary Health Care Program at the district health center level downward requires solid aministrative, technical and logistical support from the provincial level. Under the direction of an Assistant Commissioner for Health, a cadre of senior personnel selected from medical assistant and nursing categories provides the backstopping. In the Sudan, the government has decentralized program responsibility from central control to the provinces. The Ministry of Health supports this system by establishing national health policy standards and by providing technical leadership in the various health disciplines.

Thus, the personnel resources for health form a link from top to bottom of the health infrastructure. This suggests, however, that all links must be strong if the chain is to support the heavy demands for extension of services to the vast rural reaches of the Sudan.

The foregoing focuses on personnel resources in the preventive health sector. The hospital personnel infrastructure while not directly addressed in the PHCP, represents a major personnel resources for curative health services. Traditionally, hospitals have been located in urban and large rural centers, serving urban populations. Rural hospitals have relatively few beds. Many do not have a medical officer but are directed by medical assistants.

Personnel resources are seriously affected by both internal and external "brain drain". Urban trained doctors, nurses and medical assistants are reluctant to serve in remote rural areas, or they move up from rural to urban position soon after deployment. Many physicians and upper level nursing staff have taken high paying jobs abroad. Attrition of doctors by the "brain drain" is estimated at 40%.

For more detailed accounting of personnel resources, see the Health Sector Assessment Report - Sudan* and the Annex B on Personnel Development and Training.

*Medical Services Consultants, Inc. Report of the Health Sector Assessment Team - Sudan, September, 1977 (under AID contract).

a. Manpower Development and Training

Weaknesses identified in the area of manpower development and training are the result, in many respects, from inadequate planning and time to work through the essential steps fo recruitment, selection, training and deployment of PHC workers. Training programs were implemented without adequate preparation of tutors, especially in teaching methodology, and without appropriate training facilities and teaching materials. Lack of appropriate field practice during the training has been documented in several provinces.

Standards set by the MOH for recruitment and selection of CHWs and NCHWs have not been met in many areas, particularly in regard to the high educational requirements established for candidates. In rural areas especially among the Nomads, the literacy level is so low that candidates meeting MOH standards often cannot be found. Modification of the standards has been necessary by Provincial Assistant Commissioners, who have responsibility for administration of the PHCP and for training CHWs and NCHWs and other PHC workers.

It is now accepted that maturity, interest and commitment, and community acceptance are more important in selection of CHWs and NCHWs than educational achievement per se.

There are constraints to rapid coverage of the population because the training had to be built into the existing system from personnel delegated other duties. Medical assistants who were engaged primarily in curative activities were chosen as trainers for the CHW. A tutor-training program was initiated and the new tutors began the task of training the CHWs. Expansion of the program to accelerate the training of CHWs was dependent not only on location or construction of centers for training but also on the availability of tutors, with the proper orientation.

This problem is being addressed by a special tutor-training program in which medical assistants are taught selected MCH and preventive/promotive aspects. The output of this program is limited and it may take considerable time for all MA tutors to pass through this special course.

The UNFPA will expand the output of the Tutor Training Center at Barakat, Gezira Province, with additional training facilities and hostels for the tutor trainees and by supplying additional teaching aids and supplies.

The base from which the tutors are drawn needs to be expanded so that service capabilities will not be depleted. Since the medical assistants are drawn from the trained nurses category, it would seem

that unless all categories of workers involved in PHCP are increased above their present output there may continue to be a deficiency.

Medical assistants schools in five locations have a yearly output of 200 graduates. According to MOH training requirements, there is an annual deficit of 100 trainees. It is probably not feasible to increase enrollment in the present schools as this might dilute the available clinical field experience to unacceptable levels.

2. Health Facilities

Major program implementation is in progress in the building of PHCP infrastructure. Rapid transition within five years is scheduled for both service and training facilities to meet PHCP requirements.

a. Service Facilities

The hub of the PHC complex is a dispensary located in the largest village of an area of about 24,000 people. Around the hub will be five satellite Primary Health Care Units (PHCUs). In the North, an estimated 90% of the PHCUs are being constructed through self-help by villages, either on selection of their CHW candidate or in anticipation that they will soon receive one. While this concept is not as strong in the South, many PHCUs have been built through self-help.

The dispensary, as noted above, is staffed by a medical assistant (male), or male nurse, and a nurse midwife or village midwife. They supervise and supply PHCUs.

A district health center includes about four Dispensary-PHC complexes, serving a rural population of 100,000-150,000 people. This facility is staffed by a medical assistant, health visitor and in some areas, a medical doctor. This facility is located adjacent to a rural or district hospital to facilitate the two-way referral of patients. (In the Southern Region, due to the paucity of resources, the District Hospital serves as the Health Center as well).

In the transition of PHC facilities, dressing stations (DS) are being transformed into PHCUs. Dressers or nurses once stationed in DSs are being replaced by CHWs, and moved to dispensaries or rural hospitals. This has created a temporary problem as villagers close to the DSs see the removal of the curative-oriented dressers or nurses as a downgrading of the services.

In 1977 the Northern Regions had 201 health centers, 736 dispensaries and 1901 dressing stations. The PHCP is structured on 1984 requirements of 140 health centers, 396 dispensaries and 1980 PHCUs will be placed at fixed nomad stations or along the major grazing routes in season. In the Southern Region, requirements are for 141 dispensaries and 708 PHCUs. As of 1979 ,65 dispensaries and 81 PHCUs had been built.

Numbers of existing facilities do not reflect clear pictures of the extent to which facility resources are being met. Only a province by province survey can establish needs for renovation or new construction. It is reported that nearly every facility will require some degree of renovation. Better housing for personnel at dispensary and health center facilities has high priority if trained personnel are expected to work in the disadvantaged rural areas.

b. Training Facilities

Adequacy of training facilities, coupled with the MOH capability to staff them with tutors and provide an increasing number of students, is of paramount importance for PHCP implementation. The shortfalls noted above for primary health care personnel graphically portray the need to increase training capacity and overall capability.

The MOH has established thirty training programs in the Northern Regions for CHWs and NCHWs, and four in the Southern Region. Existing facilities, such as nursing schools, were used during vacation periods. Use of such facilities has not been satisfactory for many reasons, noted in the Annex B on Personnel Development and Training. However, the GOS socio-political commitment for early extension of health services to the rural poor necessitated a compromise decision to use available facilities, despite their inadequacies.

For the North, existing training schools, by category of workers trained for the PHCP, duration of training, annual output, educational requirements to enter and number of graduates to 1979 include:

Northern Regions

Category	No. of Schools	Duration of training-mo.	Annual Output	Educ. Requir.	No. Grad.* to 1979
CHW, NCHW	30***	9	376	J.S.[1]	834
Village Midwife	18	12	695	--	4678
Nurse Midwife	3	12	75	N.C.[2]	260
Health Visitor	2	12	40	N/M[3]	457
Medical Asst.	5**	24	200	N.C.[4]	1016
Sanitary Overseer	1	6	50	J.S.[5]	258
Public Health Off.	1	36	30	H.S.[5]	452

*Any variations of numbers compared with table in section on personnel reflects new graduating groups not yet in service.

**Seven other MA schools train technicians for placement in hospital speciality wards, pharmacies and laboratories.

[1]Junior Secondary (9 years)

[2]Nursing Certificate plus one year of experience

[3]Nurse/Midwifery Training plus one year of experience

[4]Nursing Certificate plus two years of experience

[5]Higher School (12 years)

***At the present time, 21 centers are operating. Decrease due to return of buildings, deterioration, etc.

This project will increase the training capacity by construction of several kinds of training centers. See Annex B, Personnel Development and Training.

3. Logistic and Supply Capability*

The ineffectiveness of the present commodity support system has been mentioned in previous reports by various agencies and individuals. Ministry officials have long been aware of the many problems but have been unable to take remedial action due to budget constraints.

Operational and administrative weaknesses in logistical support for the PHCP are complex. Problems faced in providing adequate logistical support for rural health services are characteristic of problems faced throughout the nation.

Current supply constraints are:

a. Drugs and Medical Supplies

There are inadequate supplies at all operational levels. There are prolonged and indefinite periods of resupply at all levels.

The lack of supplies and needed drugs diminishes the stature of the CHW in the village and makes his efforts at promotive/preventive tasks less credible. For a well-functioning program, the supply system must reach not only the province but the village level as well.

b. Warehouse Facilities

There is a country-wide lack of adequate warehouse facilities. On-site inspections reveal that supplies are improperly stored and subject to damage and loss.

c. Transportation of Commodities and Personnel

There is a lack of vehicles, spare parts, and petrol. Rains may isolate an area for a period of up to eight months. There is an insufficient number of all-weather roads.

Drugs and medical supplies have a lower priority than food, petrol and other goods in the use of the very limited rail transportation available. Often, medical supplies are kept for several months at Port Sudan waiting rail transfer to Central Medical Stores in Khartoum.

Air transprotation of supplies is used mainly for vaccines requiring refrigeration. On occasion, flights may be delayed, cancelled, or diverted without Central Medical Stores being informed. This has resulted in the loss of the vaccines potency.

*For an in-depth assessment see Annex E, Logistics and Supply.

Commercial transportation is unreliable and not cost-effective. The scarcity of petrol is another factor in limiting supply distribution.

d. Supply Personnel

Central Medical Stores is staffed with competent personnel who perform well despite program constraints. There is no in-service training of the commodity support staff at provincial and district levels.

e. Commodity Accountability

All project commodities are received and issued from the Central Medical Stores, Khartoum and then shipped to the provinces. The Assistant Commissioner for Health in each Province is responsible for requisitioning, receiving, distributing, and accounting for all commodities.

Since commodities are in short supply, Central Medical Stores shipments are made on an allotment basis with the realization that quantitites shipped are still short of provincial requirements.

Records at the Central Medical Stores indicate only quantities shipped. Recordkeeping at the provincial warehouse level is inadequate and incomplete. There is no audit trail of accountability for commodities from receipt in country to the end user.

The success or failure of the Primary Health Care Program may well rest on the Government's capability and priorities to assure that the MOH can establish and maintain a viable logistical supply system.

In summary operational weaknesses are the result of:

- Insufficient medical supplies in quantity and line item
- Lack of adequate storage facilities for commodities
- Insufficient vehicles and spare parts
- Insufficient allotment of petrol
- Lack of an adequate road system and a re-supply delivery schedule
- Low priority for use of limited railway facilities
- Lack of a functional "cold chain" distribution system for immunization program. Unreliable air transport scheduling for perishable items
- Insufficient budget allocation.

Administrative weaknesses result from:

- Lack of trained personnel
- Lack of management and warehouse standard operating procedure

- Inadequate recording and reporting procedures. There is no commodity accountability for non-expendable items
- Lack of basic data collection. Inventory lists are non-existent and usage rates have not been established
- Limited control over vehicle usage. Transportation costs have not been itemized.

4. Communications

Sudan's geography demands special attention to communications. As the largest country in Africa, with an area of over one million square miles, Sudan must give priority attention to communication and transportation for the development of any sector including health. It would be hard to imagine delivering services in any area as large as the U.S. east of the Mississippi without adequate roads, air services, and telephone. However, in the Sudan these facilities are not well developed, and the low population density and harsh climate (northern desert and southern jungle) have made the development of road networks and terrestrial communications slow and costly.

Lines of communications between supply depots and health facilities at all levels are inadequate and needs for improved communication have been identified at different levels in the health care system between:

- The provincial centers and Khartoum for more efficient transmission of statistics and for administrative co-ordination

- The provincial hospitals, the regional hospitals/health centers and the paramedical workers in the field; and

- The medical assistants at the dispensaries and the CHWs at the village or PHCU, or with the nomadic tribes.

The requirements cited for communicating with Primary Health Care Workers are the need for supervision for these workers after they are trained, consultation with more senior staff on different cases particularly during periods of isolation in the rainy season, notification of emergencies or epidemics, and logistics coordination to notify workers when drugs arrive.

An innovative approach to using radio forums as a means of health education will be tested in the Southern Region. It is described in Annex F.

D. Budget and Finance

Three basic elements adversely affect the capacity of the Ministry of Health to execute the expenditure of appropriated funds. The first concerns the fact that often funds which have been approved for the health sector are simply not forthcoming from the Central Government. The severe liquidity crisis which the GOS faces constricts the flow of local currency as well as foreign exchange. Second, the Ministry of Public Works is frequently unable to complete construction projects because of a lack of sufficient building materials. Third, if appropriated money includes a foreign exchange component, it is very difficult to obtain the necessary endorsement from the Bank of Sudan for reimbursement.

At the provincial level, Assistant Commissioners for Health dedicate themselves to utilizing whatever money is granted from the Center. Upon submission, provincial health budgets become intentionally inflated in anticipation of severe budget cuts, in the hope that the final appropriation will more effectively address the actual needs of the province.

Administrative weaknesses render an accurate assessment of local government expenditures in the various provinces most difficult. Provincial health accounts are in arrears and have not ever been closed for most provinces in Sudan. In some cases, no account records of expenditures on health services have ever been kept. Others have been in arrears for periods ranging from a few months to four years. Inadequate bookkeeping procedures and the consequent lack of basic financial data at the local level make it difficult to cost actual health needs.

E. Policy Implementation

The Primary Health Care Program was designed with input from many different Sudanese groups and individuals, as well as international advisors. The actual implementation of the PHCP involves the coordination of many organizations and individuals both public and private throughout the whole country.

The Central Ministry of Health in Khartoum has certain administrative (staff) functions which it performs, including:

- national health planning
- national manpower training
- national medical stores
- central laboratories
- health and vital statistics
- relationships with international donors
- capital construction
- health program development.

All other administrative and service delivery functions are decentralized and assigned to the provinces. In the case of the Southern Regional Ministry of Health, all health functions are delegated to it, except those noted above, RMOH in turn redelegates the implementation of programs such as PHCP.

The mechanisms for implementing health policy are varied. At the national level, the Planning Directorate in the Central MOH prepares health development proposals. These are reviewed and approved within the MOH. They are forwarded to the Ministry of National Planning for study, approval and budgeting. The development plans are then submitted to the People National Assembly where they are further reviewed and approved before being sent on to the President for signature.

Development proposals, however, may also be initiated by District Councils and submitted to Provincial Councils for approval. If these proposals involve only one province, they may be forwarded directly to the Ministry of National Planning. If they are of a national nature, they must be submitted to the Central MOH which then forwards them to the Ministry of National Planning. Recurrent budget allocations are made directly by the Ministry of Finance to the Provinces. ~~The Central MOH has no review, comment or approval authority for these~~ budgets.

~~Thus, for policy planning purposes, the Central MOH has~~ authority over national development plans but essentially no responsibility for on going recurrent expenditures at the provincial level. This may serve as a constraint to policy implementation for those aspects of the program which require standardization and uniform application.

The opposite situation occurs for some aspects of the program which would benefit from flexibility. A case in point involves the selection, qualification criteria and training standardized by the Central MOH and may not be appropriate for all provinces. For example, in the area of program performance evaluation, there is at present no established policy or mechanism for assessing the operational and managerial effectiveness of the program. This factor is of particular relevance to bilateral and multilateral donors who might be interested in providing assistance to the PHCP.

In the area of family planning, the GOS does not have a specific written policy. Nevertheless, child spacing activities are permitted, government personnel and facilities are utilized and small GOS contributions have been made to family planning program activities including commodities.

It should be noted the GOS does have a policy of non-discrimination in the hiring of women for positions in the health program. Certain cultural and educational constraints, however, serve to limit the number

of women in the PHCP at this time.

F. Operational and Administrative Constraints

In the two years since the Primary Health Care Program was initiated in July, 1977, the Ministry of Health for the Northern Region, based in Khartoum, and the Regional Ministry of Health for the South, based in Juba, have had time to observe and assess various operational and administrative problems.

Major weaknesses are observed in program planning; manpower development and training, management and supervision of PHC activities at all levels; budget and finance; logistical support services, health education and community participation; collection, analysis and use of health information and statistical data; and program review and evaluation.

1. Administrative Management and Supervision

It is a fundamental principal in program development that an administrative infrastructure be in place before the deployment of primary health care personnel. The infrastructure in the Sudan program when CHWs were first trained and deployed was hospital clinic based and curative service oriented. Traditionally, patients came to the hospitals and dispensaries for treatment. Thus, the concept of extending service outward to the people and redirecting the emphasis from curative to preventive care was alien to the basic orientation of personnel whose participation is key to the success of the PHCP. For example, medical assistants located in district hospitals and dispensaries already overloaded with their own curative work, have been charged with the responsibility for supervision of the CHWs and NCHWs. Even with retraining, this appears to be a difficult task unless they are relieved of duties in the fixed facilities and given transport for mobility to do field supervision. There is a critical need to introduce into the organization scheme for PHCP and additional layer of supervision at the dispensary level, between the medical assistants and the village health workers. This issue is being addressed by MOH/Provincial health planners.

Weaknesses in administrative linkage up through the health organization have also created problems. Decentralized levels of government coupled with a national GOS policy, has created certain grey areas. Respective roles of the MOH vis-a-vis provincial health departments require further clarification. Traditionally, health planning has been on a vertical program basis. This has been effective in managing such programs as smallpox eradication, but does not fit the new mold of horizontal program planning at the provincial level. Integration of vertical program services into the PHCP constitutes a major program objective.

The Ministry of Health is undergoing a series of organizational changes designed to enhance program planning, strengthen span of control and channel limited resources into priority program areas. Primary Health Care, Training, and Statistics and Research Divisions expect to be upgraded in the organizational hierarchy and thus strengthen administratively. Even with decentralization of operational program responsibility to the provinces, the Ministry of Health has an important leadership role. The MOH is responsible for curriculum development for training and the setting of personnel standards. It has a major responsibility for technical guidance and logistical support for provincial programs.

Lack of middle level management creates a major gap in the administrative line of command. It adversely affects day-to-day decision making on operational matters, both in the central MOH and in the provinces. Responsibility for programmatic decisions and accountability for actions taken rest almost entirely with medical officers. Provincial Assistant Commissioners for Health report that they spend up to 90% of their time on administration. Despite this obvious misuse of talent, too little recognition is given to the need to train second-level management personnel to assume administrative functions which could easily be delegated.

2. Health Information and Data Collection

Reliable health statistics are essential for good program planning. For a variety of reasons, collection of health information on the nature and prevalence of disease and on characteristics of the population has been limited largerly to urban areas. In the vast and sparsely populated rural areas of the Sudan, adequate data collection has not been possible. This is due partially to distance and lack of communications, but also due to lack of health infrastructure. With the deployment of CHWs and NCHWs and with better administrative linkage from bottom to top levels of the program, the health information/data collection component should show considerable improvement.

3. Program Review and Evaluation

Obviously, all operational and administrative weaknesses noted above have direct bearing on the capability of health planners to carry out an acceptable level of program review and evaluation. Any gaps in the planning and implementation process are likely to be reflected belatedly in program evaluation.

A major obstacle in program evaluation results from inadequate documentation along the way. Weaknesses in collection of health information and statistical data are especially critical.

At the present stage of program implementation, baseline data needed for evaluation have been collected but have not been analyzed yet.

In summary, operational and administrative weaknesses in Sudan's health infrastructure are being identified and addressed in the forward projection of the PHC program. Many of the obstacles might have been avoided or minimized with more careful planning and more time to work through the implementation process, as in manpower development and training. Other obstacles have not lent themselves to easy management, such as lack of financial and material resources.

Basically, the elements for building institutional capability are in place. Given the appropriate financial, technical and material support, the PHCP should move ahead, if not on schedule, at least in a predetermined direction that promises to achieve the objectives of extending health services in to the vast rural reaches of the country.

G. Primary Health Care Program in the Southern Sudan

The implementation of the PHCP in the South presents special problems. Because of this, the following additional information is provided.

The PHCP in the Southern Region follows the guiding principles of the country program. It was conceived and implemented without any pilot testing as in the Northern Region because of the recognition of the urgent need for health services throughout the region.

1. Administration/Management

The primary Health Care Program is a separate department in the Regional Ministry of Health.

The African Medical and Research Foundation (AMREF) has detailed eight personnel to work directly with the Ministry of Health to assist in carrying out the program. The technical coordinator of this program is actively involved in the personnel development phases of the program.

The execution and technical supervision of the PHCP at the provincial level is the responsibility of the Assistant Commissioner for Health. Administrative and political supervision at the village level is said to be the responsibility of the Village Councils and the Sudanese Socialist Union. Money and resources are allocated directly to the PHCP have technical supervision responsibilities in partnership with national RMOH staff. Some administrative tasks are carried out but no direct disciplinary authority has been granted.

2. Health Personnel Development - PHCP

AMREF has been directly involved in personnel training. A three month training program for CHW tutors was developed to include

preventive medicine as well as some teaching methodology. CHW tutors were drawn from a pool of general medical assistants and certified nurses who have had additional training to become medical assistants.

CHW Tutor Training, Southern Region, May 1979

Location	Numbers Trained	Actively Working As*			
		Tutors	Prov. MA	PHCP	HQ
Rejaf	23	12	6	3	

CHW Training

Location	Number Trained	Numbers Under Training
Rejaf	53 (2 courses)	--
Doleib	15	17
Gogrial	24	35
Lirangu	26	26
TOTAL	118	78

* Tutors at Provincial MA and PHCP headquarters will be reassigned to CHW training schools when constructed, however the position of six provincial PHCP supervisors will be maintained which has been filled in the six provinces by PHCP tutors.

Summary Health Manpower - Southern Region
Classified Personnel, May 1979
By Province *

Category	EEP	WEP	BGP	LP	UNP	JP	Total
Doctors							54
PHO	8	2	2	2	3	1	18
Nursing Sisters	9	--	--	2	1	--	12
Medical Asst.	64	35	52	41	64	29	285
Lab. Asst.	23	5	15	6	18	3	70
Theatre Attendants	12	6	11	3	13	2	47
Dental Med. Asst.	6	4	6	1	4	1	22
Ophth. Med. Asst.	4	2	4	1	3	1	15
Anesthetic Asst.	2	1	3	3	2	1	12
Leprosy Med. Asst.	3	--	2	2	1	--	8
Pharm. Med. Asst.	2	--	1	1	1	1	6
Psych. Med. Asst.	2	--	--	--	--	--	2
Physio Med. Asst.	--	--	--	--	--	--	--
Tutors MA T.S.	2	--	2	--	--	--	4
Tutors PHCW T.S.	7	4	4	1	4	2	21
Tutors Lab & Thea.T.S.	2	--	--	--	--	--	2
Tutors San.O.T.S.	--	--	1	--	--	--	--
Nursing Instructor	6	2	6	2	4	1	21
Radiographers	7	--	3	1	1	--	12
Health Visitors	5	3	3	2	2	--	15
Sanitary Overseers	12	11	8	2	8	2	43
Refractionist	2	--	1	--	1	--	4

3. Curriculum

A curriculum was drawn up by AMREF based on the "National Health Programme for the Southern Region" and a manual for the CHW prepared based on a WHO publication for Rural Health Workers. This manual has been revised based on experiences in use.

4. Recruitment

Because the choice of a community health worker is so important to the functioning of the program, criteria were established to guide the communities in the selection process. It has been more difficult to meet these criteria in the South because of generally lower levels of literacy in the region and a more limited pool from which to select trainees. Another problem has been language - colloquial Arabic

*Provinces: Eastern Equatoria, Western Equatoria, Bahr El Ghazal, Lakes, Upper Nile, Jonglei.

is spoken, but mostly in urban areas. The CHW trainee is more likely to be from parts of the South where only tribal languages are spoken. Additionally, communities do not always choose according to the criteria. The problems associated with recruitment have been recognized and measures taken to insure better selection of trainees.

5. Facilities

Training facilities for CHWs were acquired from various sources and are in the process of being renovated or replaced. It is expected that a total of seven CHW schools will be sufficient for the region. Four schools are now functioning; two have been funded but construction has not started and one has been requested for a selected area and is being funded by this project.

Three midwifery schools are listed for the South but only one is actually functioning (at the Juba Hospital). The RMOH recognizes the need for more schools and eventually would like one in every province but the more immediate concern is to staff and recruit for the existing facilities.

The building program under the AID-funded AMREF PHCP program is shown on the following table.

Place	Type of Unit	Finished	Started	Not Started
Juba	3 Staff houses	1	2	
Lirya	CHW School			1
	Dispensary			1
Akot	CHW School			1
	Dispensary			1
Total	Staff houses	1	2	
	2 CHW schools			2
	Dispensaries			2

The best available data on the status of health training institutions in the Southern Region are summarized below

Health Training Insitututions, Southern Region by Province(1)

Facilities	EEP	WEP	BGP	LP	UNP	JP	Total
Med. Asst. Sch.	1	--	1	--	--	--	2
Lab. Asst. Sch.	1	--	--	--	--	--	1
Theatre Asst. Sch.	1	--	--	--	--	--	1
Nursing Asst. Sch.	3	2	2	2	3	1	13
CHW	1	1	2	1	1	--	6 (2 UC)
Midwifery	1	--	1(NF)	--	1(NF)	--	3 (S NF)
Sanitary Overseer	--	--	1	--	--	--	1 (NF)
Hospitals	6	7	5	5	9	5	36 (6 NF)
Health Centers	8	0	1	0	2	5	16 (8 NF)
Dispensaries	25	19	24	19	30	25	142
Dressing Stations	37	19	51	25	38	37	207
PHCU*	150	64	48	98	44	--	404 (85 F)

Hospitals

EEP	WEP	BPG	Lakes	UNP	JP
Juba	Yambio(UC)	Wau	Rumbek	Malakal	Bor
Torit	Maridi	Aweil	Tonj	Bentiu	Akobo
Kapoeta	S. Yubu	Raga	Yirol	Renk	Pibor
Yei	Nzara	Gogrial	Cuebit(UC)	Kodok	Pangak (UC)(P)
Kajokeji	Lui	(Wanjok)(UC)	(Warap)(UC)	Nasir	Kongor(UC)
Loa(UC)	LiRangu			Doro	
	Tambura			Leer	
				Melut(UC)	

*Planned Units
F - functioning
NF - non-functioning
UC - Under construction
P - postponed

Candidates for tutor training are drawn from Medical Assistant and Health Visitor categories and trained for three months at a Tutor Training Center near Wad Medani, Gezira Province. This center was established two years ago to train tutors for CHW and VMW schools. The first two classes served Gezira Province, but the third, starting in October, 1979, will accept candidates from provinces in both Northern and Southern Regions. This tutor training facility should double its intake capability to adequately address the PHCP needs.

(1) Provinces: Eastern Equatoria, Western Equatoria, Bahr El Ghazal, Lakes, Upper Nile and Jonglei.

Tutors for the CHW's have been trained in Rejaf as noted earlier. Starting in October 1979, some tutor trainees from the South will be trained at Wad Medani in the North where a pilot training program incorporating newer approaches to teaching MCH, nutrition and community activities has been developed.

An Institute for Health Personnel is under construction at Wau and when activated in 1981 will train nurse-midwives, medical assistants and sanitary overseers, all necessary for the PHC program.

6. Supervision/Evaluation

Supervision of the CHW training schools is difficult due to transportation problems.

No formal evaluation of the CHW course has been made, but an informal report by the WHO Public Health Advisor focused on several problems. These problems are similar to those noted in the North (e.g. CHWs spend most of their time in curative work). Although a reporting system has been set up and summaries of monthly activities of the CHWs are required, returns thus far have been too few to make any judgments. In some instances, the proper forms were not available to the CHW but more often, the problem is one of transportation.

The same constraint, transportation has also limited supervision of the CHW in the village by the medical assistant based at the dispensary. Consideration is being given to training some of the better CHWs to be supervisors. The medical assistant who has service responsibilities in the dispensary frequently says he has no time to travel out to the villages. The possibility of using CHWs as supervisors might provide an added incentive to those CHWs whose capability is greater.

7. Management of Supplies and Equipment

Many problems exist in the system for getting supplies into the PHC complexes. The constraints that hamper mobility and communication throughout the South are magnified when one considers the flow of goods beyond the province level down to the PHCU. Some communities are contributing, on a voluntary basis, to the cost of providing drugs.

8. Record and Reports

Standard reporting forms for use of the CHW and the MA are supposed to be available but a shortage of forms has minimized returns. Poor communications between areas also contributes to a dearth of statistics. A statistical report of activities concerning the PHCP program since onset is not available at this time.

9. Continuing Education

The 21 CHW tutors have not had any refresher courses but

recently took part in a week seminar on management given by the Maryk- 11 Fathers in Juba.

Three one-week reorientation courses for 25 medical assistants 4 nurses and 8 sanitary overseers have been held.. These courses have focused on:

- the concept of the PHCP,
- the roles of personnel involved, and
- the importance of preventive and promotive activities.

A similar course for 30 participants from Upper Nile Province was recentl conducted by the Lutheran World Federation and the Assistant Commissioner for Health.

10. Scope of Activities

Curative functions are predominant in the activities of the CHW even though they have received training in promotive and preventive activities. Referral to nigher levels is uncommon. Maternal or child care services are inadequate because males comprise all of the CHWs and MCH presents a cultural problem for them. Health education and promotion of safe water, sanitation and refuse disposal also are inadequate.

11. Baseline Surveys -Southern Region

An AMREF Medical Training Officer headed a team that carried out a socio-economic and medical baseline study of villagers in Mugiri, Equatoria in March, 1977. The data was sent to Khartoum for analysis.

Twelve baseline studies will be conducted by AMREF as part of the AID Southern Primary Health Care Project. The first survey has been done and results are being analyzed in Juba and Nairobi. A nutritional survey was done in Maban by the Sudanese Interior Mission (SIM) and a comprehensive study in Bentiu by the Sudanese Council of Church (SCC).

ANNEX B: PERSONNEL DEVELOPMENT AND TRAINING

Introduction

There is a consensus among health planners that program success depends in large measure, on the steadfast commitment of government to provide the necessary manpower and training so that health services can be delivered efficiently and effectively. This commitment was made by the GOS in the adoption of its National Health Plan in 1975. Health received high priority in the six-year "phased programme of action" for the socio-economic development of Sudan.

The National Health Plan was followed in 1976 by regional plans for primary health care programs. Two plans, one for the Northern Region and one for the Southern Region, presented in detail the manpower and training requirements. Pressed by the socio-political urgency to demonstrate immediate action and early results, the Ministry of Health moved into an accelerated training schedule. A large part of the training effort was devoted to the training of a new personnel category - the Community Health Worker.

1. Situation (Background)

a. CHW Training

Because of the urgency to initiate the training program, thirty centers were set up in whatever facilities were available. Rented or loaned facilities, vacant rooms in hospitals and nursing schools were all put to use to activate 20 programs in the settled rural areas and 10 for training of nomad CHWs. Seven CHW training centers were planned for the Southern region and four have been activated. As of April 1979, 21 of the 30 centers in the North were operating.

Two medical assistant tutors for each center were given a three month course in curriculum development and teaching methodology. By the end of 1978, the North had already trained some 757 CHWs and 189 NCHWs. The Southern Region was slow in starting and had placed 87 CHWs, with another 109 in training.

Based roughly on a rural population of one CHW to 4,000, the target for the North for settled areas was set at 1980 CHWs. At a ratio of one NCHW to 1500 nomads, the total target for NCHWs was 837. The number of CHWs to be trained in the Southern Region was set at 763.

The following table provides data for both North and South, by province, for the number of CHW schools, CHWs trained or in training and the number of PHCUs in service or about ready for service.

Table 1

Status of Primary Health Care Project

December 1978

Province	CHW Schools	CHWs Trained	CHWs * under training	Operating PHCUs		Total	PHCUs Expected to operate 1979
				Newly Built	Replacement		
NORTHERN REGIONS							
Khartoum	2	50	-	26	13	39	17
Blue Nile	2	75	-	37	14	57	24
White Nile	2	75	-	67	8	75	-
Gezira	4	5	100	3	22	25	100
Northern	1	50	-	6	50	56	-
Nile	1	25	25	17	8	25	25
Kassala	3	98	12	-	-	-	-
Red Sea	2	84	-	36	40	76	-
Northern Darfur	4	45	50	-	-	-	-
Southern Darfur	4	46	50	46	-	46	-
Northern Kordofan	4	135	-	44	3	47	88
Southern Kordofan	2	49	65	5	9	14	35
Total - Northern Four Regions	31	737	282	287	167	460	289
SOUTHERN REGIONS							
Eastern Equatoria	1	20	37	5	13	18	New units
Western Equatoria	1	31	26	25	16	31	will begin
Bahr El Ghazal	1	17	17	-	17	17	operating
Lakes	0	5	13	-	6	6	between
Jonglei	0	7	7	-	7	7	May-August
Upper Nile	1	6	9	4	2	6	1979
Total - Southern Regions	4	86	109	34	61	85	
GRAND TOTAL	35	823	391	321	228	545	

* Now in service; new groups start training in July 1979.

Source: Ministry of Health, Department of Rural Health (PHCP), Annual Report.

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b. PHCP Facilities to be Staffed

Facilities existing before the PHC Program began are being converted, renovated or replaced to fit the new infrastructure. Distribution of facilities is based on the formula of one PHCU for each village or cluster of villages with a population of 4,000 (the first service level); one dispensary for five satellite PHCUs, population 20-25,000, (the second level); and one district health center serving four or more dispensary complexes, population 100-150,000 (the third level).

The plan for the Northern Region calls for 144 health centers, 396 dispensaries, 1980 village PHCUs for settled areas and appropriate PHCUs at base villages and fixed stations on major grazing routes for some of the 837 NCHWs. In the Southern Region there will be PHCUs for 763 CHWs, 190 dispensaries and about 50 health centers when the staffing can be completed.

The following table lists facilities existing in 1977. Those that are in suitable locations will be upgraded or rebuilt. Dressing stations will become PHCUs. While there is some maldistribution of dressing stations and dispensaries, most health centers exist in district towns and thus are properly located. Note that the Southern Region reports having only 12 health centers, considerably below the projected number required for the PHCP infrastructure. The South is still experiencing population movement, with many areas sparsely settled and quite inaccessible. Poor communications and impossible travel during the rainy season to remote areas further complicates the delivery of services and supplies.

Most of the new PHCUs where CHWs have been posted are being constructed by self-help. This is the villagers' contribution, thus requiring very little input from the government at this service level.

c. Staffing Requirements for the PHCP

Personnel are deployed to staff the various service levels as follows:

1) PHCU (a village or cluster of villages)
   - 1 community health worker
   - 1 village midwife, trained by the MOH, but paid by village council (not assigned to PHCU but may use for clinics).

2) Dispensary
   - 1 medical assistant or male nurse
   - 1 nurse-midwife or village midwife
   - 1 dresser (if already in place)
   - 1 sweeper

3) District Health Center
   - 1 senior medical assistant
   - 1 nurse midwife
   - 1 health visitor
   - 1 medical doctor in some areas
   - Other nursing staff as needed on basis of work load.

Table 2

Health Facilities 1977

PROVINCES	Health Centers	Dispensaries	Dressing Stations
NORTHERN REGION			
Khartoum	33	50	91
Gazera	52	124	484
White Nile	9	35	93
Blue Nile	10	61	223
Nile	20	57	150
Northern	11	69	121
Kassala	13	53	119
Red Sea	5	14	57
N. Kordofan	17	62	119
S. Kordofan	4	40	90
N. Darfur	9	39	44
S. Darfur	6	24	42
Total Northern Region	189	628	1,633
SOUTHERN REGION*			
Equatoria	4	47	137
Bahr El Gazal	4	23	85
Upper Nile	4	38	46
Total Southern Region	12	108	268
Total both Regions	201	736	1,901

*Before division into six provinces.

Above the district level, administrative, supervisory and logistic support are directed by the Provincial Assistant Commissioner for Health. On his staff are Provincial Health Officers, Medical Assistants, Health Inspectors and Nursing Inspectors. (See the Health Sector Assessment op. cit. for details).

Duties of the health personnel are detailed in the regional Primary Health Care Programmes. (See referenced MOH documents).

Personnel by category needed to complete the staffing will be on the order of:

Northern Regions:	1980 CHWs
	837 NCHWs
	540 Nurse Midwives
	540 Medical Assistants, some of whom may be male nurses in dispensaries
	144 Health Visitors
Southern Region:	763 CHWs
	240 Nurse Midwives
	240 Medical Assistants or male nurses
	50 Health Visitors

District councils also employ Sanitary Overseers who are trained in environmental health and work with villages to control flies, mosquitoes, rats; to build latrines and protect water supplies; and to dispose of waste materials. Rural councils in larger towns at the subdistrict level may also employ SOs. Some villages have assistant SOs who are trained and work under the direction of the SO, but they are few in number.

The PHCP staffing pattern for supervision will be strengthened in certain areas. Staff in the dispensaries and health centers are not able at this time to provide the kind of close supervision needed by the CHWs. The Health Visitor, a nurse midwife with additional training who is stationed at a health center or, more likely, in the maternity unit of the district hospital, does not have mobility to supervise in the field. The project will provide a four-wheel vehicle at each training center for use by staff to supervise and resupply the CHWs and VMWs within their areas.

To adequately supervise the dispensary staff, the health center may need an additional assistant to the MA. It has been proposed that an experienced CHW be assigned at the dispensary level to supervise village CHWs.

The program requires considerable flexibility to adjust the staffing patterns to meet local needs. In many rural areas, where villages may be far apart, more CHWs and second level supervisors may be required

than are specified in the plan based on population ratios. Accelerating the output of the CHW training schools is possible by decreasing the time lapse between each program - the program is 9 months long and the remaining three months of the year are scheduled for reorientation and refreshers. This time can be shortened and new groups of trainees enrolled more often than once a year. This and other alternatives in health service delivery should be tried. Nomadic tribes are serviced by veterinary workers from mobile clinics. This would suggest cross training in human health services. Where villages are so isolated to be inaccessible for ling periods, someone in the village could be taught simple skills and supplied by the CHW. The same strategy would apply to the training of a member of a nomad tribe. This would be further extension of health services at little cost to the government and effected via the proposed refresher coureses for CHWs.

d. Training of PHC Personnel

Personnel Training Requirements

The following table shows training requirements for the Northern Regions for all categories of personnel. Those required for the PHCP are noted. Shortfalls for 1984 are based on projection of training at the present level.

2. Rationale for AID Support in Manpower Development

Success of the Primary Health Care Program depends upon a proper mix of trained health workers, good administrative and supervisory capabilities and adequate facilities and commodities required for delivery of services. A review of the present manpower status shows not only a shortfall of trained personnel to staff the PHCP, but also certain weakness in those already trained. The training and placement of CHWs, medical assistants and nurses continues to emphasize curative medicine rather than balanced curative, preventive and promotive care services. Supervision of the frontline workers has also been neglected.

Therefore, the training requirements addressed in this AID support will focus on improving quality and on increasing numbers of health workers in critical shortfall categories.

TABLE 3

TRAINING REQUIREMENTS, MINISTRY OF HEALTH, NORTHERN SUDAN FOR ALL CATEGORIES OF PERSONNEL, 1979-1983*

School/Institute	Requirements end of 1983**	Number in Service 1979	No. to be Trained 79/80-83/84	Output end of 1983 Total	Shortfall No. Deficient ***	Projected No. Deficient Annually ****
CHW*	1980	711	1269	1980		
NCHW	837	178	659	837		
Nursing	18562	11200	7362	18562		
Sanitary Overseer	920	258	662	270	392	98
Village Midwife	12678	4678	8000	4170	3830	958
Nurse Midwife	916	400	516	375	141	35
Health Visitors	1204	457	747	200	547	137
Med. Asst., Gen.	2416	1016	1400	1000	400	100
Med. Asst., Eye	524	100	424	125	299	75
Med. Asst., Dental	344	100	244	144	100	25
Med. Asst., Anesth.	438	100	338	100	238	60
Med. Asst., Physio	87	27	60	60		
Med. Asst., Psych	109	9	100	100		
Med. Asst., Pharm	646	100	546	250	296	74
Med. Asst., Lab	1000	363	637	316	321	80
Nurse Instructor	161	127	34	200	exceeds requirements	
Therapy Attendants	652	400	252	1080	"	"
Ophth. Asst.	75	45	30	80	"	"
Refraction Asst.	330	80	250	50	200	50
Lab Tech.	200	93	107	200	exceeds requirements	
Hosp. Nurses (Sisters)	461	235	226	170	56	14
Public Health Officers	491	260	231	150	81	20
X-ray Tech.	297	152	145	200	exceeds requirements	

*1983/84 - end of 6-year plan. Source of information: Department of Training, (MOH). (Source of CHW and NCHW figures: Department of Public Health (PHCP))

** Categories producing PHCP personnel include CHWs, NCHWs, Sanitary Overseers, Village M/W Assistant Health Visitors, Nurse Midwives, Health Visitors, General Medical Assistants, Nurse Instructors and Public Health Officers. Numbers for MAs and nurses include personnel needed for both curative and preventive services.

****Four year projection.

Table 4 lists locations of training schools, North and South, by personnel categories.

TABLE 4

TRAINING SCHOOLS, MINISTRY OF HEALTH, BY LOCATION, 1979

TRAINING CATEGORY	LOCATION OF SCHOOLS
1. Community Health Workers and Nomadic CHWs	All Provinces, Various Facilities
2. Nursing	All Provinces, Hospitals
3. Sanitary Overseers	Khartoum, School of Hygiene
4. Village Midwives	All Provinces (Independent)
5. Assistant Health Visitor	El Damer, Nile Province
6. Nurse Midwife	Khartoum, Gezira, North Kordofan
7. Health Visitor	Khartoum, Gezira (Independent)
8. Medical Assistant, General	Khartoum, Gezira, Nile, El Obeid, Port Sudan, Juba
9. Medical Assistant, Ophth.	Khartoum Eye Hospital
10. Medical Assistant, Dental	Omdurman (Independent)
11. Medical Assistant, Anesth.	Khartoum City Hospital
12. Medical Assistant, Physiotherapy	Khartoum City Hospital
13. Medical Assistant, Psych.	Tigani Psychiatric Hospital, Omdurman
14. Medical Assistant, Pharmacy	Khartoum Training Center
15. Medical Assistant, Lab	National Health Laboratory, Khartoum and Juba
16. Nurse Tutors	Khartoum Training Center
17. Therapy Attendant (Physician Asst.)	Khartoum City Hospital, Medani, Port Sudan, Atbara, El Obeid
18. Physician Asst, Ophth.	Khartoum Eye Hospital
19. Instructor, Refraction	Khartoum Eye Hospital
20. Instructor, Lab	National Health Laboratory, Khartoum
21. Hospital Nursing	H N College, Khartoum (Independent)
22. Instructors, Hosp. Midwives	Khartoum (Independent)
23. Hygiene (Public Health Officers)	Khartoum (Independent)
24. Radiographer	Training Center, Khartoum

Table 5 lists for the Northern Regions the training institutions, the duration of training courses, the annual output, educational requirements for entry, and the numbers of students graduated to 1979. (See Annex on Southern PHC Program for further information on existing training capability in the South.)

TABLE 5

TRAINING SCHOOLS AND INSTITUTES, MOH, BY CATEGORY OF PERSONNEL TRAINED, NUMBER OF SCHOOLS, LENGTH OF TRAINING, ANNUAL OUTPUT, EDUCATION REQUIRED, FOR ADMISSION AND NUMBER GRADUATED TO 1979

Personnel Category	No. of Schools	Duration of Training, Mo.	Annual Output	Educ. Req.	No. Grad to 1979
CHW and NCHW	30	9	376	J.S.[1]	834
Nursing	55	36	750	J.S.	11200
Sanitary Overseer	1	6	50	J.S.	258
Village Midwife	18	12	695	-	4678
Asst. Health Visitor	1	12	20	Lit.[2]	80
Nurse Midwife	3	12	75	N.C.[3]	260
Health Visitor	2	12	40	N/MW[4]	457
Med. Asst., General	5	24	200	N.C.[5]	1016
Med. Asst., Ophth.	1	24	25	N.C.	174
Med. Asst., Dental	1	24	20	N.C.	124
Med. Asst., Anesth.	1	24	20	N.C.	172
Med. Asst., Physioth	1	24	20	N.C.	27
Med. Asst., Psych.	1	24	20	N.C.	9
Med. Asst., Pharm.	1	24	50	N.C.	100
Med. Asst., Lab	6	24	63	J.S.	363
Nursing Tutors	1	24	40	J.S.	127
Therapy Attendant	5	24	180	J.S.	400
Ophth. Tech. Asst.	1	24	10	J.S.	46
Institutes					
Refraction	1	36	10	H.S.[6]	80
Laboratory	1	36	40	H.S.	92
Hospital Nursing	1	36	40	H.S.	310
Hospital Midwife	1	36	10	H.S.	40
Hygiene (PH Officer)	1	36	30	H.S.	452
Radiography	1	36	40	H.S.	152

Footnotes:
1 J.S. - junior secondary (9years)
2 Lit - literate
3 N.C. - Nurse Certificate plus 1 year experience
4 N/MW - Nurse Midwifery plus 1 year experience
5 N.C. - Nurse Certificate plus 2 years experience
6 H.S. - High school (12 years)

A proposed regional training center, under construction in the South, will generate health visitors, nurse midwives and medical assistants needed for staffing of health centers and dispensaries. Supervision, inservice training and distribution of drugs and supplies will be improved by strengthening these service levels. The proposed village midwifery training centers will increase the output in this category of critical shortfall.

The proposed pilot district level facility will demonstrate how lower level training activities can improve delivery of services by providing continuous inservice training for VHWs, VMWs, sanitary overseas, and other district health personnel.

Thus, by infusing AID support into the areas of 1) training of personnel in shortfall categories, 2) extension of training to the district level, and 3) third country training for key PHCP personnel, the training infrastructure will be appropriately strengthened.

The AID support takes into account the interdependency of training actions. To overcome the shorfalls noted in Table 3 will require close assessment of training inputs and outputs for each category of personnel in terms of how one activity relates to the others. Thus, from the base upward:

Nurses (most are in hospitals) - no problem in this training category as hospitals throughout the country train them. At an annual rate of 750 graduates, the required 18,562 will have been trained by 1984.

Village Midwives - The village midwife is an important member of the health team because, when properly trained, she can make a major contribution to the extension of MCH/Nutrition/Family Planning services. The need is for one trained midwife in every village - a 1984 target of 12,000. Only 4,678 are presently trained, and at an annual rate of 695, the 1984 total will be only 8,848, some 3830 short. It would take six years to overcome the deficit, not counting attrition.

To accelerate the training would require additional tutors, drawn from the pool of Nurse Midwives. Ratio of NMW to students is 1:6. Nurse midwives are in short supply, creating a major training bottleneck.

Nurse Midwives - These female students are drawn from the hospital nursing pool, which has a broad base. However, because of hospital requirements, administrators are reluctant to release any nurses.

With the placement of Nurse Midwives in PHCP dispensaries and health centers, the number required will far exceed the supply. When fully staffed, the PHCP could absorb all NMWs in service in 1984. Thus, a major training need in the PHCP is to accelerate the intake and training of NMWs.

Health Visitors - A second major bottleneck emerges because NMWs are trained by Health Visitors. Because only 40 HVs graduate each year (2 schools) the shortfall of 547 in 1984 would take 14 years to erase, not considering attrition and increased demand.

Like the NMW, the HV has a major contribution to make in the extension of MCH/Nutrition/FP services.

Medical Assistants - The MA is recruited from the hospital nursing pool. Five schools generate 200 candidates per year. The shortfall of 400 can be overcome in two or three years beyond 1984. However, a closer look at supply and demand for this category is indicated.

CHWs and NCHWs - Faltering training programs may affect the completion of CHW/NCHW training by 1984. This will result in a dilution of coverage beyond 1984.

TBAs - to date very few TBAs have received any training. There have been few experiments, and some informal training of TBAs in one or two areas. No data exists on the number of TBAs practicing.

The training strategy will depend on top level planning where policy decisions will set priorities to guide both service and training components in selection, training and placement of health personnel. To accomplish this, AID will work with UNFPA to conduct, 1) an assessment of training capabilities and 2) to review curricula in terms of their relevancy to job functions. This will result in a better coordinated total training program by identifying and eliminating obvious weaknesses and bottlenecks in the present program.

A major problem in training adequate numbers of personnel in the proper mis, is that most of the training institutions for the various categories function independently. As noted above, hospitals train their own nurses and, because of their own requirements, are reluctant to release the nurses for nurse midwifery or medical assistant training. Training methodology and curriculum content, crystallized when the institutions first began operations 30 to 50 years ago, have been rigidly maintained. Even though the new approach of the Primary Health Care Program emphasizes preventive services and health promotion, both the training and the PHC services are still largely curative oriented.

At present the MOH trains several categories of health workers whose functions converge and sometimes overlap in the delivery of rural health services. In the past, the training of MCH workers (village midwives, nurse midwives) placed heavy emphasis on delivery of births. New concepts of MCH services now broaden their job functions to include greater attention to

antenatal and postnatal care, nutrition education, family planning, immunization, child growth and development, and improvement of the environment. Some of these functions are now considered within the scope of the CHW's work. Curricula will be examined and modified to include these activities.

Similarly, training of CHWs, including NCHWs, is strong on environmental health (latrine construction, safe water supplies, waste disposal and insect control). These workers have some overlapping functions with MCH workers in family health promotion, nutrition education, immunization and collection of health data.

Also, Sanitary Overseers and Assistant Sanitary Overseers, who promote better environmental health, have duties which run parallel to those of the CHWs.

TABLE 6: SUMMARY OF IN-COUNTRY TRAINING - SHORT TERM

Project Component	Type & Number Programs	Participants - Number & Type	Purpose	Duration
Logistics	7 reorientation	70 GOS logistic/supply personnel.	Improvement of practical skills	1 week
HMIS	7 seminar	140 Provincial HQ Asst.Comm. of Health, statisticians.	Focus on information system as a tool in program planning, management and evaluation	2 weeks
Planning and Management	6 inservice seminar	120 senior personnel from ministries, Provincial Asst. C. of Health; exec. mangers.	Improve skills in planning and programming for health services; human and physical resources; budget accounting and audit systems; personnel procedures; supply, maintenance and management practices.	2 weeks
"	14 inservice seminar	280 middle management and field administrators incl. MAs, storekeepers, provincial & district personnel.	As above	1 week
"	10 seminar-workshop	200 senior and middle level managers - South.	Focus on HMIS, logistics/supply, personnel management, budgeting for health programs.	1 week
"	10 joint North/South seminars	200 senior and middle level managers	As Above	2 weeks
Training	8 seminars	160 personnel from training programs.	Review training activities, make decisions of priorities and ways of improving the program.	1 week
Training for PHCP	90 reorientation	sanitary overseers, health visitors, medical assts. and midwives.	Information and guidance to increase scope of activities to include community development, preventive and promotive aspects of health.	1 week
"	90 refresher	CHW, NCHW, VMW, ASO	As above in addition to review of present functions.	1 week

Table 7: PARTICIPANT TRAINING - ALL PROJECT COMPONENTS

BY TYPE, PHASING, AND TOTAL PERSON MONTHS

SOUTHERN SUDAN

TYPE - PARTICIPANT TRAINING	YEAR 1	2	3	4	5	6	7	Total PM
Long term, 3rd country: (12 mo.)								
1 Management Official				12				12
1 Health Educator			12					12
2 MCH Tutors			12	12				24
1 Sister Nurse Tutor			12					12
1 Sanitary Overseer				12				12
SUB-TOTAL PM								72
Short term, 3rd country: (4 mo.)								
2 Health Services Management	4	4						8
2 Information Systems	4	4						8
2 Tutor Trainers		4	4					8
1 Health Educator		4						4
4 MCH Program Planner/Coordinator	4	8	4					16
2 Sanitary Overseers	4	4						8
1 Logistics/Supply	4							4
2 Radio Technicians (2 mo. course)		4	4					8
SUB-TOTAL PM								64
Short term, 3rd country: (1 mo.)								
2 Management Services		1	1					2
2 Information Services	1	1						2
2 Health Educators		1	1					2
20 MCH/PHCW	2	4	6	4	4			20
2 Logistics	1	1						2
2 Sanitary Overseers		1	1					2
2 Communications	1	1						2
SUB-TOTAL PM								32

TOTAL PARTICIPANT TRAINING (55 PERSONS)

PERSON MONTHS 168

PERSON YEARS 16

Table ~~6~~: PARTICIPANT TRAINING - ALL PROJECT COMPONENTS

BY TYPE, PHASING, AND TOTAL PERSON MONTHS

NORTHERN SUDAN

TYPE PARTICIPANT TRAINING	Year 1	2	3	4	5	6	7	Total PM
Long term, 3rd country: (12 mo.)								
1 Sister Nurse Tutor		12						12
2 MCH Tutors		24						24
2 Public Health Engineers								
SUB-TOTAL PM								
Short term, 3rd country: (4 mo.)								
6 PH/MCH Program Planner/Coordinator		12	12					24
SUB-TOTAL PM								24
Short term, 3rd country: (1 mo.)								
24 MCH/PHCW		5	5	5	5	4		24
4 "Communications for health"		4						4
SUB-TOTAL PM								28

Table 9.

PROFESSIONAL STAFF OF THE REGIONAL MINISTRY OF HEALTH AT THE HEADQUARTERS AND IN THE PROVINCES 1978*

1. Headquarters

	Category of Staff	Number Present	Total Number Required	Deficiency
A.	Administrative Staff			
	Director	1	1	-
	Deputy Directors	2	8	6
	A/Directors	-	16	16
	Ass't Directors	3	6	3
	Senior Inspectors			
	Chief Public Health Officer (Malaria)	1	11	10
B.	Technical Staff			
	Pharmaceutical Registrers	1	1	-
	Regional Medical Assistants	3	3	-
	Principal Matron	1	1	-
	Principal Nursing Instructor	1	1	-
	Medical Store-keepers	16	16	-
	Medical Statisticians	4	8	4
C.	Hospital Specialists			
	Physicians	3	12	9
	Surgeons	2	10	8
	Gynaecologists	2	6	4
	Dentists	2	6	4
	Ophthalmologists	1	6	5
	Psychiatrists	-	2	2
	Anaesthetists	-	6	6
	Pathologists & Microbiologists	-	2	2
	Chemists	-	1	1
	Radiologists	-	6	6
	Paediatricians	1	6	5
	E.N.T. Specialists	-	3	3
	Pharmacists	1	6	5
	Physiotherapist	-	1	1

*These figures obtained from Dep. Ministry of Health October 1978 by PID design team. For more recent figures - see Summary - Health Manpower - Southern Region Classified Personnel, May 1979 - Annex A. Page 23 all categories not listed on update.

2. Provinces (Hospitals, Health Centers, Rural Health Units).

	Category of Staff	Number Present	Total Number Required	Deficiency
A.	Administrative Staff			
	Assistant Commissioners of Health	4	6	2
	Deputy A/Commissioners of Health	1	6	5
	Senior Public Health Inspectors	4	6	2
	Provincial Medical Assistants	11	17	6
B.	Technical Staff			
	General Medical Officers	45	126	81
	Public Health Officers	17	63	46
	Health Educators	4	13	9
	Health Visitors	24	47	23
	Nutrition Officers	2	10	8
	Sanitary Overseers	46	69	23
	Nursing Instructors	17	42	25
	Medical Assistants General	263	354	91

3. Primary Health Care Program

A.	Headquarters Staff			
	Medical Officers	-	2	2
	Administrative Officers	1	2	1
	Public Health Officers	-	1	1
	Medical Store-keepers	1	1	-
	Medical Statisticians	-	1	1
	Inspectors of P.H.C.P.			
B.	Community H.W.School			
	School Principals	-	7	7
	Tutors	10	14	4
	Store-keepers	6	7	1
C.	Provincial Staff			
	Inspectors	-	6	6
	Administrative & Supply Officers	-	6	6
	Store-keepers	-	6	6
	C.H. Workers			
	Medical Assistants		14	

Category of Staff	Number Present	Total Number Required	Deficiency
Medical Assistants (Dental)	24	48	24
Medical Assistants (Ophthalmic)	16	33	17
Medical Assistants (Leprosy)	20	24	4
Medical Assistants (Psychiatric)	2	9	7
Medical Assistants (Pharmacy)	5	14	9
Medical Assistant (Anaesthetic)	10	36	26
Medicl Assistants (Laboratory)	78	158	80
Laboratory Technicians	5	12	7
Theatre Attendants	42	92	50
X-Ray Technicians	12	30	18
Nursing Sisters	14	23	9
Medical Store-keepers	35	65	30
Dental Technicians	-	6	6
Ophthalmic Technicians	1	8	7
Midwives	?	?	22
Nurses	?	?	?

Health Education Specialist Job Description

1. Location: Juba

2. Qualifications: A social scientist with post-graduate training in health education

3. Duties:

   a. Develop and carry out health education training program for front-line health workers

   b. Develop the Health Education Unit at RMOH and provincial capability for health behavior and health education programming.

   c. Design, organize and carry out community baseline studies regarding village level health-related attitudes/customs, beliefs

   d. Act as Project Director for Radio Broadcast Health Education Project

   e. Develop health education learning resources including visual aids

Provincial Coordinator Job Description

1. Location: Based at Assistant Commissioner for Health offices in participating provinces.

2. Qualifications: Public Health Nurse/MCH bias, Public health engineer and sanitarian, health services administrator, medical training officer depending on provincial needs

3. Duties:

   a. Conduct the project activities in the respective provinces.

   b. Establish collaboration and conduction with RMOH personnel.

   c. Participate in the development and implementation of the training program as per area of expertise in the province.

   d. Assist the development of the project MCH activities health information system and logistics system in the province.

   e. Carry out on-going evaluation studies and discuss results with relevant training institutions and RMOH personnel.

   f. Develop the capability of the provincial health officer for project implementation.

Project Manager Job Description/North

1. Location: Khartoum

2. Qualifications: Degree in administration with at least 5 years experience in developing country.

3. Duties:

   a. Responsible for all project management and administrative support activities in Northern Sudan.

   b. In collaboration with PIU he will recruit and organize short term technical assistance.

   c. Deals with GOS officials regarding relevant management and administrative matters; e.g. customs, immigration, finance, transport, etc.

   d. Assist where appropriate in enhancing management and administrative capability of RMOH provincial health officer and the health service institutions.

   e. Overseers project construction component in collaboration with project building supervisor.

   f. collaborates with existing NPHC project personnel especially in the development of training programs for logistics, management personnel and information system personnel.

Project Manager Job Description/South

1. Location: Juba

2. Qualifications: Degree in administration with at least 5 years experience in developing country.

3. Duties:

   a. Responsible for all project management and administrative support activities in Southern Sudan.

   b. In collaboration with AMREF he will recruit and organize short term technical assistance.

   c. Deals with GOS officials regarding relevant management and administrative matters; e.g. customs, immigration, finance, transport, etc.

   d. Assist where appropriate in enhancing management and administrative capability of RMOH provincial health officer and the health service institutions.

   e. Overseers project construction component in collaboration with project building supervisor.

ANNEX C: MATERNAL-CHILD HEALTH/NUTRITION/FAMILY PLANNING

A. Background

1. Introduction

One of the major components of this project is concerned with maternal and child health services. The project will assist the Ministry of Health in strengthening MCH at central and provincial levels, with particular emphasis on integration of MCH/Nutrition/Family Planning services with other elements of the PHCP. A major point of intervention will be in the training of health service personnel, particularly for those who will serve at the village and dispensary levels.

At the national level, the MOH has several units whose functions have direct bearing on the delivery in the provinces of what should be integrated MCH/Nutrition/Family Planning Services. As noted below, there is a central MOH committee responsible for coordinating the inputs of separate MCH, nutrition, health education, vaccination, disease control and training units. Several MOH reorganizational changes are now under consideration. The Ministry will establish a coordinating and planning unit for the PHCP. This should strengthen MCH inputs.

The following sections describe the organization and functions of the separate MCH, nutrition and health educations units of the MOH.

Although these units function "vertically" in the Ministry, their contributions in training and program implementation for the PHCP become integrated at the provincial and lower levels.

2. Administration and Organization of MCH Services

a. National Policy

The Sudan Constitution in Article 27 states that "laws and regulations to organize and adopt Maternal and Child Health Services" be formulated by the State.

Article 10 of the Public Health Ordinance deals with the organization and definition of MCH. MCH services are to be planned and operated as an integral part of the general health services in coordination with the country's programs for social and economic development. Services to the entire population should include basic minimal care; health education; antenatal, intranatal and postnatal care; screening and referral of high-risk groups and individuals who require more advanced treatment.

The National Health Programme 1977/78 - 1983/84 gives high priority to an MCH program and plans to provide at least a basic minimum of services throughout the country. To achieve this maximum coverage, it will be necessary to utilize the specially trained village midwives and community

health workers.

b. Mechanism for Policy Determination

(1) National

At the National level, a "Central MCH Committee" is said to be responsible for setting policy and planning. The Director General for Rural and Community Health heads this body. Members include the Senior Obstetrician, Senior Pediatrician, Directors of Health Education, and Nutrition, and representatives of Nursing and Midwifery. The Ministry of Social Welfare is also represented.

Designated functions are:

- Planning of policy and administrative guidance.
- Study of Maternal and Child Health problems, services and needs.
- Coordination with different departments in the MOH and other Ministries.
- Liaison with peripheral units (MCH services are under local administration).
- Planning of programs for local needs and securing of budget from local resources and self-help, or support from foreign donors.
- Supervision of manpower development and training.
- Need assessment of effectiveness and results.

Specific responsibilities include:

(a) Suggesting the basis and level of national planning to meet the preventive, curative and social needs for children and assure distribution of services in rural and urban areas on an equal basis.

(b) Suggesting the vaccination schedule for children against communicable diseases.

(c) Training and making available trained MCH personnel and planning to make available kindergartens and day care centers in cooperation with the interested agencies.

(d) Raising funds to make available preventive, curative and social services for mothers and children, such as medical equipment and supplies, food and drugs, supervising their distribution in the MCH centers in the provinces and districts, assuring that they are distributed on an equal basis.

(e) Propagating awareness about health of mothers and children in cooperation with the Department of Health Education and Ministry of Culture and Information.

(f) Holding conferences regularly in the provinces to study the problem of mothers and children and giving solutions to these problems .

(2) Provincial

MCH services are planned and administered in the provinces under the Commissioners of the Provinces. A Regional Committee similar to the Central Committee is headed by the Assistant Commissioner for Health. Constitution and functions are similar, but jurisdiction is limited to the region. Regional Committees are less active and likely to be involved primarily with recruitment of manpower and training. Midwifery personnel on committees frequently take the lead in planning what MCH programs exist and coordinating efforts with vertical programs that involve MCH.

(3) Village

The People's Councils in the Provinces have a right to establish committees and branches in the districts and villages for maternal and child health. The Ministry will supply expertise and technical assistance to the committees on request. Personnel can be trained for preventive and curative services. The Ministry can make available equipment and supplies as part of donor aid, through the development budget, or through funds from the People's Council.

In fact, the maternal-child health committee does not exist at this level at all.

c. Assessment of the Central MOH Committee - Based on Functions

Effectiveness of the MCH Committee mechanism in policy determination at the national level is limited by constraints that effect the entire health program. There have not yet been developed the policies, principles, and practices that serve as guidelines for delivering combined comprehensive maternal and child care services in various facilities through different programs.

The present Family Planning Committee can be considered as subcommittee of the Central MCH Committee. This group was delegated to evaluate Family Planning activity in the MOH including a Maternity-Centered Family Planning Project. An ad hoc group of this committee reviewed background documents related to population policy and FP activities and submitted a report to the central MCH Committee. Proposals recommended by the National Committee on Family Health were supported by the Central MCH Committee which then submitted these proposals to UNFPA, the project's sponsor, for further assistance.

Funding for proposals has been obtained through the Committee's efforts. However, planning of programs for local needs and attempts to secure resources and budget are often individual rather than committee efforts.

The Committee's liaison with voluntary organizations is through the Ministry of Health which must support or agree with the organization's activities. Liaison with peripheral units seems to be an informal rather than a formal procedure.

Overall, the Central MCH Committee has carried out its designated functions with varying degrees of effectiveness. Some of the stated functions are more effectively carried out by the departments involved; e.g. manpower and training. Coordination with different departments in the MOH and other ministries is more dependent on personal contacts than committee directives. Committee involvement is not noticeable either at the provincial or village level.

d. Existing MCH Organization/Administration

(1) National

In the organizational structure of the health services the MOH has a Department of Social Medicine, in which one of the units is Maternal Child Health. Planning and policy making are said to be carried out at the department level. Since there is also a Planning and Finance Department in the Ministry responsible for health planning, it is not clear who originates policy. Within the past month, an Acting Director has been appointed to head a new MCH unit and a permanent Director will be assigned when he returns from overseas study. How the new unit will fit organizationally and functionally is not yet clear.

(2) Provincial

Field implementation of MCH strategies is administered at the provincial level and controlled at the district level. Until such time as there are designated MCH officers at the provincial level, the Assistant Commissioner for Health has responsibility for these services. There are gynecologists in each province, although not in each hospital, who provide maternal services. There is also a cadre of midwifery personnel involved in MCH.

e. Facilities for MCH Services

MCH services are provided at health units as described below:

The provincial hospital - generally staffed with an obstetrician/gynecologist. Not all have pediatricians. Diagnostic facilities are available.

The district hospital - some in-patient beds for obsetrical care with outpatient services either by referral or self-reporting.

The health centers - polyclinics with MCH services under the direction of a midwife. In high population density areas there may be a doctor assigned. Most health centers do not have doctors. Usually there is a pharmacy and sometimes a laboratory.

The dispensary - outpatient services are delivered by a medical assistant and a village midwife who is responsible for MCH activities.

The dressing station - usually served by a male nurse who dispenses common medications and emergency care. No official link exists with the village midwife or traditional birth attendant but cooperative efforts in health promotion are possible at this level.

The Primary Health Care Unit - staffed by a community health worker, predominantly male. Function of the CHW includes some tasks related to MCH but generally not performed adequately.

f. Staffing for MCH Services

There are now 1630 practicing physicians of whom 58 are obstetrician/gynecologists and 21 pediatricians. Distribution is uneven, with most of them concentrated in the Khartoum and Gezira Provinces.

Medical assistants who run health centers and dispensaries total 1016, an inadequate number especially in relation to the number of doctors.

Health visitors, the nurse-midwives who have had additional training in community work, number 457. This number is totally inadequate since they also have responsibility for training and supervision of village midwives.

Nurses, male and female, number 11,200. The training of these personnel includes some functions related to maternal-child health.

Village midwives number 4678. They provide care to mothers and children in the village setting.

g. MCH and FP Services

Antenatal care is given in clinics in health centers which are usually located in the urban and more densely populated areas. Services include pregnancy diagnosis, physical examination and tests, identification and referral of high-risk mothers, and follow-up during pregnancy. Family planning services including treatment for infertility are available in the Khartoum and Gezira areas. The scope of services given varies from center to center.

Maternal care in hospitals tends to be curative in nature because of the referral of high-risk mothers from health centers. Home delivery is the pattern for most of Sudan. Even in the cities where institutionalized services are available, most of the babies are delivered at home.

Postnatal care in hospitals is usually short. Postnatal home visit as a regular service is limited. Follow-up of postpartum mothers is most likely to occur after outpatient antenatal care and home delivery. Nutrition guidance and oral rehydration procedures are usually part of postnatal services.

There is no official national population policy. The MOH accepts the idea of family planning as a method for spacing of pregnancies to safeguard the health of the mother and child rather than as a way of limiting births for demographic reasons. Treatment of infertility is also considered a component of family planning activities. The popularity of such clinics have made possible earlier access to mothers. These activities are to be integrated into maternal-child health and general health services throughout the country.

h. Pre-School Child Care and School Health

Child care country-wide is esentially curative, with the exception of certain centers conducting child-health supervision and follow-up. Immunizations are given as part of separate campaigns throughout the country. Immunization is a separate division under the Department of Social Medicine, as is School Health. Under the School Health Program, all registered children are to be examined. The School Health Program is operational in about half of the Provinces.

i. Nutrition Education/Rehabilitation Centers

Pre-school nutrition units have been established through the nutrition division in 43 health centers in Khartoum Province. Emphasis is on nutrition education and the preparation of nutritious meals from locally available foods. Children are weighed, measured and comparisons made with standard curves on growth charts. Mothers of underweight children are given special instruction and food supplements. Dry milk and oil are distributed as an incentive to return for follow-up.

Unfortunately a nutrition rehabilitation center in the Pediatric Hospital at Khartoum where severely malnourished children were treated has ceased operations. The demand for regular pediatric beds resulted in the cessation of this service as the space allotted was gradually taken over by other types of pediatric problems.

J. Family Health Education

Education for family health is an activity of the Department of Health Education, Ministry of Health. A mass media approach using television, posters, newspapers, and radio interviews convey to the public the concept of MCH/FP and its importance to the national health.

The Sudanese FP Association has also used the newspaper to discuss the problem of population growth and family planning.

3. Overview of Midwifery Training Past and Present

Midwifery training in Sudan predates medical education. The first midwife training school in Omdurman was started through the efforts of Miss M.E. Wolff who came to Sudan from Egypt in 1920 to train women to work as midwives. The first four students were already practicing midwifery; two were 70 years of age and all were illiterate. The course was from 4 to 12 months. In 1924 students were accepted from other areas of the country. By 1942, midwifery candidates were chosen from among those who had completed elementary school.

Training traditional birth attendants can hardly be considered innovative in Sudan, given the origins of midwifery training here. However, with more highly qualified candidates available, such training diminished to the extent that the training of traditional birth attendants in one province has now been designated a "pilot" program. There is resistance within medical circles to this type of training.

Basically there are three types of midwives:

- the nurse midwife,
- the village midwife, and
- the traditional midwife.

The nurse midwife has had a midwifery course after completion of the nursing course. There are three schools for this training. Completion of training requires five years (three years nursing and two midwifery).

Village midwives may be elementary school graduates who have taken a course at one of the 18 village midwifery schools located in the provinces. Frequently they are illiterate, and the tutors take this into account in the teaching methodology. The course is said to be nine months but often it is longer due to a requirement that each prospective midwife participate in a fixed number of deliveries.

Traditional midwives or birth attendants generally inherit or learn their role in the community. There is no formal training, although a small number had received instruction under supervision. It is estimated that they deliver 65% of the babies born in Sudan.

The health visitor is a certified nurse midwife who receives an additional two years' training (total 7 years). Her role is community oriented and she is expected to participate in health education, nutrition education, ante- and postnatal clinics, and the training and supervision of village midwives. There are only 400 health visitors in the country.

The following is a brief description of the different types of midwifery training schools in Sudan:

a. Village and district midwives schools

Criteria: Candidate from same village of assignment
Age 18-25
Medically fit
No educational background required - priority given to literates.
Language: Arabic
Duration: 12 months

Course includes: Practical demonstration (360 hours),
Lectures (50 hours)
Practical training in MCH clinics (144 hours)
Practical training in Hospitals (144 hours)
Domiciliary deliveries conducted - 15
Examination: Oral theoretical
Practical on model and antenatal patients
Reports
Licensing body: Central Board of Public Health
Scope of Work: Antenatal and postnatal care
Normal deliveries at home
Diagnosis of abnormal deliveries and diseases to refer to physician or medical assistant
Dispensing of limited drugs like ergot tablets, laxatives, analgesics. Sometimes trained to give intramuscular injection under doctor's orders.
Care of newborn
Supervised by medical assistant, professional midwives and doctors in the district
Occasionally works in district hospitals under doctors or at a dispensary

b. Nurse Midwives Training School

Criteria: Minimum four years general education
Three years general nursing
Minimum two years nursing practice
Language: Arabic
Duration: 12 months
Course includes: Theoretical obstetrical lectures (54 hours)
Practical demonstrations (120 hours)
Antenatal clinic sessions (96 hours)
Practical Hospital training (960 hours)
Domiciliary deliveries - 15
Hospital deliveries - 10

Examination: written examination
Theoretical
Practical on model and antenatal patients
Further course: 12 months course to become health visitor, midwifery tutor and administrator
Licensing body: Usually employed by government in hospitals under doctors' supervision or occasionally licensed by Central Board of Public Health for private home deliveries
Scope of Work: Normal deliveries in hospital
Detection of abnormalities and referral
Minor procedures (e.g. episiotomy)
Injection, intravenous fluids and drugs under doctors' instruction
Antenatal and postnatal care
Care of newborn

C. Institute of Midwifery (Sister Midwives)

Criteria: 12 years general education (secondary)
3 years nursing college
2 years practical experience
Duration: 12 months
Course includes: Theoretical obstetrics (60 hours)
Practical demonstration (60 hours)
Antenatal sessions (96 hours)
Practical Hospital Training (960 hours)
Domiciliary deliveries - 20
Hospital deliveries - 20
Examination: Part I: 2 written papers
Theoretical exam
Practical on antenatal patients
Part II: Oral exam
Clinical on antenatal patients
Postgraduate courses: General administration and supervision
MCH and family planning
Tutor course
Care of premature babies
Licensing body: Usually employed by government and placed in charge of midwifery wards, or a Midwifery Tutor under doctors' supervision. When in private practice, licensed by the Central Board of Public Health
Scope of Work: In charge of wards and obstetric departments
Normal deliveries with referral of abnormalities to a physician
Give treatment under doctors' instructions including intravenous drugs
Care of antenatal and postnatal patients
Care of newborns
Supervision of medical students and midwives while doing practical midwifery

4. Information and Supervision in the MCH System

Information systems for MCH are intended to provide information on the health conditions of the mothers and children using the services, to aid supervision and the evaluation of health activities, and to serve as a basis for simple applied research.

Basic components are registration, reporting, follow-up and evaluation.

a. Registration

The village midwife or trained TBA registers activities carried out by her in the community; mostly a record of births and deaths. Some keep daily attendance books and child records. The CHW has very definite registration functions and a variety of forms to be completed, including a birth register and child records.

Referral may be from the midwife to the CHW but frequently the CHW is bypassed for the health visitor at the Health Center if it is accessible.

b. Reporting

At the village level, the midwife reports any unusual delivery problems, infectious diseases in mothers or children to the CHW. The CHW has a monthly report form that summarizes his activities. Activities related to MCH that are reported by the CHW are the births and deaths, child records (birth to age 5), and the promotive and preventive care activities such as health education, etc.

c. Follow-up and Evaluation

The design of the system if carried out properly provides information for follow-up and evaluation of PHCP activities at the district level by the Medical Inspector and at the provincial level by the Assistant Commissioner for Health.

The Information System as it Functions

Maternal-child health statistics are collected at the various levels of service delivery. Because of the decentralization in the MOH with the responsibility for implementation at the province level, service statistics are available at that level in the department of the Assistant Commissioner for Health.

Standard MCH reporting forms are used at the dispensary and health centers. Statistical clerks are located in the health center complexes for compilation of data which is then sent to the provincial level.

At the village level, the trained midwife transmits a summary of her activities to the higher supervisory level. She gives the number of births and maternal deaths by sex and other pertinent data related to the deliveries she has attended.

At the present time there is no analysis and feed back of information when the data have been collected.

MCH coordinators at the provincial level will promote better recording and reporting procedures through the refresher and reorientation courses. Courses for provincial and upper level health officials will include methods of using information. The ultimate objective is to use the data to identify specific areas of need so that appropriate programs can be developed.

Supervision Within the MCH System

The health visitor is in charge of antenatal, natal and MCH services. She is responsible for training and technical supervision of village midwives. She is based at the midwifery training school or health center.

She visits each midwife at least twice a year and she is responsible to the Medical Inspector and/or Medical Officer.

A medical assistant is in charge of the PHC complex - the PHCUs and the dispensary in which he works. Each PHCU is to be visited a full day every two months. He checks on the activities of village midwives on behalf of the health visitors. He reports to the Regional Medical Assistant, Medical Inspector and/or Medical Officer.

The Assistant Commissioner for Health is the chief for all health services in the province and is responsible for the administration and planning of health services through the provincial, regional, district and rural health personnel. He visits each facility once a year. He reports to the Director of PHCP in the MOH. He is a member of the Province Council and advisor to the Commissioner of the Province on health matters.

In the PHCP, supervision of the village midwife is done by the health visitor or the medical assistant. Actually such supervision is rare and there is little or no periodic assessment of her functioning. Lack of vehicles is a major constraint but other factors such as lack of enthusiasm or motivation, inadequate supervisory skills may contribute to the lack of supervision.

The project will address this problem by providing reorientation or refresher course for health visitors with an emphasis on the elements of supervision.

The vehicles being provided to the training centers will serve a dual role - to provide field experience for trainees and transportation for the supervisors.

5. Nutrition

The Nutrition Division of the Ministry of Health was established in 1966 with support from FAO and UNICEF. The staff consists of the Director, two additional physicians, three social nutritionists and about 30 assistant nutrition officers (graduates in home economics, Ahfad College for Women). The Division has four units: preschool nutrition, clinical nutrition, social nutrition and laboratory.

In 1972 nutrition units staffed by health inspectors trained in nutrition were established at the Provincial level. Three of these Provincial Nutrition Units still function in Kassala, Gezira and South Darfur. At Port Sudan a public health inspector serves half-time as nutritionist. At present, there is only one nutritionist in the Southern Region.

a. Interministerial Roles

The Ministries of Education, Agriculture and Social Welfare play a role in nutrition. The MOE has a Nutrition Division and provides training of home economics teachers, nutrition educators for Adult Education and CD centers, and university level training in home science. With the assistance of international agencies and the Ministries of Health, Agriculture and Information, local governments, higher education institutions, and political and social unions, the MOE carries out a School Gardening-Nutrition Education Program. Established in 1964, the program provides training for village guides, rural women, social workers, cooks and kitchen workers for boarding schools, and teaching curricula and educational aids. The activities have been extended to include eleven provincial centers and 118 subcenters in Northern Kordofan, Gezira and Khartoum Provinces.

The Ministry of Agriculture has established a Food Administration Dept. which collects information on production and availability of food but is not involved in nutrition activities. The Agriculture Extension Service/MOA employs women trained at the Shambat Institute of Agriculture in food and nutrition (3 years).

The Ministry of Social Affairs carries out nutrition activities through its community care centers for adults, nurseries and kindergartens where health and mid-day meals are provided.

Several voluntary agencies provide important nutritional services usually in collaboration with health and other governmental institutions. Examples are the Catholic Relief Services' nutritional demonstrations in child health clinics.

b. Nutrition Problems

It is generally recognized that there is a widespread problem of severe malnutrition among certain segments of the population, especially infants and young children. The causes have been identified by national experts and include:

- environmental influences (unsafe drinking water, poor sanitation),
- dietary patterns influenced by culture, traditions, economic and social status,
- availability of foods to the consumer (production and distribution),
- lack of understanding of proper selection, preparation and storage of foods, and
- late weaning practices (commonly at 2 years) without supplemental foods.

Regional epidemiological charts prepared by WHO indicate two major nutritional problems--protein calorie-malnutrition throughout the western half of Sudan, and several goiter pockets mainly in the central area of the country. Adequate statistics, however, are not available.

The MOH has carried out studies on food consumption patterns, nutritional status, growth norms, and nutritional content of local foods. Investigations in Khartoum Province indicate a greater incidence of marasmus than of kwashiorkor (e.g. greater problem of caloric deficiency than protein deficiency).

The extent and severity of the nutrition problem in Sudan has not been adequately assessed on a nation-wide basis. A prerequisite for implementation of nutrition programs is collection of appropriate data regarding food consumption patterns and the existing nutritional status of vulnerable segments of the population in different parts of the country. More needs to be known about the relation of distribution and production to nutrition.

c. National Program Strategy

The National Food and Nutrition Seminar held in 1973 gave significant impetus and direction to nutrition developments subsequently undertaken by the Government of the Sudan. This seminar reviewed existing programs of the Ministries of Health, Education and Agriculture and recommended future plans of action. A Nutrition Strategies Workshop held in Wad Medani in 1978 was also very successful in bringing concerned agencies together to analyze problems and plan strategies. One tangible outcome is a manual on nutrition education.

The National Health Programme and the Regional Primary Health Programme Plans call for a mechanism among the Ministries of Health, Education, Agriculture and Social Affairs to deal with nutrition matters. In the past,

attempts to form such a coordinating body have failed. The plans outline a strategy to reduce protein calorie malnutrition in children ages 0-4 by 1984. The strategy is to be promotive, preventive and curative. It involves the concerned Ministries in a concerted effort at the community level.

d. Program Implementation

1) Village Level

At the village level, nutrition education is one of many tasks assigned to the community health workers and the village midwife. Their training includes diet counseling; detection of malnutrition and referral to hospitals; and procedures for re-hydration of infants. A study carried out in Khartoum Province showed that 7% of the mothers had received advice on nutrition form the midwife. The majority had learned form their own mothers. The government trained midwife is instructed to advise the pregnant and lactating mother on her diet and encourage breastfeeding (which in 99% of the cases is the practice anyway). The CHW promotes good diets, environmental sanitation, safe water supplies and immunization, all of which are recognized as of paramount importance to nutritional status of the young child in the Sudan.

The dispensary nurse and other staff also teach good nutrition, demonstrate weaning foods and refer children with malnutrition to hospitals. The health center has a more active program carried out by the health visitor and women assistants. It includes weighing, charting growth, counseling, weaning food demonstration and referral to hospitals of children with malnutrition. The pediatric wards of district hospitals treat malnutrition and educate mothers of all patients in the ward about proper diet for children.

Village school teachers have as part of their programs of nutrition education the establishment of school gardens where students learn to grow nutritious goods generally absent from the local diet.

2) Province Level

At the Provincial level, three Nutrition Units are established and operating in Gezira, Kassala and Red Sea Provinces. The goal is to establish nutrition units in each province by 1981. The units are staffed by home science graduates of Khartoum University (only two re-trained health inspectors still hold nutritionist posts). The main function of these units is to carry out nutrition education through health centers in the Province. Also, nutrition data are collected and surveillance activities are carried out. Health personnel trained at the provincial level are instructed on nutrition and their job responsibilities in this regard.

3) National Level

At the national level, the Nutrition Division of the MOH has a Director, Deputy Director and staff of 81. It s responsibilities include nutrition surveys, social nutrition, provincial nutrition, hospital nutrition, pre-school nutrition, clinical research and laboratory studies.

The Division employs and places nutritionists in the provinces and provides technical supervision. It shapes national policies on nutrition such as those focused in the National Health Plan and the Primary Health Programmes. It coordinates nutrition policy among the other concerned ministries through interministerial conferences and meetings. It provides technical direction and coordination within the MOH on nutrition matters and collaborates with universities and research bodies concerned with nutrition matters.

e. Constraints to Improved Nutrition

1) Village Level

At the village level nutrition education is the main intervention strategy . Efforts are fairly well focused on the high priority goal of reducing protein calorie malnutrition in children ages 0-4 by 1984. Coverage is terribly restricted, however, by lack of personnel and infrastructure. Although village midwives' practice everywhere, the majority have not had the benefit of training. The standard midwife kit does not include scales or any other equipment that would aid them in carrying out this task.

At the village level, there is need to improve both coverage and quality of the nutrition education programme. There is also a need to try out simple methodologies to determine whether PHC workers can apply them and whether they are effective in improving nutrition practices of rural people. PHC workers also need educational aids, scales (which are found in health centers but not usually in sub-centers), weight charts (not generally supplied even at the health center level), posters and handouts (not generally available) and nutrition education manuals.

There is some question about the effectiveness of the male CHW's in guiding women in nutritional matters. There is also some question about whether these workers can be taught such simple procedures as weighing, charting growth and other surveillance methods. A study by the Nutrition Division in Gezira and Kassala Provinces showed health visitors were not accurately carrying out these procedures and had to be re-trained (3 day course).

At the provincial level there is a need to strengthen the nutrition component of the health programme if national programme goals are to be achieved. A plan to establish nutrition units in the Provinces not currently staffed with nutritionists should consider the employment of women from those provinces to study home sciences at Khartoum University.

The trainers of health personnel in the provinces also lack the necessary nutrition background. Curricula do not generally include even the standard content recommended by national experts (e.g. curriculum of the Sennar Midwifery School is contained in a notebook hand written by the instructor. Although there are anatomical charts and models available for instruction, it appears that nutritional teaching aids are not available to the instructor.)

Supervision of nutritional activities from the provincial level suffers from the same constraints as other programmes - shortages of staff, inadequate transport, and lack of guidelines and materials. The midwifery inspector for example is supposed to make rounds every three months. This is not feasible because of present constraints on transport, lack of travel allowances and other work commitments.

2) National Level

At the national level the Nutrition Division has successfully shaped some MOH policies on nutrition. It has however, established a vertical nutrition service. Apparently problems have been encountered in integrating these services into other MOH programmes as well as those of other concerned ministries. For example PHCP instructional manuals being prepared by the training division are not technically acceptable to the Nutrition Division which has not been consulted and apparently has no authority over them.

Nutrition planning is seen as a major need. Attempts at organizing an Inter-Ministerial Coordinating Body have failed. However, considerable success has been achieved in bringing concerned groups together for exchange of ideas in national meetings and seminars.

The goal of establishing provincial nutrition units nationwide is admittedly very ambitious considering available resources and current constraints. Alternatives, however, have not been sought. The matter is related more to absence of trained personnel rather than lack of funds.

On the other hand, the Division wants to extend its research activities to other provinces. Although the personnel for this type of work is available, the funds and other necessary resources are not.

f. Nutrition Strategy

A strategy that needs to be implemented as early as feasible is the training of all levels of provincial health personnel in nutrition and their role in it. A seminar for provincial medical personnel is under consideration.

There is also a need to improve the collection and analysis of nutrition data on the provincial level. In addition, area specific studies to define nutritional problems, including local practices and food availability should be performed. Only then can the programme and training of primary health care workers be made more appropriate to local problems.

A workable system for supervision and evaluation of nutritional efforts at all levels obviously needs to be developed. The system should be integrated into the health delivery system.

Commodities for nutrition work should be supplied to,and distributed by, the provincial health system. This includes scales, teaching aids, weight charts, small reference libraries and office equipment. Also transport for supervisory staff is needed.

At the national level, there is a need to strengthen the nutritional program. Nutrition planning can and should be encouraged through suppoert of national conferences, following up the work accomplished in 1978. Short-term technical assistance and conference support services should be provided.

Small fellowship grants to support studies by competent Sudanese researchers in the nutrition and social science fields could provide data on local nutrition problems needed in improving nutrition training and programming. Support should be given to in-service training courses for health personnel and related workers concerned with delivery of services at the village level.

6. Health Education

a. Organization

The MOH has recently upgraded its health education unit to Department status. The new director of the department has just returned from post graduate studies in health education and health sciences at Johns Hopkins University (MPH degree). He has a staff of 12 qualified technicians in administration, graphics, photography, social sciences, communications and materials reproduction. A printing press provided by UNICEF has the capability to serve the entire health services of the MOH and the provinces.

b. Objectives in Support of Health Education Department PHCP

1) Integration

Although the department is still in a "start-up" stage, a plan has been proposed for support of the PHCP. The first objective is to introduce educational components into all health services, especially the training programme for CHW's and other primary health care workers. The educational input would be based on needs identified at the village level upward. The Department staff would participate in curriculum and development for training of CHW's, VMW's and others to improve skills in working with the community. Educational materials needs for training or service would be designed locally and produced centrally.

2) Staffing

The department proposes that each province select a candidate from health visitor, medical assistant, or sanitary overseer categories for university training leading to a diploma in health education and social work. Eleven students now completing a three-year course in extra mural studies at the University of Khartoum will be assigned to the Department, three to headquarters and eight to the provinces. The latter will be administratively responsible to the Provincial Assistant Commissioner for Health, with technical assistance to be provided from the Department.

3) Village Leadership

Another activity of the Department which will strengthen delivery of rural health services is the training of local people to study and solve their own problems. The project is designed to bring together in each Province various community leaders for a series of seminars on a wide range of subjects they select. One such subject has been cultural and social attitudes of health personnel affecting delivery of services. This programme has been in progress in Khartoum Province for two years, but is hampered by lack of transport required to bring the people together. Most participants cannot afford to pay their own way.

7. MCH/Family Planning in Sudan

There is as yet no official policy on family planning. Unofficially the GOS supports family planning as a means of promoting maternal and child health through reduction of the risks of high parity and the resultant effects on the health and welfare of the child. Thus family planning is considered child-spacing for maternal-child health rather than limitation of births for population control.

The population of Sudan is considered low in relation to the country's size, but the present growth rate of 2.5% may adversely affect economic development by creating a high dependency ratio. Support is being given to integration of family spacing into maternal-child services.
(See Health Sector Assessment Report, Part V for additional details.)

MCH/FP activities continue to expand with increasing Ministry of Health involvement.

A Maternity Centered MCH/FP program funded by WHO/UNFRA was implemented in 1976 for training and delivery of services in Khartoum, Khartoum North and Omdurman. During the project period ending December 1978, services were provided throughout the urban areas of Khartoum. Numerous physicians and nurses were trained in MCH/FP - in country and through various Office of Population-funded training institutions in the U.S.
(See Family Planning Personnel Resources page C-22, C-23).
A phase II proposal to continue this project has not yet been acted upon but many of the activities continue.

The following information is derived from the MCH/FP evaluation report by Leonard Robinson, Jr. DS/POP/AFR, April 24-28, 1979.

The Sudan Family Planning Association (SFPA)

Supported through annual grants from the International Planned Parenthood Federation (IPPF), the SFPA provides MCH/FP services and information/education in 30 Ministry of Health (MOH) facilities throughout Sudan, using trained physicians and nurses. Through a special grant provided by the Pathfinder Fund of Boston, the Association recently trained additional physicians and nurses in MCH/FP delivery, thus enabling them to extend services to six additional rural-based clinics. SFPA has also written and distributed a "Family Planning Handbook and Manual for Doctors" (English version) and one for Nurses (Arabic version) 1977-78 (over 4,000 copies distributed). In addition, they published a pamphlet prepared by the Grand Mufti (Islamic Religious Leader) entitled "Islamic Religion and Family Planning". This latter publication has been widely read by Sudan's religious community and leaders, and is supportive of MCH/FP.

The Association is currently administered by Dr. Attabani, founder and president (Board) of the organization. Both of the Association's major contributors, IPPF and Pathfinder, receive funds from AID's Office of Population.

The Sudan Fertility Control Association (SFCA)

Sudan is one of only 2-3 countries in Africa actively engaged in biomedical and contraceptive research. The SFCA was founded in 1975 by a group of dynamic and energetic Sudanese OB/GYN's who have long been a force in the MCH/FP movement, and who were interested in compiling and analyzing data on the effects of contraceptive use and other related techniques, on Sudanese women. Funded through core support and research grants from the Association for Voluntary Sterilization (AVS) and the International Fertility Research Program - both grantees of the Office

of Population, SFCA is currently conducting research studies on incomplete abortions, the effects of oral contraceptives on Sudanese women, a comparison of two different types of IUD's used in Sudan, sterilization (only in medical cases) using the colpotomy technique, maternity care monitoring, and lastly, a survey to assess male attitudes towards contraception and voluntary sterilization (5,000) informants.

The SFCA is legally registered and has a membership of over 70 physicians. The activities of the Association are of public record and were recently described in the official Sudan News Agency's Weekly Review.

Contraceptive and biomedical research is important for Africa, given the paucity of such data. It is expected that SFCA will play a major role in transferring its acquired experience, technology and expertise to other African countries in the near future.

Faculty of Medicine, University of Khartoum - Soba MCH/FP and Nutrition Project

Supported through a grant from Family Planning International Assistance (FPIA - another AID Office of Population grantee), this program is administered by the Faculty of Medicine's Pediatrics and Child Health Department. Designed to provide MCH/FP and nutrition services to the rural inhabitants of Soba and Butri villages, the basic objective is to improve the health of mothers and their children through child-spacing and nutrition inputs. According to Dr. Mohamed Ibrahim, project director and chairman of the Pediatrics Department, the program has dramatically lowered the infant mortality rate and women have been motivated to adopt family planning services (over 563 acceptors in an estimated population of 2,000). Designed as a service delivery and research project, Dr. Ibrahim will analyze, tabulate and publish data on this project, for possible replication in Sudan and application in other African countries. It is expected that FPIA will support this aspect of the project, as well as Dr. Ibrahim's contemplated expansion of services to other villages in the district.

Other MCH/FP Related Activities

(1) World Fertility Survey - Sudan.

This ongoing activity is administered by WFS and the Sudan General Statistics Department. There were no preliminary data available to review. The WFS is supported by the Office of Population.

(2) Mapping Workshop - Bureau of Census.

The Sudan Government has agreed to host a Mapping Workshop in housing and population, to be held in July in Khartoum, with the Bureau of Census. Participants from other African countries are expected to attend.

(3) Proposal by Dr. El Tom

Chairman of the Department of Community Health, Faculty of Medicine, University of Khartoum, has submitted a project proposal to AID's Office of Population entitled "Developing, Testing, and Demonstrating the Community Based Delivery of Family Health, Nutrition, and Family Planning Services in Sudanese Villages".

Designed to provide MCH/FP and health services through an integrated "pilot" approach, it is significant that the MOH has reviewed this proposal and has indicated its concurrence to AID/Khartoum, the first such time the MOH has officially commented on and approved a project funded through an outside source. Although Dr. Modawi of the MOH does not feel that the project is totally "pilot" in scope (he stated that it is merely an extension of what the MOH and others are already doing!), it will mark the first time that nurse/midwives have been permitted to offer MCH/FP services directly. Heretofore, only physicians and nursing sisters have been allowed to administer MCH/FP in Sudan. I would recommend that AID/Khartoum approve this project for implementation. It will serve to expand MCH/FP in Sudan; it has the MOH's approval and it may serve to provide Dr. Mahmoud with an important channel to continue her involvement in and support of MCH/FP.

Recommendations on Continued PVO Assistance for MCH/FP Activities

Private organizations based in the Sudan and supported by outside private agencies, (most funded through the Office of Population), have obviously played a key role in supporting MCH/FP actions in the Sudan. Without their input, there would be no entrée for expanded assistance through the Ministry of Health. In the case of the Sudan Fertility Control Association, an important contribution is being made in the field of biomedical and contraceptive research; no other fertility control association exists in sub-Saharan Africa. The activities of this Association and other private entities in Sudan should receive continued support from AID and any other source, but they should be coordinated and properly channeled to avoid duplication and unnecessary competition. For the moment, it appears that such coordination will rest in the Ministry of Education, but I expect that when the MOH clearly establishes its professionalism in MCH/FP delivery, coordination and overall MCH/FP program control will be handed over to an appropriate department within its Ministry. Many physicians and nurses have been trained through the auspices of AID funded and assisted programs; the talent is clearly available - what is now required is proper organization and commitment from the top.

8. Family Planning Personnel Resources

At present a substantial number of physicians and Sister midwives have had training in various facets of the programme of chil spacing.

Training	Physician	Sister Midwife
1. PIEGO (Johns Hopkins and St. Louis)		
a. Nursing	0	8
b. Administration and Management	9	0
c. Laporoscopy	20	0
d. Infertility	2	0
2. Planned Parenthood (Chicago)		
a. Administration and Management	8	1
b. Adolescent Fertility	4	0
3. Master Public Health Degree in MCH (Johns Hopkins)	3	0
4. Training of Trainers (Singapore)	4	0
5. Population Council - Administration	3	0
6. Program at Chapel Hill, N.C.	1	2
7. Margaret Sanger Planned Parenthood	0	20
8. Marry College - MCHFP	0	6
9. Study tour in Asia (Pakistan, India, Thailand, Singapore)	11	0
10. Study tour in United States	2	0

(Total numbers do not indicate number of personnel trained because some personnel have participated in more than one program.)

It can be seen from the chart above that both long and short term programs have been available to promote the combined MCH/FP services.

Location of Physicians Who Have Had MCH/FP Training

Location	Number of Physician Gynecologists
Khartoum Province	4
Omdurman Hospital	5
Khartoum North	4
El-Bulick Hospital	2
Health Centre	1
Gezira Province	
Medani Hospital	3
Hospitals	2
Blue Nile Province	1
Blue Nile-Singa Hospital	1
Kordofan - El Obeid Hospital	3
Kassala - Halfa El-Gadida Hospital	1
Red Sea - Port Sudan Hospital	2
Northern - El-Daba Hospital	1
Nile - Atbara Hospital	1
White Nile - Dewem Hospital	1
- Kosti Hospital	1
Faculty of Medicine	7
HQ - MOH	1
Pediatrician	1
Private Obstetrician	1
Medical Officers	3

The listing above shows that the majority of trained physicians are in the urban and densely populated areas, working primarily through maternal care in hospitals. In the Khartoum area, some of these physicians also work as consultants at the Health Centres and provide FP and Infertility services. A considerable number of patients have been treated successfully.
Oddly enough, these mothers who have or are being treated for infertility often provide the impetus for multitiparous mothers whom they meet to seek child spacing. The program thus balanced gives credibility to the mother-child health approach to family planning.

At the present time ten of twelve provinces in the North have physicians trained for FP, and with some physicians now away in study courses it is expected that all provinces will have such personnel by the end of the year.

It should be noted that FP is usually the responsibility of the gynecologist/obstetrician. Nurse-midwives, though trained, are not permitted to function independently but must always work within the medical structure. With the exception of two midwives in an MCH/FP project and one in the health visitor school, all nurses are working in hospitals.

In the entire South, there are only two physician gynecologists, neither of whom has had FP training. A health visitor in Wau and a Sister nurse-midwife in Juba have had training but there is no official support for the service, thus, FP counselling or services are provided as an adjunct to other MCH services.

9. Maternal Child Health in the Southern Region

Background

There are now two obstetrician-gynecologists in the entire Southern Region, one at Wau in Bahr El Ghazal Province and one at Upper Nile Province. Consultant services for maternal care are obviously limited. There are no pediatricians in the South. Medical officers in the province and district hospitals, midwives based in the hospitals, health centers, and in some dispensaries deliver maternal care to a small segment of the population. Most of the care is curative in nature when given in hospitals.

Health centers, as well as some dispensaries, deliver ambulatory maternal and child care services. Antenatal and child care services are available at regularly scheduled clinics. There is no cold chain and so no immunizations are given. Some food demonstrations and discussion of food habits take place but the emphasis on nutrition is limited. Health education is minimal. No poster type material is available here.

Considerable maternal child care services are delivered through private voluntary organizations. Scope of services varies by location. Clinics and dispensaries are staffed by expatriates. Mobile health units with outreach operate in two locations. Some PVO's are involved in training village midwives and TBA's. Local women have been trained to assist with and teach child care in their neighbourhoods. However, coverage is limited. Without the PVO and expatriate help, the GOS/RMOH infrastructure reaches very few people.

There is one nutritionist and one health educator in the region, neither of which is located at the central level so their impact is limited to the area in which they work.

AMREF has a Public Health Nurse-Midwife working with the midwifery training programme in Juba. She is responsible to the Director of PHCP (Southern Region) and to the Medical Officer (AMREF). Her duties include training in the tutor and CHW programmes, refresher and reorientation courses, reporting activities, and field work in MCH and nutrition.

Regarding MCH activities in the PHCP, the following quote from the "Seminar on Primary Health Care Programme in the Southern Region - Juba, 3-7 January 1979" describes the situation well:

"There was little evidence of this. Culturally men are not accepted for maternal care. Even in the field of child care and nutrition, efforts to follow-up children were not seen. CHW's felt the need for village midwives in their areas".

It seems obvious that the PHC cannot be expected to play more than a very minor role in the delivery of MCH services. The expansion of training opportunities for village midwives and TBA's is necessary. The development of an entire infrastructure, however, is also necessary if MCH is to be available to the majority of the population.

10. Traditional Birth Attendants in Northern Sudan

Traditional birth attendants are widely accepted by local communities and their services utilized. It has been estimated that 76% of the deliveries in the rural areas are done by TBA's.

Estimated Deliveries by Trained Midwives and TBA's in Northern Sudan

Province	Delivered by Trained Midwives	Estimated Assistance by TBA
Khartoum	73%	27%
Blue Nile	17%	83%
Northern	17%	83%
Kassala	20%	80%
Kordofan	8%	92%
Darfur	7.7%	92.3%

Table taken from paper, "Training of Traditional Birth Attendants Program" prepared by Dr. Osman Modawi, Director General, Obstetrics and Gynecology and Project Director, MCFP.

From the above table it can be seen that trained midwives are providing less than 25% of maternal care. Since most women in northern Sudan have been circumcised, and thus require assistance during delivery, it can be assumed that all deliveries not performed by trained midwives have been attended by TBA's.

Constraints to providing trained midwives to the women of Sudan include:

a. Sudan is vast and sparsely populated. Population density is quite low and an inordinate number of trained personnel would be required to cover all areas.

b. Insufficiency and maldistribution of the health infrastructure -- the total number of all midwives is approximately 500*for a population of 17 millions and an average yearly deliveries of about half million. In addition, 18% of the population who are urban are served by 60% of the health infrastructure, leaving poor coverage for the rural and nomadic populations.

*Trained nurse-midwives

N.B. Information included in this section except "Strategies" obtained from various reports by Dr. Osman Modawi.

c. Deficiency of transport and communication -- Scattered small villages are not accessible because of poor or no roads and lack of transport. The area that can be served by a trained midwife is thus limited. In addition, in parts of the country during the rainy season travel is almost impossible.

d. Lack of funds for services -- Health services receive a small share of the budget and within the health budget itself preventive health services and MCH/FP have low priority.

e. Inadequate training of health personnel -- The annual output of all categories of midwives is less than 700. This rate cannot meet the requirements for total coverage within the six years of the National Health Program. In addition, there is an estimated annual loss of about 3% of the trained village midwives for the following reasons:

(1) attraction to urban life, marriage
(2) inability to replace or compete with the TBA
(3) limitation of number of deliveries and therefore limited income
(4) difficulty of transport discouraging coverage of neighboring villages

Three possible strategies to increase midwifery coverage are as follows:

(1) Increase the number and intake of the nurse midwife training schools -- This is an expensive solution but actually more inhibited by a limited pool of applicants than funds. Hospitals have been loath to give up nurses for the midwifery training.

(2) Reduce the training periods for both nurse midwives and village midwives -- This approach is not recommended because it entails a lowered standard. In the case of village midwives who are 80% illiterate, a shortened period could not be effected without diminishing practical field training and supervision which is essential to their safe practice.

(3) Train TBA's in short courses or on location wherever the administrative approval and available supervisory capability exists -- This type of training is being carried out in the Blue Nile Province and will be evaluated at the middle of the second year (1980). If deemed successful, similar programs will be carried out in the western provinces. The original "trial run" in Sennar trained seven TBA's for two months. Criteria for selection were as follows.

a) Literacy not a condition
b) Age 40-50
c) Physically and mentally healthy
d) Actual practice about 10 years
e) Recognized and accepted by her village community
f) Priority given to inaccessible villages and nomadics
g) Priority given to planned locations of the PHCU with no trained midwives

While these programs are stop-gap measures, they can and should be continued until better coverage of populations is effected.

11. Strategy for Including Traditional Birth Attendants in the PHCP in the South

A workshop was held in January 1979 to discuss the possibility of using TBA's for the delivery of improved maternal and child care. It has been recognized that it will be impossible to train enough village midwives to cover the population in the near future so an attempt to bring the TBA into the PHCP is being made.

The TBA is an indigenous member of the community who provides delivery and postnatal services to mothers. She may work voluntarily but most often she receives gifts in money or kind from the families she has assisted. She has a well-defined and accepted role in communities. Generally she is middle-aged or elderly.

TBA's come by their role through various ways, e.g., a family tradition, exhibition of natural skill after assisting at a few deliveries or by deliberate choices after having been themselves seriously ill and recovered. If their role is not threatened they are generally willing to cooperate with trained staff.

Care must be exercised in training the TBA. An official program is not suggested lest the TBA consider herself a civil servant. Furthermore, it is unlikely that an official program can be carried out because travel to a distant center or absence from the home and community is difficult or impossible for the TBA. For this reason, any training given should be at the local level on an individual basis.

Trainers ideally should be GOS/MOH Health Visitors or Nurse-Midwives. Given the paucity of such personnel in the Southern Region and the usual assignment of such personnel at the provincial level, it is clear that this approach cannot be taken. At the present time, some private voluntary organizations have begun training TBA's with the approval of the RMOH using their own personnel.

Criteria for selection of a TBA for training should be based on observation of her work, her ability to learn and her reputation in the community. Training then should be aimed at giving her competence to carry out selected tasks related to ante-natal, care during delivery and post-natal care.

A "midwifery kit" for the TBA should be simple and consist of supplies such as:
- a metal container
- scissors and clamps
- razor blade and cord ties
- Dettol antiseptic
- cotton
- iron tablets

Supervision should be carried out by the Health Visitor or any other MCH-trained staff. Most often her only contact will actually be the CHW. Efforts should be made to promote a working relationship between the two so that recognition of medical problems can be confirmed and proper referrals made when necessary. The TBA should report the number of births and any unusual occurrences to the CHW.

The value of attempting to use the TBA lies in the fact that she is there in the community performing such services already. Recognizing that much time must elapse before a sufficient number of village midwives are trained, training of TBA's should be carried out whenever the medical authorities give approval,as in the South.

Five private voluntary organizations have been given permission to go ahead with plans to train TBA's and village midwives. Local health visitors and provincial district authorities will be involved in the program. A UNICEF midwifery kit will be given to those completing the program. Trainees will be selected from those areas where supervision and support are available. While the RMOH favors institutional learning they have agreed to consider other training programs and later assess the performance of the trainees from such programs.

The very nature of this type of training precludes large numbers being trained. However, every single individual who has been trained contributes to better maternal and child care for the areas covered.

12. Infertility

The onset of involuntary infertility in sub-Sahara Africa seems to have been during the peak of colonization and the first World War. This period was characterized by disruption in tribal life, exploitation of African labor, introduction of new diseases by soldiers and dissemination of local endemic diseases to other areas through migration. These conditions are thought to have been factors in increasing infertility. It has been said that in some areas 40% of married women finish their reproductive years without having borne a child.

Since sterility is a condition in Sudan that has many social, cultural and emotional repercussions, gynecologists are often sought by women of reproductive age who have been unable to conceive. Blame is usually attributed to the female and husbands often use this reason to enter into multiple marriages.

While childlessness can be caused by pregnancy wastage and child loss, a major factor seems to be essentially primary infertility. Secondary infertility as a result of postpartum or postabortal infertility causing tubal occlusion is not uncommon where obstetrical and medical care are delivered under unhygienic conditions. Venereal disease, especially gonorrhea, has been implicated as a cause of infertility. More recently filariasis has been incriminated in both male and female infertility.

It has been observed that in some cases of childlessness, the male is at fault and this possibility should be considered in any discussions of infertility. Studies carried out in Khartoum and Darfur Province indicated that about 30% of the males seen suffered from azoospermia, with the majority giving a history of old gonococcal infections sometimes in their bachelor life with or without complications.

General infertility seems to be highest in urban populations, less in rural areas and especially high in some nomadic tribes.

It is very likely that infections play the major role in high infertility rates, possibly in association with some dietary factors. Related to the infection factor, the following measures can be taken:

- improving delivery care
- asepsis
- general hygiene improvement
- recognition and treatment of sexually transmitted diseases.

These are within the scope of the primary health care program with a well-trained community health worker. Control of endemic disease factors probably cannot be addressed too effectively without area-wide programs. If, in fact, nutritional deficiencies contribute to the problem, it would probably be too

complex and too difficult to assess and treat within this program. However, recognition and treatment of sexually transmitted disease is within the functions of the CHW and the subject should be given more than cursory attention in the curriculum.

Discussions of infertility should be a part of all training curriculum for the PHCP, but especially in those areas known to have high rates of infertility. Efforts should be made to impress upon the primary health workers that they do have control over some of the factors that contribute to this condition.

13. Female Circumcision.

Female circumcision in Sudan is intimately associated with tribal customs, superstitions and wrong concepts of religion. It is thought that the original intent of the procedure was to ensure chastity and female circumcision was considered less drastic than castration of the male. The custom continued as an "initiation" ceremony with cultural significance even to this day.

Focus on female circumcision as a social problem arose as a result of widespread publicity by the British press and reports in medical journals. A member of the British Parliament attacked the custom and urged the Sudan British Administration to prohibit it by law. Under the direction of a central commiteee, an intensive campaign was waged against the practice and leaders of society gave full support.

The medical front was the most effective group. British and Sudanese doctors investigated the magnitude of the problem, its distribution in Sudan, the different types of operations and complications. They reviewed the little literature that was available on the subject and documented their firsthand experience and observations. The result was a small simple pamphlet that was widely distributed. The government was advised to extend female medical training and services and to train more licensed midwives, health visitors and social workers.

In 1946 the Legislative Assembly passed a law making Pharaonic circumcision an offense punishable by fine and imprisonment. The Sunna or excision operation was considered legal.

The immediate effect of the law was that many girls were circumcised at an earlier age. The practice continued though clandestinely because many of the old grandmothers were not convinced by the propaganda campaign against the practice. In addition, practicing midwives had an economic interest in continuing the practice.

The operation is usually done at ages 5 to 8 by an old village midwife in the presence of a crowd of female relatives. Nowadays it may be done by a trained midwife.

Type I.

Sunna or Clitorectomy. It is the legal operation recommended by Islam and consists of excision of the glans clitoris with a small portion of the clitoris itself.

Type II.

The radical Pharaonic circumcision or infibulation that aims at closing or narrowing the introitus. Forced intercourse is impossible so it is thought that chastity is promoted and virginity assured.

Nc anesthetic is used. The girl is held down by her relatives and the midwife amputates the clitoris, and slices of the labia majora and labia minora are pared away. The amount of tissue removed and damage done depends on the midwife. Bleeding is profuse and controlled by digital pressure. The wounds of the two sides are brought into opposition by tying the legs together for 40 days. Some tribes use thorns inserted through the wound edges and held in place by thread wound around the thorn in a criss cross fashion.A match stick in the center of the wound develops a fistula for urination. The raw area is covered with cotton soaked in oil or saline. The match stick is removed for urination and reinserted until the wound heals. This operation was the most common type It is now illegal and prohibited by Islam. It is being replaced by Types I and III.

Type III

This is the most common type performed now - a combination of Types I and II. It is illegal but still performed by some trained midwives. The clitoris is excised with slices of the upper part of the labia minora. The labia majora are preserved leaving a slightly narrowed introitus. Local anesthesia is used and the wound sutured with catgut. Prophylactics are usually administered.

Type IV

Recircumcision or reinfibulation.
In the past this was done on widows and divorcees and occasionally after repeated child birth to narrow a patulous vagina.

Complications

Complications can be immediate to the procedure and/or long-lasting effects of the procedure itself. The following list summarizes complications noted in hospitals:

1. Hemorrhage
2. Shock
3. Injuries - urethra
   Bartholin gland and duct
   perineum

4. Infection - any pyogenic bacteria
   - gangrene
   - tetanus
   - infection extension to cervix, uterus and tubes
   - chronic pelvic disease
   - infertility related to infection.
5. Vaginal calculus
6. Vesico-vaginal fistula
7. Urinary complications
   - retention of urine may be due to granulation tissue or fibrosis
8. Keloid scars
9. Sebaceous cysts
10. Mycetoma (where thorns were used as stitches)
11. Psychological complications
12. Complications of marriage
   - difficult consummation
   - forced penetration causing perineal tears, dysparenia and vaginismus
   - failure of penetration
   - lack of sexual satisfaction
   - anal fissures and fistula due to anal intercourse
   - psycho-sexual aberrations
13. Effects on pregnancy, labor and puerperum:
   - cystitis
   - vaginitis
   - state of fear - inertia
   - retention of urine
   - obstruction to labor due to stenosis and scarring
   - fistula formation
   - perineal tears

NOTE: before delivery of the head, circumcision scar has to be incised. If the opening is not sufficient, additional lateral incisions may be needed. These incisions can be sutured after delivery but untrained midwives may leave the wound open or approximate the edges to heal by granulation. A secondary circumcision may be done.

(Clinical and other details derived from writings of Dr. Osman Modawi Senior Gynecologist, Director General, Obstetrics and Gynecology/MOH)

Female Circumcision - Present Situation

Discussion with Sudanese medical and midwifery personnel reveals that female circumcision continuesto be done throughout Northern Sudan and is likely to continue for some time. The very severe complications of the

Pharaonic type are not seen as frequently in Khartoum and the less mutilating types of procedure are being done in most areas.

Measures have been taken to reduce the practice. At one point, the Sunna type circumcision which is legal, was taught in midwifery schools on the premise that if a procedure was done, it should be done with the least amount of mutilation and in an aseptic manner. Now the schools no longer teach any technique and midwifery trainees are urged to discontinue the practice.

In the College of Nursing in Khartoum, the Dean teaches a course in Social Ethics in which she discusses female circumcision as mutilation and students are made aware of the psychosocial aspects as well as the clinical.

Despite these efforts in the clinical fields, it is known that the practice of circumcision persists - for sociocultural reasons because it has a ritualistic importance and economic reasons because it is a source of income for the midwife. Men continue to demand it of their prospective wives, and women continue to have it done for the same reason. Influential people in various places have defied tradition and there are clusters of women who have not been circumcised, but they are relatively few.

Time and education are the essence of the eventual solution of the problem. Attitude surveys being done now, some on university students, may identify the approach that must be taken in the education of the public. Knowing why segments of population still believe in the practice is essential to developing the strategy to eliminate it.

It would be counterproductive to focus on this problem in isolation when there are so many maternal problems to be addressed. Ultimately, it is a Sudanese problem, a problem which they are aware of and must be solved by them. In every discussion with Sudanese, importance of greater literacy is highlighted, especially educational opportunities for women and the passage of time. There are no quick solutions that can be imposed.

15. Suggested Topics for MCH-Related In-Country Training

1. Nature of the Community

a. Collecting data for health assessment.
b. Evaluating data to determine health needs.
c. Planning Health Activities based on assessment.

2. Nutrition

a. Assessment of nutritional status.
b. Use of supplements.
c. Production, preservation and storage of food crops.
d. Identifying and treating malnutrition.

3. Communicable Disease in your Community

a. Case finding - diagnosis and treatment.
b. Preventive aspects.
c. Immunization.

4. Planning a School Health Program

a. Who should be involved.
b. Activities planned.
c. Use of audio/visual aids, etc.

5. Techniques for Using Health Education to Improve a community's Health Status

a. Preparation of poster materials.
b. Strategic locations for visual materials.
c. Planning a community HE program.

B. Rationale for AID support to the MCH component of the health sector project.

Situation

According to the 1972/73 census, about half of the estimated 8 million women are in the reprocuctive ages of 15 to 45. Thus they are at risk for health problems related to pregnancy and delivery as well as the usual diseases that affect the general population. Malnutrition and anemia, hemorrhage, toxemia, puerperal sepsis, obstructed labor, hepatitis and other infections are factors in the high maternal mortality rate - 2 to 3 per 1000 live births as compared to 0.03 per 1000 in developed nations. High rates of infertility in some populations are most likely related to pelvic infections and diseases. In addition, the practice of female circumcision results in additional high risk complications in childbirth.

Fetal death is probably higher than the reported 1.08% due to under-reporting. These high rates may be due to virtually no prenatal care, low levels of literacy, lack of safe water, poor housing and generally unhygienic living conditions.

Infant mortality is estimated to be 140 infant deaths per 1000 live births although this figure varies regionally. In the urban areas where maternal care is more accessible, the rate is lower - between 60 and 80 per 1000.

According to a study at Khartoum Hospital, 17.9% of the newborns were low birth weight with 65% of the infant mortality in this low-weight group. The relationship between maternal health, maternal malnutrition and anemia and the incidence of prematurity and low birth weight is not coincidental. Leading causes of death among newborns in Khartoum Hospital were reported as:

- respiratory distress syndrome
- gastroenteritis
- congenital abnormalities
- cerebral hemorrhage

Causes of death for which statistics may not be available include:

- birth trauma, especially when traditional birth attendants use delivery methods that are inappropriate, damaging or toxic;

- tetanus of the newborn due to inadequate or no immunization, lack of asepsis in cutting the umbilical cord and its after care;

- septicemia due to incisions, inadvertent or otherwise.

The under-five child is especially at risk in the second and third years of life due to malnutrition, communicable and infectious diseases, parasitic diseases and accidents. Morbidity and mortality rates are thought to be quite high.

Low hemoglobin levels among a substantial portion of pregant women indicate a significant level of iron-deficiency anemia primarily due to a poor intake of iron, folic acid and vitamins. Adult malnutrition is most likely related to distribution and utilization of food, cultural and seasonal factors with economic factors impinging on all of the above. Child malnutrition frequently is a result of prolonged breast feeding with no food supplements, abrupt weaning practices, maternal deprivation, family size, repeated infections especially gastro-intestinal, social factors and lack of knowledge.

Malnutrition affects about 50% of all Sudanese children between the ages of 0-4 with the 1-3 years of age group being most affected.

The National Health Program formulated in 1975 emphasized areas of priority which included activities related to MCH but actually there is no clear identification of MCH in the Program. It seems reasonable as part of AID's health sector support to target this most vulnerable population group - mothers and children - for special consideration.

Delivery of maternal child health services is uncoordinated, highly fragmented, maldistributed with emphasis on the curative rather than the preventive and promotive aspects of health. There are several single purpose health plans involving MCH controlled by other ministries, such as Education and Culture and Information, whose primary focus is elsewhere. Coordination to eliminate duplication of efforts and neglect of certain areas has not been achieved.

Coordination for MCH in MOH has been hampered by the absence of a department with a director who has legal authority for developing policy and management responsibility for various facets of an MCH program.

The Minister of Health, recognizing this need, has planned the creation of an MCH unit and assigned a Deputy Director. This Director is abroad in a study program and will take charge of the unit when he returns. Because MCH activities are spread out through many single purpose programs in health, trying to achieve coordination and bring these activities into a cohesive program will require time and changes, especially in organization and management.

C. Recommendations

As a result of the situation analysis, a rational approach to solving some of the problems within the system has been formulated.

The previous section has provided the rationale for specific approaches to certain areas of need as identified.

A summary of the intended types of interventions follows:

1. Technical assistance for the organization and administration, and coordination of Maternal Child Health services and for the curriculum development and training evaluation in manpower development.

2. Pre-implementation survey to provide the information basic to the planning process for improved service delivery.

3. Construction of health facilities in selected areas of need.

4. Construction of training facilities fro various categories of workers involved in maternal child care, and for the tutor-trainers of these personnel.

5. Participant-training for sister nurse tutors, and nurse midwives to provide tutors and to improve the training programs.

6. Participant training for midwifery personnel to improve their program planning and coordination of activities.

7. Observation tours for health workers imvolved in MCH/PHCP to countries having similar programs to stimulate interest, enthusiasm and innovation.

8. Seminar/workshops tor health workers to improve the delivery of services within their programs.

9. Refresher courses for previously trained personnel to update their knowledge and skills to expand their scope of activities to include preventive health and promotional activities.

10. Commodity support for service and training facilities.

11. Vehicular support for training and service facilities.

Recommendation for Nutrition Component of MCH

MCH nutrition activities should utilize the knowledge and resources of the Nutrition Division of MOH. Patterns of food consumption and distribution, food habits and taboos as they impact upon the nutritional status of the mother and child should be provided to tutor-trainers so that appropriate nutrition content can be incoroporated into the curricula of all health workers in Primary Health Care. This nutrition content should be specific to the area in which the worker is intended to function.

Primary health care eorkers should be encouraged to organize community nutrition programs with the assistance of the Nutrition and Health education departments. Agricultural extension workers can be consulted for imformation about home gardening and appropriate methods for preparing, preserving or storing various foods.

Nutritional aspect of care should be defined and included on the record of activities kept by primary health care and other categories of workers and should provide for assessment of nutritional risk facotrs and appropriate dietary treatment or intervention and follow-up.

Provision should be made for monitoring infant and child growth by use of standard measurements. This can be done by simple graduated "bracelets", string, or other innovative methods. Underweight children should be referred for nutrition counselling. Food supplements should not be given without proper instructuon for use. Home situations should be monitored when an infant or child fails to thrive.

Posters donated by companies which promote only the sale and use of their products should not be used as visual aids. If such posters are desired for aesthetic reasons, they should be redesigned or appropriate content superimposed on misleading information.

These suggestions will be incorporated into the new curriculum for the expanded activities of the front line workers. They will be part of the refresher or reorientation programs for health workers already in service.

In the South there is a Nutrition Department at Yei staffed by a trained expanded This department will be involved in teaching the pronciples of nutrition to personnel responsible for training and supervision within the PHCP.

A pilot project involving the department, PHCP personnel and voluntary agencies working in the area will be investigated.

(See nutrition component within this Annex page 12 for more detailed analysis).

Recommendations for Family Planning Component of MCH

Family Planning should be completely integrated into the maternalchild health services - in governmental facilities, private clinics and programs run by voluntary agencies - and be made available to all who need and seek them.

Sufficient numbers and types of trained personnel should be made available to provide safe, effective and humane services.

Written policies and procedure manuals should be made available to all providers of services.

Quality of care should be assured and monitoring and evaluation components of the program should include both process and outcome criteria.

A coordinating mechanism should be developed to study the various FP projects being funded by foreign donors. Priorities should be set so that a proper mix of various types of projects are proposed with emphasis on those projects that impact on the rural and urban poor. Research in the field of MCH/FP should focus on studies that have a potential for improving the present activities or augmenting them. Projects paying honoraria to implementors anf consultants should be carefully designed so that programs will not collapse as soon as the honoraria are withdrawn with completion of the project.

Determination should be made as to whether the existing pool of MCH/FP trained personnel - doctors, midwives and nurses - have been given the opportunity and resources to use their FP knowledge.

Priority for future training should be given to those personnel who are willing to work in MCH/FP in the provinces, with the urban poor or in rural areas, At the present time, the majority of trained personnel are based in the Khartoum, Gezira areas and the University.

The project for community-based delivery of Family Health and Family Planning services proposed by the Department of Community Health, Faculty of Medicine, University of Khartoum in cooperation with the Center for Population funds. Cost analysis of service and research segments should be done at the conclusion of the project with special emphasis on the recurrent costs involved if the program can be replicated elsewhere.

The Soba MCH/FP and Nutrition project presently being funded through FPIA (an AID grantee) should continue and expand. It has demonstrated that providing primary MCH services at the village level over a period of time has decreased the number of

children requiring hospitalization. When first initiated, Dr. Ibrahim stated that about th three children were taken to the hospital by them after each clinic. Such situations have ceased and the villagers themselves feel they are "healthier". The nutrition education being given may be the basic factor.

Greater independence of function should be given to midwifery personnel trained for family planning. The present arrangement whereby all services have to be delivered by, or at least under a doctor's supervision, automatically excludes a large portion of the population who have little or no access to a gynecologist/abstertrician. In those areas where trained health visitors and sister midwives are available, it should be possible to screen patients, follow a regime set up by the gynecologists including monitoring and recording/reporting and thus extend MCH/FP services to a larger portion of the population.

These recommendations will be considered by the MCH technical advisors in their planning for the improvement of MCH services in Sudan.

ANNEX 3

MCH TASKS TO BE PERFORMED BY DIFFERENT CATEGORIES OF HEALTH PERSONNEL OUTSIDE HOSPITALS (SUDAN, OCTOBER 1979)

UNFPA

Function	Task	Category of personnel				
		M.A.	H.V.	V.M.W.	C.H.W.	V.V.
1. ANTENATAL CARE						
(a) Pregnancy diagnosis						
	- Case finding	+	+	+	+	+
	- Physical examination	+	+	+	-	-
	- abdomen, breasts					
	- gynaecological					
	- Pregnancy tests	+	+[1]	-	-	-
(b) Screening for, or identification of, high risk cases						
	- History taking	+	+	+	+	+
	- Physical Examinations	+	+	+	-	-
	- height, weight					
	- abdomen, eye inspection					
	- chest, heart					
	- blood pressure					
	- pelvimetry, manual					
	- Laboratory testing	+	+	+	-	-
	- haemoglobin			(albumin)		
	- urinalysis					
	- blood grouping					
(c) Health education during pregnancy		+	+	+	+	+
	- Child care					
	- Hygiene					
	- Nutrition					

M.A. = Medical Assistant
H.V. = Health Visitor, Ass. Health Visitor
V.M.W. = Village Midwife
C.H.W. = Community Health Worker and Rural Nurse
V.V. = Village Volunteers and T.B.A.

1) Trials recommended using cheap paper strips for pregnancy diagnosis in HC.

Function	Task	Category of personnel				
		M.A.	H.V.	V.M.W.	C.H.W.	V.V.
(d) Primary intervention during pregnancy, when immediate referral is impossible. Includes palliative treatment until referral.						
	- Nutrition intervention (including iron supplementation)	+	+	+	+	+
	- Management of cardiac failure	+	-	-	-	-
	- Management of moderate bleeding in early pregnancy	+	+	-	-	-
	- Management of emergency incomplete abortion	+	+	-	-	-
	- Treatment of moderate toxaemia	+	+	-	-	-
	- External version of breech	-	+	-	-	-
	- Management of abdominal pain, acute	+	+	-	-	-
	- Management of acute respiratory tract infection	+	+	-	+	-
	- Management of premature reputure of membranes	-	+	-	-	-
(e) Secondary monitoring of complicated pregnancy after first intervention						
	- Follow-up of treatment					
	- Screening for detection of recurrence	+	+	+	+	+
2. DELIVERY CARE						
(a) Monitoring of normal labour, including nursing care						
	- First stage					
	- Second/third stage	-	+	+	-	-

Function	Task	Category of personnel				
		M.A.	H.V.	V.M.W.	C.H.W.	V.V.
(b) Management of high-risk cases in labour or of complicated labour, emergency treatment and referral when possible	- Cord prolapse	+	+	+	-	-
	- Septic labour	+	+	-	+	-
	- Prolonged labour due to					
	- abnormal presentation or contracted pelvis	+	+	+[1]	-	-
	- uterine inertia	+	+	+[1]	-	-
	- Haemorrhage during labour	+	+	+	-	-
	- Eclampsia	-	+	+	-	-
	- Shock	+	+	+[2]	+	-
	- Retention of placenta	+	+	+	-	-
	- Postpartum haemorrhage	+	+	+	-	-
	- Suture of lacerations	-	+	+	-	-
(c) Management of newborn at delivery and first day of life	- Normal care and examinations (tie cord, rinse mouth and eyes, examine for malformations, etc.)	+	+	+	-	-
	- Asphyxia, resuscitation					
3. POSTNATAL CARE						
(a) Routine check of mother and child first week postpartum	- History taking	-	+	+	-	-
	- Assessment of nutritional status (mother and child), weighing of child					
	- Physical examination breasts, abdomen, newborn, etc.)					
	- Laboratory examinations (Hb, urinalysis)					
(b) Immunization of newborn (BCG)	- Case recruitment	+	+	+	+	+
	- Vaccination	+	+	+	+	-

1) Diagnosis and early referral whenever possible.
2) In field trials to study feasibility and safety of training VMW for

Function	Task	Category of personnel				
		M.A.	H.V.	V.H.W.	C.H.W.	V.V.
(c) Health education about:		+	+	+	+	+
	- Nutrition, breast-feeding					
	- Child care					
	- Growth and development					
	- Hygiene					
	- Family planning					
(d) Primary intervention in case of complication of mother, including emergency treatment and referral						
	- Nutrition intervention (including iron therapy)	+	+	+	+	-
	- Management of fever and abdominal pain	+	+	-	+	-
	- Management of fever and breast pain	+	+	+	-	-
	- Management of breast abscesses	+	+	-	+	-
	- Management of puerperal haemorrhage	+	+	+	-	-
	- Management of puerperal eclampsia	+	+	+	+	-
(e) Secondary monitoring of complicated deliveries or puerperal complications		+	+	+	+	+
	- Follow-up and supervision of treatment					
	- Screening for recurrence of condition					
4. FAMILY PLANNING						
(a) Promotional activity						
	- Motivation of community leaders, etc.	+	+	+	+	+
	- Individual case-finding	+	+	+	+	+
	- Information of groups	+	+	+	+	+

Function	Task	Category of personnel				
		M.A.	H.V.	V.M.W.	C.H.N.	V.V.
(b) Identification of "risk families"						
	- Case-finding and recording	+	+	+	+	+
(c) Primary provision of contraceptive method (at first contact for FP services)						
	- Oral pills	+	+	-	-	-
	- Injectables	+	+2)	-	-	-
	- IUD	-	+	-	-	-
	- Vasectomy	-	-	-	-	-
	- Tubectomy	-	-	-	-	-
	- Diaphragm	-	+	-	-	-
	- Other inert methods (condom, safe period, etc.)	+	+	+	+	+
(d) Continued provision of methods						
	- Oral pills	+	+	1) +	1) +	1) +
	- Injectables	+	+	-	-	-
	- Other inert methods	+	+	+	+	+
(e) Management of complications						
	- Management of minor side-effects	+	+	+	+	+
	- Management of bleeding	+	+	-	-	-
	- Removal of IUD	-	+	-	-	-
(f) Management of infertility						
	- Case-finding	+	+	+	+	+
	- Clinical examination					
	- Treatmen	-	-	-	-	-
5. CHILD CARE						
(a) Screening for risk cases and disease						
	- History taking, both child and family (socioeconomic, health and reproductive history)	+	+	+	+	+
	- Physical examination	+	+	+	+	+
	- nutritional status, height & weight					
	- birth weight (by observati · or weig					

1) if they are provided with check-list for contraindications
2) feasibility study of IUD training suggested in some areas

Function	Task	Category of personnel				
		M.A.	H.V.	V.H.W.	C.H.W.	V.V.
(a) Screening for risk cases and disease (continued)						
	- skinfold thickness[1]	+	+	-	-	-
	- head circumference[1]	+	+	-	-	-
	- abdomen	+	+	-	+	-
	- chest, heart(MA only)	+	+	+	+	-
	- eyes, skin	+	+	+	+	+
	- Laboratory examinations					
	- haemoglobin	+	+	-	-	-
	- albumin in urine	+	+	+	-	-
	- faeces (parasites, worms)	+	-	-	-	-
	- blood smear for malaria	+	-	-	-	-
(b) Monitoring of infants and children						
	- Health education to mothers (promotion of breast-feeding, hygiene, sanitation)	+	+	+	+	+
	- Nutrition education and supplementation					
	- Assessment of growth and development (growth charts)					
	- Assessment of development milestones					
	- Diagnosis of malnutrition					
(c) Immunization						
	- Check on, recruit new cases	+	+	+	+	+
	- Vaccinations	+	+	-	+	-
(d) Primary intervention in case of maldevelopment or disease						
	- Diarrhoeal disease	+	+	+	+	+
	- Urinary tract infection	+	+	-	+	-
	- Fever combined with:					
	- respiratory tract infection	+	+	+	+	-
	- abdominal pain					
	- skin rashes					
	- convulsions					

1) should be done only in special surveys

Function	Task	Category of personnel				
		M.A.	H.V.	V.M.W.	C.H.E	V.V.
(d) Primary intervention (contd)						
	- Malaria	+	+	+	+	+
	- Nutritional deficiency	+	+	+	+	+
	- Poisoning	+	+	-	+	-
	- Accidents with fracture, bleeding or loss of consciousness	+	+	-	+	-
(e) Secondary monitoring after primary intervention has been successfully carried out		+	+	+	+	+
	- Supervision of effect of nutrition intervention					
	- Supervision of development disturbances (somatic or mental)			-	-	-
	- Follow-up after disease					
	- Screening for recurrence of disease					
6. STAFF TRAINING AND DEVELOPMENT						
	- Giving in-service training (practical field training)	+	+	+	+	-
7. HYGIENE AND SANITATION (water supply, refuse disposal and latrine, community programme)		+	+	+	+	+
	- Advice on construction and/or maintenance of facilities					
	- Health education on the use and maintenance of facilities					
	- Inspection of constructions and their maintenance					

Function	Task	Category of personnel				
		M.A.	H.V.	V.M.W.	C.H.W.	V.V.
8. ADMINISTRATION AND MANAGEMENT						
(a) Management of staff						
	- Recruitment of new staff	+	+	+	+	-
	- Supervision, technical support					
(b) Management of supplies and equipment						
	- Projecting needs	+	+	+	+	+
	- Maintaining adequate supply					
	- Revision of standard list					
(c) Referral						
	- Arranging for ad hoc transport	+	+	+	+	+
	- Planning and maintaining transport facilities					
(d) Records/reporting						
	- Record keeping	+	+	+	+	+
	- Collecting of statistical data	+	+	+	+	+
	- Service statistics reports	+	+	-	-	-
(e) Evaluation	- local use of data	+	+	+	+	+
	- Evaluation of reports and worker's performance	+	+	-	-	-
	- Evaluation of patient care	+	+	+	+	-

ANNEX D

SOCIAL and ECONOMIC INFORMATION

Social Soundness Background

1. Identification of Beneficiaries

a. Rural Population

The Primary Health Care Program is designed to improve the health conditions of the vast majority of the Sudanese people in the ten targetted provinces who live outside the principal urban areas. This rural population suffers from a wide range of diseases including malaria, waterborne infections, malnutrition, gastro-intestinal diseases, and respiratory infections. There are several factors which contribute to the high rates of disease and unnecessary death in Sudan, but foremost among these are:

- inadequate medical care,
- poor environmental sanitation,
- inadequate supplies of drugs and equipment,
- poor food preparation and storage habits,
- general absence of preventive care,
- contaminated water, and
- insufficient childhood and maternal health services.

b. Women and Children

The PHC Program will specifically benefit women and children. Through the recruitment and training of additional CHWs, NCHWs and midwives, the rural health cadres will be expanded so that more people can be reached. Emphasis will be on MCH, nutrition and child spacing services which will be especially beneficial for women. In addition, these programs will provide women with:

- new and expanded curative services,
- preventive care,
- pre and post natal services,
- new homemakers skills in the care of children and the preparation of food, and
- information about personal hygiene.

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* This analysis was prepared by Margot Badran, under contract to USAID/Sudan and Jerry Weaver, USAID/Sudan.

Birth will become less risky as more midwives receive training in sanitation, hygiene and diagnosis. Information will be provided so that referrals to hospitals can be made earlier for women with potentially dangerous delivery problems. Better equipment to assist home deliveries will also be furnished to midwives.

c. Nomads

The nomads who move across vast expanses of northern and western Sudan following the availability of water and grazing land for their animals present an especially challenging problem to the health care system. Their movement makes the delivery of health care difficult. Their lifestyle offers little opportunity for members of the community to obtain enough formal education to qualify as members of the health cadre.

Under the PHCP, these two challenges will be met. Supplies will be delivered to dispensaries through the strengthened logistical support system. Moreover, under the commodities support feature of the project increased volumes of supplies will reach the outlying areas. As these supplies arrive at health facilities near the nomads, they will be sent via supervisory personnel out to the nomad community health workers. Resupply and visits to the camps will be made easier through bicycles, motorcycles and other means of transporatation provided under the project.

The issue of increasing the numbers of health workers within nomadic communities will be met by recruiting more young men and women into training programs. This will be done by changing the formal educational requirements to emphasize ability, commitment and sociocultural skills.

The building of additional dispensaries in nomad areas as well as increasing the number of training facilities will have both a short and long term positive impact on many presently underserved communities.

d. The South

While the program is national in scope, it is worth underscoring the South and its special needs. During the 17 year civil disturbance, many health facilities were destroyed. Large segments of the population were uprooted and many health workers fled from the fighting. In addition, the South has recently witnessed the immigration of peoples across neighboring international boundaries. All of this is further compounded by the lack of transportation and communications in the region, by traditional tribal and ethnic divisions, and by almost total absence of an educational infrastructure. Moreover, the health status of the Southern Region is worse than that of the overall country. Thus, the expansion of facilities, training and the logistical system, together with efforts to improve administration of the program have special significance for the South which contains most of the "poorest of the poor."

e. The Health Cadre

While the bulk of the assistance under this project goes to improving the delivery of preventive, curative and promotive services, attention is also given to strengthening the delivery system itself. Without the expansion and improvement of the health administrative system, the delivery system will not have the efficiency required to carry on after the end of the present effort. Consequently, in addition to recruiting and training many more health care workers, special attention will be given to improving the management, supervisory and analytical skills of upper and middle strata administrators. These men and women will receive in-service training, orientation in new management technologies and procedures, and support from a limited number of consultants. Thus, the health cadre itself, and through it the people of Sudan, will be a beneficiary of the PHC Program.

2. Prevailing Socio-Economic Conditions

a. Geographic

The Democratic Republic of the Sudan is the largest country in Africa with an area of approximately 2.6 million square kilometers, greater than all of Western Europe. The country is generally flat, consisting of broad clay plains, savannah, and desert, with some hills to the extreme south-east, north-east and west. The River Nile flows through the country from south to north. Most of the Sudan is

dominated by a tropical continental climate which merges into an equatorial type in the south and into a desert type in the north.

b. Ethnic/Cultural

The Sudan is marked by high cultural diversity seen by the fact that well over a hundred different languages are spoken within its borders. The population in the North can be divided into four groups:

1) the Nubian tribes north of the Nile;

2) the Hadendawa, Bisharin, and Beni Amir tribes of the Red Sea hills;

3) Arabized tribes of the central belt such as the camel-herding Kababish and Kawahla, and the cattle-herding Baggara and Ja'aliyin; and

4) remnants of earlier peoples such as the Nuba, the [illegible] and the Ingessana.

Although these all have their own languages, the common language of the North is Arabic. There are three main population groups in the South:

1) the Nilotes comprising the Dinka, Nuer, Shilluk, Anuak, Burun, Bor Balenda, Jur Shulluk, Acholi, Luango, Luo and Alur, most of whom live along the Nile basin;

2) the Nilo-Hamites including such peoples as the Latuko, Lokoya, Bari, Toposa, Boya Didinga, and Turkana who are mainly cattle herders; and

3) the Sudanic tribes falling into four classes - the Azande, the Ndogo-Sere, the Moru-Madi, and the Bongo-Baka of the southwestern region. The population of the south is Negroid or Negro. Although a dialect form of Arabic is widely spoken, English is a common language of the relatively better-off and better education, while many people speak only their tribal dialect.

c. Demographic

Of the Sudan's 17.3 million people, 32 percent are rural with 71 percent sedentary and 18 percent nomadic. The Central Region, including the capital, Khartoum, is the most populated and contains about one third of the total population. The Western Region is nearly as well populated while the third most populated region is the Southern Region. The North contains most of the nomadic population which is found mainly

in the Eastern and Western Regions. The South is overwhelmingly rural - 90 percent residing in rural areas. The national population is young with 44.5 percent under 15 years while 44.9 percent are between 15 and 44 years old. The overall growth rate is estimated at 2.5 percent.

d. Socio-cultural

North - Islam predominates in the Arabized north. The conservative male/female relations associated with most Islamo-Arabic societies are more pronounced in the east where the movement of women is more restricted. Eastern women do not typically participate in the socio-economic life of the community and largely live in a world of their own. These traditions are closer to traditions in the Arabian peninsula where, in fact, some of the tribes in the east have their origins. For instance, the Rashiada tribe preserve the custom of veiling. By contrast, women in the west have a marked degree of socio-economic participation in both sedentary and nomadic communities. Women in the villages of the west are active in crafts production, selling food and crafts in the market, engage in building construction, agriculture, etc. Nomadism is particularly marked in the east and west ranging from 18.4 percent to 35.7 percent of total provincial population, while elsewhere it ranges from nothing to 13.4 percent. Illiteracy is higher among the nomads - estimated to be 90 percent against 66 percent of the sedentaries.

The South contains wide cultural diversity more influenced by African than Islamic culture. Christianity and a variety of animistic religions are found. Male/female relations are less strict in general than in the north, and women are active in village and tribe socio-economic life and often make an important economic contribution to family welfare. Many make needed money through brewing, trading and food preparation. The extended family is prevailing in the South and political, economic and social loyalties and behavior are greatly influenced by primary associations and kin loyalties.

e. Health

Health statistics generally for the Sudan are inadequate. There is an inadequate picture of the prevalence of malaria, malnutrition, intestinal infection, infant mortality, maternal mortality and other indicators of personal and community well-being. From the few ethnography and epidemiological studies of specific communities we have, plus the observations of local and international health experts and the limited census data available, a picture emerges of endemic and chronic disease and disability, inadequate medical care for the vast majority of the rural population, as well as inadequate environmental sanitation and preventative public health measures. The figures reported in Table 1 should be taken as merely indicative of the nation's health status; areas in the

South and West have fewer resources and graver health risks and may be several times worse off than the national norm.

TABLE 1

Crude birth rate (per 1000)	49.0
Crude death rate (per 1000)	24.0
Infant mortality rate (per 1000 live births)	140.0
Life expectancy at birth (yrs)	48.0
Gross reproduction rate (%)	
0 - 14 years	45.3
15.- 64 years	52.1
≥ 65 years	2.6
Population growth rate %	
Total	2.9
Urban	5.0
Urban population (% of total)	12.0
Nomadic population (% of total)	10.9
Percent of labor force in agriculture	80.0
Percent of women in total labor force (excludes traditional agriculture)	10.0
Adult literacy rate	19.0
Population density per sq.km of total land	6.0
Population density per sq.km of agricultural area	47.0

Source: World Bank, World Tables, 1976, pp. 506-527
Ministry of Health, National Health Programming (Khartoum Univ. Press, 1975)

Traditional health risks are being compounded by new, often man-made, pathologies. In the central areas (Gezira Province, for example) plantation agriculture has exacerbated traditional health problems. The building of canals has caused the rise of (man-made) malaria and bilharzia (schistosomiasis). The latter could be effectively combated if the local custom of using the canals as sources of drinking water and repositories for homan and animal wastes could be corrected; yet little change in this practice is foreseen in the near term. Similarly, commercial agriculture has introduced a new health risk: pesticide poisoning. This grave threat to the workers and their families is under study, but it is difficult to see how current farming practices can be changed far enough to remove the present risks.

Preventative public health measures are inadequate in the rural regions. This is true across the board from food storage and preparation to waste elimination. In many places mild or controllable health problems are exacerbated by custom. For example, among many rural

people only two meals are taken a day: breakfast at about 10.00 a.m. and a main meal about 5.00 or 6.00 p.m. Babies and children suffering from diarrhea (and almost all do at some time if not constantly) become dehydrated. This could be treated successfully by giving them four or five light feedings per day; yet the prevailing eating pattern remains unchanged and thousands of infants and small children may die needlessly each year.

There are a wide range of social and cultural factors which impinge directly on the utilization of modern health care facilities. One is the tradition of keeping women apart from male society. In the Islamic north, this takes the form of mores which limit strictly what men may enter dwelling places, talk with, or even "notice" the presence of someone else's wife or daughter. Moreover, there are copious and widely respected taboos against physical contact between men and women who are not married to each other. Hence, health needs of women are greatly restricted to other women. Child birth and child rearing are cases in point. Consequently, any health initiative such as MCH must encounter some or great difficulty depending on the care with which it intrudes into prevailing customs.

The discussion of family planning and provision of contraceptives is a particularly sensitive and even potentially explosive issue, not just on the family level because of severe taboos on the discussion of sexual matters, but also on the political level because many Sudanese have the "open spaces" view that the Sudan will only be able to protect itself and grow commercially if it populates its vast territory. (Critics of family planning, however, are less definite about how to feed, educate and employ the vast population they desire.)

f. Female Circumcision: A Special Health Risk

Much has been made recently, and rightly so, of the "discovery" that many Sudanese communities practice female circumcision. It is certainly the case that this practice raises real and severe health risks to participants. These include immediate infections, secondary infections, and complications during birth. Yet while the MCH program must face these problems and attempt to work to overcome the practice of circumcision, there are very considerable factors which will operate to counteract these efforts.

By virtue of its ancient and widespread (nearly total in the North) nature, circumcision acquires a sacronsanct status and the force of law. However, it is possible to understand some of the components of this phenomena.

1) Ritual cleanliness: a woman is considered clean when parts of her genitalia are removed and by contrast unclean when that is not done.

2) Virtuousness: a circumcised woman is considered to be virtuous; she is ritually clean and physically and psychologically inhibited from engaging in sexual activity.

3) Honor: the reputation or honor of the man, family, tribe, etc., rests upon the honor of its women and the honor of women depends on their chastity.

4) Marriage: in both rural and urban areas of the North, most men still insist upon marrying a circumcised woman.

5) Importance of marriage for women: the social and economic status and well-being of women are linked to marriage and, consequently, it is in their interests (still real and perceived) to marry and remain marriageable. Elder kinswomen (mothers, grandmothers, aunts) promote circumcision very much for that reason.

6) Symbols: there are certain symbols - in the Middle East and parts of Africa, for example, the veil or circumcision - which in recent colonial history have become nationalist symbols and the focus of a cultural backlash against the (interfering) outsider. In North Africa during the national liberation struggles, the veil was retained by women and men, not necessarily because it was good in itself, but because it was an indigenous practice and symbolized the indigenous culture. To some (especially reactionary men) female circumcision may be such a "symbol".

7) Politics: circumcision in the Sudan is a "national" practice and has been and can be a political issue. In the past, when well-meaning outsiders with humanitarian intentions attempted to challenge it, some members of both sexes resisted external interference or intervention in an issue that has implications stretching far beyond the domain of health and physical well-being.

g. Elimination of Circumcision is a Sudanese Matter

. Outside assistance (in the form of information, campaigning etc.) is best rendered as a result of Sudanese request and acceptance. Outsider intervention in the absence of this will have the opposite effect of that which is intended. Circumcision is a health and humanitarian issue (one that is of especial concern for feminists and social reformers) but it is deeply imbedded in culture and politics.

Sudanese strategy for eradication of the practice of circumcision takes the form of health education and general education. For

example, clinical circumcision has been dropped from the curriculum of midwifery training; in the Higher Nursing College, the Director conducts a course on ethics which stresses the deleterious effects and nature of it.

Research has been and is being conducted by individuals and teams through the Faculty of Medicine, Khartoum University, MOH, Ahfad College for Girls, etc. Stress is placed upon clinical and social aspects.

Conferences are being held to raise issues and educate the public. In 1979, two were held: Seminar on Traditional Practices Affecting the Health of Women (VI Female Circumcision) (10-15 Feb.) and Symposium on the Changing Status of Sudanese Women (23 Feb-1 Mar 1979).

Laws have been enacted prohibiting the pharaonic form of circumcision. A resolution taken at the Seminar on the Changing Status of Sudanese Women called for ending all forms of circumcision, including the Sunna form.

h. Women in Development

Women in most of the rural areas of the Sudan (except in some parts of the Red Sea and Kassala Provinces) work hard their entire lives within the family/domestic sphere and play an active and crucial role in the socioeconomic life of the community. Women in both the North and South have rights to own and retain their property deriving from Islam, tribal or customary rights. When a woman loses her husband or must increase her earning power, it is not uncommon for her to seek employment in the provincial or national capital. Women are highly resourceful, adaptable and mobile and responsible to opportunity to sustain their families or to improve their lot when the opportunity arises. In the modernizing process when new employment opens up in the community, women are often left behind or left out, not for lack of interest or capability, but often because males are encouraged into these new positions. The CHW is a case in point: only 5 out of 384 CHWs in the North are women, none in the South are.

There appears to be a strong association between a rural family's standard of living and the involvement of its women in non-traditional economic and social roles. The subsistence farmer and nomad shares extensive economic - especially labor - tasks with women; aside from preparing food and tending children, women work the fields near the home and engage in other food and income-earning practices. For instance, among the Dinka of the South, adolescent girls go along with boys and a few old men when the cattle are taken into their dry season range. Aside from preparing food and shelter, these young women learn a great deal about the Dinka's central economic activity - cattle raising.

Among the better-off Northern rural families and the middle class of villages and towns, much less freedom is permitted girls and women. While some may attend school, and even gain a secondary school diploma, very few enter the modern economy; they are married soon after graduation and are placed under the supervision of their mother-in-law or even grandmother. A professor of political science at the University of Khartoum who has made an extensive study of local participation in rural Sudan explained that it would be difficult to encourage "respectable" young Northern women (by which he meant the daughters of the middle class and local notables) to take part in local government and politics or in community public services (such as health care) because the GOS's recent push to secure female involvement has led to the opinion that only marginal women enter these activities. Yet the professor agreed that nomadic women and members of the great underclass of rural Sudanese society would have little difficulty in working with their male peers since the two genders (unlike their better-off kinfolk) traditionally work together extensively.

Consequently, while it is easier to get female representatives of the rural poor majorities into front line occupations, it will be difficult to find candidates who possess the educational criteria presently demanded. Objections to recruiting women as CHW, MA and other service providers on the grounds that this will offend local custom is perhaps truer of certain social classes and regions where Islam is especially strong than for the South and for the majority of the nation.

3. Popular Participation

In one sense, health care, like other social services, is a participatory activity: clients seek out the provider and they participate together in the cycle of care. This is true equally for curative or preventative care. And since achieving and promoting good health is a goal for most Sudanese just as it is for most people around the world, it would appear that participation is far more a matter of making services available than of encouraging individuals to become involved.

In fact, however, securing popular participation is a problem for the PHC program. For example, it is a considerable problem to gain the involvement of rural peoples in environmental sanitation. Prevailing custom is to use whatever bush or tree is available; little or no thought is given to animal excreta contaminating water; flies, rats and other pests are accepted as a normal part of the food storing and preparing environment; it many places the feeding of children takes place only twice a day so that infants and children suffering from dehydration do not receive nourishment and water frequently enough to survive. In short, there is a vast and complex web of cultural, social and environmental constraints which must be overcome in order to secure the participation of the rural population in preventative health care activities.

Another facet of participation is the recruitment of training of community health workers, midwives, sanitarians and other local cadres. Formal educational requirements effectively eliminate a vast portion of potential candidates. This is especially true among the nomads and in the Southern communities where attendance at school is virtually impossible for the majority of the rural children. Thus, the staffing of local facilities with local people will be difficult unless the selection and training procedures are corrected to encourage broader participation.

The nomination of candidates for midwifery and CHW training is done in most cases by the local village or tribal council. While it is undoubtedly preferable to vest this responsibility at the local level, tradition and politics may well work to discriminate systematically against certain classes of people. For instance, there are practically no women among the CHWs. In part, this reflects the operation of the formal educational criterion; few young women - especially from rural areas - have an opportunity to attend school. But even where this educational lock has been forced and the door to health training is open, custom and prejudice could (and does) work against the entry of women. The increased division of labor which restricts female roles plus the preservation of Islamic traditions seen in Sudanese towns and cities may reinforce these attitudes more firmly among the urban-born and educated medical professionals who command the health system then is the case among rural men and women. In any event, securing the participation of women in the health care cadre will be a difficult and complex task.

Utilization of health services by women would be greatly increased if more women become providers. There are severe taboos in most rural communities about cross-gender body contact and about men entering the quarters of women in the absence of husbands or other senior males. Moreover, MCH has not been given priority attention by the MOH, perhaps because of the role traditionally played by midwives. Presently, there is a reluctance on the part of provincial health officers and other health officials to give supplies and basic training to traditional midwives. These officials prefer instead to stress their policy of recruiting and training women who after a year or so will return to their villages as "scientific" midwives. While this upgrading of the midwifery service is undoubtedly called for, there remains the problem of making suitable adjustments to meet current needs.

With the expansion of recruitment and training of health workers which will come from the PHCP, the building of primary health units and other facilities must be taken into consideration. The tradition of self-help which is found throughout the Sudan offers both a low-cost solution to construction and a vehicle for widespread popular participation. From first-hand observations in the West and the South, and from accounts by other observers, there seems little question but

that this tradition of local participation can be counted on. What will be required, of course, is the coordination of building with the selection and training of CHWs. Similarly, the selection of sites for dispensaries and other construction must be made in consultation with local authorities.

Local participation can be fostered also through the operations of the Sudanese Socialist Union (SSU), the political arm of the present regime. The SSU is represented on all executive councils from the village or rural council through the district, provincial and national levels. The task of the SSU representatives is to keep their constituents informd of national and regional policies and to communicate the demands and interests of the local constituents to decision makers. This latter may take the form of requests to spend local funds for the construction of wells, primary health units, and so forth. In light of the preceding discussion of the role of women, it is noteworthy that the SSU has a women's section that is said to be active down to the district and in some places village level. It is national policy that at least 25% of the members of all councils must be women; and the SSU seems to be a mechanism of promoting and securing participation.

4. Summary and Conclusions

The provision of an increased volume of drugs and medical supplies will be appreciated and no problem stands in the way of community acceptance. The reverse may be the situation: local people may demand greater quantities and more sophisticated products than are available at PHCU. Injections and taking pills are very much a part of rural Sudanese health care behavior.

Securing nominees for newly created slots in training (or in-service) programs should pose a problem only if an educational criterion is followed rigidly. The daughters of traditional birth attendants as well as younger TBAs themselves, can be recruited for the midwifery program. However, gaining anything approaching equity in the representation of women in the CHW, MA and so programs will be difficult even with relaxed educational standards. Local politics and the prejudices of the males who dominate the system will be strong counteracting forces.

MCH, and especially Family Planning, are going to be difficult to implement to the extent that new practices and new attitudes must be fostered in the rural population. The participation and support of males will be necessary for the success of these activities, yet it will be difficult for the midwives and women visitors to obtain. A concerted and integrated educational program will be needed that draws reinforcement from the largely male CHW and MA cadres. Changing baby feeding and

weaning patterns, the practice of female circumcision, and securing access by health workers to women will be difficult. The employment of locally recruited female health workers will ease but not overcome the barriers to a successful MCH program.

Health education for the entire population is an absolute prerequisite for improving the rural population's health status. Utilization of facilities and building PHCUs through self-help should be relatively simple; but changing sanitary (actually, unsanitary) habits, developing regard for safe water, and fostering new nutritional patterns will be difficult. This is all the more the case because we lack basic information about prevailing habits and attitudes.

Be this as it may, the law of selective adaptation works well in the Sudan: traditional cultures incorporate quickly new processes or technologies that are seen to be available and superior to prevailing ones. The displacement of the traditional clay pot by the ubiquitous plastic jug is a case in point. If the trained midwife with her soap and water and hygenic practices and advice can be made available to many women at a cost which they can afford, then it will not be long before the traditional birth attendant will either have to meet the standards of the midwife or lose her role in the community. The same challenge of accommodation and innovation faces other components of the PHCP. The burden is squarely on those who will design and deliver the training of the front line health workers to tease out the points of accommodation and entry in the indigenous society and to prepare their students to exploit and expand them. To this end, close cooperation between members of the PHCP training staff and the anthropologists and other social scientists at the three major Sudanese universities is imperative.

1. Overview of the GOS Financial System

The GOS is decentralized and divided into two financial systems, one incorporating the 12 provinces of the North, and the other the 6 provinces of the South. Each region has its own system of Ministries and source of tax and non-tax revenues. Allocations for recurrent and development expenditures are made by the central government and channeled through the Northern (called Central) and Southern (called Regional) Ministries of Finance and Planning directly to the provinces. Ministries, such as the Ministry of Health, request Finance and Planning for funds to meet expenditure requirements. Assistant Commissioners of Health at the provincial level usually inflate their requests from central in anticipation of severe budgetary cuts. This makes it difficult to determine what the actual financial requirements are to provide health care at the provincial level.

2. GOS Inputs to the Health Sector

Budgetary estimates show an average rate of increase in GOS total current expenditure of about 28% per annum between the fiscal years 1974/75 and 1977/78. Total central government current expenditure rose by about 58.5% from LS.254 million during the first year of this period to LS.434.2 million in the last.

The health sector's share of GOS current expenditure for Social and Community Services has averaged 16.3% per annum between fiscal 1974/75 and 1977/78. This commitment to the health sector can be considered above average when compared with other countries suffering from similar macro-economic constraints.

Between 1970 and 1975, capital investment in the health sector rose at an annual average rate of 20% while recurrent expenditures increased at about 9% and health services seemed to be reaching more of the population in Sudan. The rising costs of health care delivery components (e.g., medical supplies, drugs, salaries), however, meant that most of the increases had very little effect in real terms. A soaring inflation rate of more than 20% per annum also guaranted that increased health expenditures were more compensatory in nature than progressive.

On the development side of health sector activities, there are discrepancies between appropriated funds and actual expenditures. Between fiscal 1974/75 and 1977/78 only LS.5.9 million out of an appropriated LS.10.2 million for the MOH development budget was spent or 58.4% of allocations (Table 2). One can trace the low implantation rate for development activities within the MOH to three major sources:

- first, there is the problem of liquidity. The GOS often finds itself unable to provide the local currency needed to match foreign contributions and sustain development projects;

- second, there is a lack of necessary building materials for the construction components of various projects. The Ministry of Public Works lacks the needed foreign exchange to purchase cement, steel frames and other basic materials;

- third, MOH efforts to utilize appropriated funds are often frustrated by a lack of inter-ministerial coordination. As a means of holding down deficit financing by the GOS, the MOF will sometimes deliberately frustrate MOH efforts to obtain appropriate development funds through bureaucratic maneuvers which prevent their release.

The net effect of internal financial constraints such as these has been to increase the reliance of the MOH on autonomous agencies and external assistance for development activities.

It has been very difficult to distinguish the extent and direction of past GOS commitments to preventive activities in the health sector. This is because the MOH budget does not delineate between preventive and curative services. Neither does the budget detail expenditures by programs or facilities. Instead, MOH divides its budget into two main sections: Chapter I, Personnel and Chapter II, Goods and Services. A single composite total can contain records of monies spent for equipment, supplies, materials and construction costs for services programs.

This system had great appeal since it permits flexibility in making allocations to areas which exhibit very critical needs. No records are kept centrally of expenditure by facility however, and perceived needs often amount to personnel estimations and bear no relation to quantifiable utilization factors such as inventory turnover. Moreover, even if program budgeting were to be institutionalized, frequent transfers of personnel such as those which characterize the health sector would make analysis a most difficult task.

The problem of identifying preventive service expenditure has been rendered even more arduous by the fact that Ministries such as Irrigation and other agencies such as the Rural Water Corporation have consistently promoted preventive health activities. Little interministerial coordination of revenues has guided the activities of these institutions.

The economic difficulties which impede developments in the North are multiplied in Southern Sudan. The minimal economic infrastructure developed in the South under British colonial rule was destroyed during 17 years of civil disturbance. Since the Regional Government was established in 1972, the South has been totally dependent on the central government in Khartoum for its development funds. Traditionally, the Southern Regional Government receives less than 15% per annum of its appropriated development budget. The effect of this situation on the health sector is most serious.

3. The Economic Framework

Although stunning increases in development and recurrent expenditures towards the PHCP have been registered, fluctuations in allocations to the health sector in general are a reflection of the economic difficulties that Sudan had to face.

Overall, the economic difficulties that confront the GOS are the result of a low domestic savings rate, especially in the public sector, slow progress in improving the country's transportation system, a general limitation of absorptive capacity reflecting short-comings in the institutional infrastructure and a deterioration in the country's terms of trade. Recent attempts by the GOS to increase investments have come up against a foreign exchange constraint by import inflation and a poor out-turn of exports.

Aggravating the situation is the GOS practice of implementing a separate development budget without meeting expenditure from normal revenues. The outcome has been severe budget deficits.* These deficits have led to the imposition of limitations on imports which in turn has caused, through lack of equipment replacement, declining production in both agriculture and agro-industries. These economic ills have also helped to erode the price competitiveness of Sudan's agriculture produce, the principal export earner. The difficulty in generating public and private savings to finance investment is reflected in continually rising GOS borrowings from its Central Bank. This has further aggravated inflation, which is running now at a rate of 20% to 25% per annum.

To combat these problems, Sudan has had to institute severe budgetary restraints. After recent negotiations with the International Monetary Funds (IMF) the GOS agreed to cut back development expenditures for all sectors this year in return for IMF balance of payments assistance. As a result, the development program for health has been severely restricted. While the MOH had requested LS.10 million for its development budget, it was only allocated LS.2 million. Because of the adverse balance of payments situation, cutbacks were particularly severe with respect to foreign exchange requirements.

A further result of the IMF negotiations has been the formulation of the "Economic Stabilization Program". It includes a new ceiling of 15% of the total development budget for fiscal 1979/80 for services sector as a whole (Table 3). Total expenditure for the health sector, according to the new plan, is only LS.5.7 million for the same year. Under the plan, total investment has been scaled considerably from that projected originally under the Six Year Plan (Table 4).

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* Estimated public debt for fiscal 1977/78 is $1 billion.

The new "Economic Stabilization Program" projects four major priorities in GOS expenditure which must competent each other since they are being implemented simultaneously:

1- completion of project already under implementation as quickly as possible;

2- rehabilitation of already completed (especially export oriented) projects whose productivity is declining;

3- expansion of the national infrastructure, especially power and transport;

4- allocation of new soft loans and grants to (2) and (3) and gap financing to (1).

In the long run, the future prospects of Sudan look good. With its large stock of unexploited resources, IBRD projections indicate economic growth and a steady improvement in living standards over the next decade. Actual performance, however, will hinge on the level of external capital inflows, public and private investments and the government's ability to adapt its administrative and technical services to tackle the various problems outlined above.

ECONOMICS DATA

TABLE 1

SUDAN: FUNCTIONAL CLASSIFICATION OF CENTRAL GOVERNMENT CURRENT EXPENDITURE
(in million of Sudanese Pounds)

	1974/75	1975/76	1976/77	Budget 1977/78
Economic Services	28.5	34.8	32.0	38.5
Defense and Security	40.9	44.1	68.9	91.8
Social and Community Services	27.3	33.8	56.3	73.8
Education	16.7	20.3	24.5	27.1
Health	5.2	6.4	7.4	10.4
Others	5.4	7.1	24.4	36.3
Transfers to Local Government	58.2	73.4	90.3	110.8
Provinces	47.6	59.0	72.5	90.0
Southern Region	10.6	14.4	17.8	20.8
Gen. Admin. and Unclassified	81.6	79.5	62.1	90.5
Interest	12.6	17.9	24.5	28.8
Total Budgetary Expend.	249.1	283.5	334.1	434.2
Extra Budgetary Expend.	4.9	11.4	62.5	-
TOTAL Current Expenditure	254.0	294.9	396.6	434.2

Source: IMF Sudan - Recent Economic Developments, June 23, 1978 - Sa

TABLE 2

Ministry of Health
Development Budget
Appropriations and Actual
Expenditure: 1969/70 - 1978/79

Year	1. Appropriation	2. Expenditure	
1969/70	2,000,000	1,005,092	50.25
1970/71	1,450,000	664,140	45.80
1971/72	1,600,000	1,048,496	65.53
1972/73	2,212,607	662,892	29.95
1973/74	2,418,220	595,501	24.62
1974/75	2,820,512	998,086	35.38
1975/76	1,500,000	1,500,000	100
1976/77	2,250,000	1,650,000	73.33
1977/78	2,258,800	1,500,000	66.40
1978/79	2,150,000	1,500,000	53.48

Sources: Ministry of National Planning
Ministry of Finance and National Economy
Director of Accounts Office

TABLE 3.

Revised Government Programme

Percentage Sectoral Allocation

	1978/79			1979/80			1980/81		
	L	F	T	L	F	T	L	F	T
Agriculture	28.1	35.8	31.5	28.9	39.5	33.6	27.5	34.2	30.5
Industry	17.0	25.2	20.5	18.5	28.2	22.8	22.0	30.0	25.5
Transport	10.0	29.2	18.4	11.1	24.2	16.9	10.5	25.5	17.0
Services	15.4	9.8	13.0	14.5	8.1	11.7	13.8	10.1	12.3
SUB TOTAL	70.5	100.0	83.4	73.0	100.0	85.0	73.8	100.0	83.3
Regional & Local Development	19.5	-	11.0	17.3	-	9.6	16.8	-	9.4
Integration & General Reserve	10.0	-	5.6	9.7	-	5.4	9.4	-	5.3
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Three Year Investment Plan, Ministry of National Planning.

TABLE 4.

Comparison Between Six Year Plan
and 3 Year Programme

	Six Year Plan[1]		Three Year Programme[3]		
	at 1976/77 prices LSmn	at current prices LSmn	at current prices LSmn	at 1976/77 prices[4] LSmn	%
1978/79	214	282	244	185	86
1979/80	242	377	325	208	86
1980/81	273	502	404	220	81
Three Year TOTAL	729	1161	973	613	84

1. Annual figures estimated by interpolation, with an annual real increase of 11.2 per cent.

2. Converted by estimated price index (1976/77 = 100); 1978/79 = 132; 1979/80 = 156; 1980/81 = 184.

3. Including self-financed projects which are not separately identified in SYP.

4. Percentage of SYP at 1976/77 prices.

Source: Ministry of National Planning.

ANNEX E: LOGISTICS AND SUPPLY

A. Background

The Central Medical Stores in Khartoum (CMS/K) which is in the Central Ministry of Health, is responsible for the procurement, storage and distribution of all medical commodities. It acts in this capacity for the public health sector, the military and other parts of the Government of Sudan. The depot is located in the light industrial section on the southern side of Khartoum.

The head of CMS/K is the Director General Medical Supplies. He and the Deputy Director are both physicians. Other staff includes an assistant director, four pharmacists, and a number of administrative personnel. An organizational chart of the CMS/K is shown on page 11.

CMS/K serves as the headquarters operation for the entire GOS HOH logistics/supply system. The entry points for supplies are primarily Port Sudan in Red Sea Province and the Khartoum airport. The following is a brief description of several of the key features of the logistics/supply system. Additional information is contained in the "Report of the Health Sector Assessment Team - Sudan" (Africa Bureau, AID, Washington, September 1977).

1. Facilities

The CMS/K depot in Khartoum has several warehouses, a small two story office building and a number of small buildings for specialized administration and support activities. The railroad has a spur line into the depot.

At present, there is not enough covered warehouse space at CMS/K to accept the GOS normal two year requirement of medical drugs and supplies. As a result, large quantities of equipment and other commodities are kept in the open with no protection or with only plastic sheet coverings. Other supplies are stored under open sided sheds.

Within the covered warehouse space, there are areas with both adequate shelving and no shelving at all. Some orders are assembled on long tables while others are made up within large marked spaces on the sandy warehouse floor.

At Port Sudan, storage of medical supplies is not centralized in one place. While there is a large recently constructed open-sided shed with a fence around it for protection, most supplies are stored in various general facilities throughout the dock area.

Supply storage facilities in the Provinces vary in location, size and condition. CMS/K officials complain that these facilities are totally inadequate to handle current medical supplies. The

situation in Northern Kordofan illustrates a typical Provincial storage capability. In the northern and central districts of North Khartoum, district medical stores are connected with the district hospitals. In the eastern and western districts, separate storage areas are maintained for dressing stations, PHCUs, dispensaries and health centers. In the southern district, regional and district commodities are kept in two separate rooms (25' x 30' in size) with shelves. Some supplies, however, are in a shed or out in the open. Given conditions such as these, it is reported that most Provinces cannot handle more than a 2 months supply of drugs at one time.

In Juba, the Regional warehouse is housed in an 8.5 x42 meter building which is in a poor state of repair. Its stores are well arranged and stacked, but there is no shelving for broken bulk packages, no benches for collating stock, no office space, no loading/unloading ramp, and no toilet facilities.

2. Equipment

There is an acute shortage of fork lifts, diesel trolleys, and other handling equipment throughout the entire system. Shelving and tables for assembly of supplies are insufficient. Pallets, while available in some warehouses, are also in short supply, so that many commodities are stored on cement or dirty floors.

3. Cold Chain

Medical supplies requiring refrigeration, mostly vaccines, arrive in Sudan by air to Khartoum. The airport has no cold room. The CMS/K has no refrigerated truck, so that supplies requiring cold storage must be cleared immediately.

At the CMS/K, there are three large but old walk-in refrigerators and two new cold rooms donated by the Danish Government. The latter have been assembled but are not yet working. A stand-by generator sufficient to operate all the refrigerated space is not operational, partly because of lack of fuel. As there are almost daily interruptions in electricity in the area where CMS/K is located, it is quite probable that the potency of vaccines has been affected.

Shipment of perishable supplies from Khartoum to Juba is by air, and to other provinces and beyond by vehicles with some refrigeration (usually kerosene operated).

The adequacy of the entire cold chain to maintain drug or vaccin potency, however, is suspect from the time perishables arrive in Khartoum airport to the time they reach the patient. Thus, it is

doubtful that a cold chain capability really exists at present in Sudan.

4. Transportation, Communications and Distribution

In Port Sudan, cargo handling facilities are good and customs clearance is arranged in four or five days for medical supplies. From the warehouses, cargo is shipped by rail to Khartoum and other points on the rail system. Railroad rolling stock, however, is antiquated and shipping space is limited. The Government also gives higher priority to the movement of other essentials such as gasoline and sugar.

The MOH is alloted one truck per week from Port Sudan to CMS/K, as compared with an estimated requirement of two trucks daily. The cost of commercial shipment by truck is approximately 10 times that by rail.

Central Medical Stores in Khartoum is the source of all commodities. Delivery of drugs is by rail, when available, and by private trucks. Payment for outward bound shipments is the reponsibility of each Province, and the Assistant Commissioner for Health must provide for the transportation of the commodities from Khartoum.

The distribution system places the responsibility of the lower echelon (recipient) to provide its own transportation for commodities. For example, El Obeid will ship to the District Hospital to which the Medical Assistant at the dispensary level must go for his supplies. In some cases, government contractor trucks may be used. This has been unsatisfactory since the contractor may often hold the commodities for extended periods awaiting a full load of other goods before a truck is dispatched. In addition, contractors may refuse government shipments since commercial products produce higher revenues and payment is more prompt.

Beyond Port Sudan and Khartoum, distribution of drugs is sporadic, unpredictable and inadequate. Besides a shortage of transport and petrol, climatic and geographic conditions also play an important role. As the rainy season in the Red Sea Province extends from October to February, passenger trains which carry some supplies decrease from three times weekly to once a week. Surface transportation is also slowed. In some parts of the country, health facilities are totally isolated by road for months at a time during the rainy season.

Transportation of supplies to Juba by Nile steamer is also utilized. This run, however, occurs only once every 13 or more days and commodities considered more essential (e.g. food, fuel) are given priority over medical supplies.

Air transport of drugs to Juba and Provincial capitals is potentially feasible. Unfortunately, climate, fuel shortage, irregular schedules and low priority for health supplies make this mode of trans-

-portation unpredictable at this time.

As a result of these transportation problems, the commodity pipeline is choked between Port Sudan and Khartoum, but supply flow is skimpy beyond these points.

5. Logistics, Management and Procedures

GOS logistics officials admit that there is much room for improvement in the methods for receiving, storing, distributing and accounting for health supplies. Throughout the entire system, information is unavailable as to:

- commodity inventory,
- items and quantities received from Port Sudan and items and quantities shipped to the Provinces,
- usage rates and re-order points,
- commodities in the MOH pipeline and/or to be received from other donors,
- Port Sudan commodities awaiting shipment to CMS/K,
- transportation costs.

Management could be strengthened at the Chief Storekeeper and Assistant Storekeeper level. They are responsible for warehouse operations, yet have no effective standard operating procedures to follow and little supervision.

As might be expected, the situation in Juba is even more acute. According to a report by Mr. Brian V. Cook (March 1979) for AMREF, there are significant problems such as lack of trained personnel, communication, and inadequate internal warehousing procedures and collection and reporting of basic data.

6. Repair Facilities

CMS/K has a small section in a warehouse devoted to the care and repair in instruments, small medical equipment (e.g. IV stands) and larger items such as refrigerators and blood bank equipment.

Repair facilities for vehicles are minimal. Staff is composed of five mechanics and two assistants all of whom are rated as qualified. Spare parts are limited but are often available on the local market.

7. Drugs and Supplies

Requests for procurement of drugs and supplies required for the PHCP are submitted directly to the Ministry of Finance by the Provincial Commissioners. In the Province, the Assistant Commissioner

for Health prepares separate budgets for the PHCP and for hospitals, but these items are combined in the health budget submitted to the MOF. When budget allocations are finalized the MOH is notified of the amounts ear-marked for purchase of drugs and supplies. Procurement is then made for the Provinces by Central Medical Stores, MOH.

The supplies for PHCP are kept separate from hospital supplies during distribution. Central Medical Stores sends hospital drugs and supplies directly to the hospitals, but PHCP supplies go to a storeroom at the office of the Assistant Commissioner for Health.

Because of budgeting constraints, the requests for drugs and supplies are cut drastically in the budgeting process. The request for 1979/1980 is for LS 18 million, but it is expected that the amount actually allocated will be substantially less. The MOH does not have a separate breakdown on what percentage was spent on curative and what percentage on preventive activities.

Thus, the amounts of supplies are often grossly inadequate. Due to poor transportation, those that are received often do not get to the peripheral health facilities such as dispensaries and PHCUs.

The GOS has sought to provide the PHCUs and the dispensaries with the drugs, supplies and equipment that were designated in the Primary Health Care Programme Plan. Because of the budgetary, logistical and other constraints discussed above, the true situation is that PHCUs and dispensaries are chronically short of, or completely without, drugs and supplies.

B. Rationale for AID Support

Due to these constraints described above, it is estimated that the present commodity support system is functioning at about 20% efficiency and effectiveness in meeting program requirements.

The MOH is in agreement that to ensure success, it is best that the project supply system be created as a separate entity in the MOH. It should, however, still remain under the direct control of Central Medical Stores, Khartoum (CMS/K). The logistics and supply component of the project has been designed to shorten the lines of supply to all facilities and to provide adequate supplies in a timely manner. After two years of project implementation, Central Medical Stores in Khartoum and Juba should attain 60% efficiency and effectiveness and the project 80% in those categories.

Decentralized deployment of supplies and supervisory personnel envisioned by this project is the only viable approach to supporting a network of primary health care services on a national basis.

C. Recommendations

Because of the present status of commodity storage and distribution within the MOH health system, it is proposed that a separate warehouse system be established for the PHCP. PHCP commodities would thus be kept separate from other health system supplies and the chances of their being diverted to other uses would be minimized.

To implement this system, CMS/K staff would receive practical short term training and be provided with short-term U.S. conterpart logistics technicians. Together they would set up procedures for commodity purchasing, storage, distribution and accountability. They would also establish inservice and refresher training for provincial and district storekeepers and other middle level logistics personnel.

It is felt that the basic elements of a supply infrastructure are present at the CMS/K and in the provinces. There are, however, certain significant constraints (storage space, transportation, petrol, management procedures and accounting systems) that hamper the system's effectiveness. The proposed project will assist the MOH in overcoming these problems.

The long term logistics/supply advisor from the AID Northern Primary Health Care project will assist in the development of the MOH logistics system during the preimplementation phase of this project. He will also develop a practical short term training course at Perry Point, Maryland, for senior level CMS/K personnel. This training will involve such subjects as commodity control procedures, storehouse management and commodity transportation. These persons will then develop in-service training programs for middle and lower level CMS/K personnel as well as provincial and district level storekeepers. Thus, by the time this health sector support project is implemented, several preliminary steps will have been taken to improve the logistics/supply system.

It is recommended that the following assistance be provided through the health sector support project.

1. Technical Assistance

One long term logistics/supply technician is provided in the North for 36 pm and one in the South for a period of 36 pm from the existing NPHC and SPHC projects.

Each long term technician is responsible for establishing a PHCP logistics supply system which would coordinate all supply shipments through CMS/K channels. A small (20%) of drugs will be shipped through AMREF channels (via Momasa) only until the Sudanese logistics system is functioning more smoothly. The logistics/supply technicians will also supervise PHCP shipments to the participating Northern and Southern provinces.

Short term technical assistance (4 pm) would be provided to the CMS/K in the Northern and 9 pm to the Southern MOH in Juba to set up procedures in such areas as warehouse distribution, storekeeping, record keeping, storage maintenance, reporting and accounting. These short term consultants would also assist in the establishment of logistics/supply and warehouse management techniques, commodity purchasing, personnel management, reorganization of staffing patterns and delineation of job reponsibilities.

2. Training

Short term in-country on-the-job training courses will be provided for middle and lower level storekeepers from CMS/K and the Provinces. These coureses will concentrate on practical aspects of logistics/supply management, warehouse operation, reporting, transportation of commodities, vehicle accountability and storehouse control. Emphasis will be on practical concepts such as purchasing, receiving, inspection, shipping, survey procedures, inventory controls, stock arrangements, security procedures, palletizing and floor plan management. The courses will be developed with assistance from the above mentioned technical assistance.

3. Commodities

a. Vehicles

Two 15 ton trucks will be supplied to the CMS/K for use in distributing supplies from Port Sudan to Khartoum, Juba and Northern Provinces nearest to Port Sudan.

Five 5 ton trucks will be provided, one each for Port Sudan and Juba and one for each of the targeted provinces in the South. Trucks have been provided to Northern Provinces under the AID Northern Primary Health Care Project.

One 1 ton refrigerated truck will be supplied to transport perishable commodities and supplies from the Khartoum airport to CMS/K.

b. Equipment and Supplies

The attached list (Table 1) describes the equipment and supplies to be provided to the logistic system over the life of the project for both the Northern and the Southern Regions.

c. Drugs

It has not been possible to determine the exact cost of drugs

required for each PHCU and dispensary. This is in part due to the fact that:

- not all medications have been purchased at the same time,
- provincial budgets for drugs do not differentiate between drugs allocated to PHCPs and dispensaries and the rest of the system,
- budgetary requests are always inflated in anticipation of cutbacks,
- the supply lists have been modified by various provinces and international donors, and
- the CMOH, CMS/K and the provinces do not have data on unit costs for drugs broken-out by curative and preventive activities.

As a result, estimates have been made for the cost of a one year supply of drugs for a PHCU and a dispensary. The estimates are based on MOH calculations, UNICEF data and costs for similar sets of drugs for use in PHCPs in another African country (Mauritania). For the one year's supply of durgs, the PHCU unit cost is $2500 and for a dispensary, the unit cost is $5000.

Based on this data, the project will provide 2.2 million over the five years of the project. This will supply a total of approximately four Primary Health Care complexes (1 dispensary and its associated 5 PHCUs) per province per year.

Of the 2.2 million, one million will be set aside for purchase of drugs through AMREF. These drugs will be shipped to the Southern Region via Mombasa, a route currently used by AMREF to expedite supply delivery to the South. Thus, 45% of the funds for drugs will be allocated exclusively for the three targeted provinces in the South. This amount reflects the smaller number of PHCUs and dispensaries in the South.

d. Construction

A separate warehouse system will be provided for the PHCP. This will consist of:

- 1 warehouse for each of the 4 participating Northern Provinces plus
- 1 warehouse each for Lakes, Bahr el Ghazal, Jonglei and Upper Nile, and Juba in the Southern Region*
- 2 warehouses, one in Port Sudan and one in Khartoum for regional storage and distribution.

* A small workshop area will be partitioned off in each warehouse. Tools and equipment will be provided to permit simple repairs and maintenance of vehicles and equipment.

Warehouse Equipment List

Item	Qty.	Location	Unit Cost	Tot. Cost
1. Generator	1	Juba	20,000	20,000
2. Fork Lift	4	1 Each Regional	20,000	80,000
3. Platform truck 30"x60"x12"	4	1 Each Regional	350	1,400
4. Ceiling fans	83	6 Each Warehouse	180	14,940
5. Shelving, metal, 5 shelves 1,200		100' each	4,200	50,400
6. Hand truck	12	1 Each Warehouse	80	960
7. Typewriter, manual, English	12	1 Each Warehouse	300	3,600
8. Calculator, manual	4	1 Each Regional	300	1,200
9. Desk, office, single pedestal	12	1 Each Warehouse	250	3,000
10. Chair, desk	24	2 Each Warehouse	40	960
11. Filing Cabinet, 4 drawers	12	1 Each Warehouse	125	1,500
12. Workshop Cabinet Bench, 6'	12	1 Each Warehouse	280	3,360
13. Refrigerator, 15, cu.ft.	12	1 Each Warehouse	400	4,800
14. Pail, galvanized, oval, 11qt.	72	6 Each Warehouse	8	576
15. Floor Brush, heavy duty, 24"	24	2 Each Warehouse	9	216
16. Plastic hose, 75', 3/4"	12	1 Each Warehouse	20	240
17. Nozzle, hose, 3/4", brass	12	1 Each Warehouse	4	48
18. Palocks, regular, without chain	24	2 Each Warehouse	10	240
				180,355
15% spare parts on itemes 1 & 2 *				15,000
10% spare parts				8,726
				210,986
50% shipping (N)				
60% shipping (S)				19,000
				329,986

ANNEX F

HEALTH COMMUNICATIONS

I. Introduction

The communications component of this project consists of two pilot sub-projects. (1) The first is for radio broadcasting to reach organized village groups or forums for teaching health, nutrition, and community development information. The location will be two remote provinces of Southern Sudan. The field organization of the broadcasting project will be made up principally of local Community Health Workers (CHWs) trained by the PHCP, to help form and supervise village forums. This broadcasting project also includes a smaller in-service training component for the CHWs, used to strengthen CHW information concerning health care and community organization.

This annex will: (1) Summarize the status of existing communication facilities, including telecommunication and broadcasting facilities, available to support delivery of health services in Sudan; (2) Describe the need for a proposed radio broadcasting project, as well as strategy for incorporating radio broadcasting and radio audience organization into the long-term preventative medicine and community education objectives of the PHCP; (3) Present an integrated budget and summary of proposed inputs related to communication support activities, and a summary of additional communication projects for future consideration.

II. Existing Communication Facilities

In spite of substantial recent investment by the Government of Sudan in both broadcasting and telecommunications, little of this investment provides a foreseeable benefit for delivery of health services in remote regions. Most of this recent investment has been focused on bringing additional communication services to the only 18 percent of the population that live in towns or cities of 5,000 or more residents.

Radio Omdurman is programmed by the Ministry of Culture and Information and broadcasts almost exclusively in Arabic eighteen hours a day. In addition, in the Southern Region, Radio Juba, representing the same Ministry, maintains a small and active radio station using both English and Arabic, and transmitting four and a half hours each day.

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(1) These communications components have been determined as a result of a feasibility study by a three-person communications health team, made up of one telecommunications engineer, one social scientist and radio and satellite specialist, and one rural radio broadcasting specialist, organized by Dr. Clifford Block of AID DS/ED and the Academy for Educational Development Inc. Washington, D.C.

In spite of Ministry of Culture and Information claims that Radio Omdurman blankets all of Sudan, interviews with groups at Primary Health Care CHW schools and at Midwifery schools in Nyala and Kas in South Darfur province, and in El Obeid in North Kordofan province, showed that Radio Omdurman was not available in at least 11 of some 90 home communities represented. Seventy nine students said radio sets were available in their villages, and in most cases radios were equipped with short wave capability and were used to listen to Voice of Egypt, Radio Chad, Voice of America and other channels in preference to Radio Omdurman.

Radio Juba now broadcasts using a 7 KW transmitter with an effective range of only 125 km. However a new 200 km transmitter has recently been installed by the U.S. Harris Corp. Because of energy shortages, the new transmitter will likely be used at 50 KW or 100 KW capacity which will still be sufficient to reach most of the South.

According to UNESCO figures radio set ownership in 1976 was a fact for 7.7% of the population. We estimate that in more remote regions ownership is well below 7.7%, totalling no more than 1% to 2%. With average household size in remote provinces as high as 6.5 persons, the proportion of households with radios is much higher than 1%. According to observers with substantial field experience, radios are in use in most communities, group listening to radio is common and most people have access to a radio when batteries are available.

III. Primary Health Care Broadcasting Project

Virtually all preliminary evaluations of the PHCP to date have said that a critical need of the program is to find ways to involve community health workers in preventative medicine, community development and community education. The purpose of this section on radio broadcasting is to outline a primary health care radio project that will: (1) Make active community development use of CHW's who are already in the field or who are being trained for the field; (2) Emphasize delivery of useful information about health, nutrition, sanitation, agriculture and livestock that can be acted upon at the village level, and that is directly related to the objectives of the PHCP; (3) Emphasize use of the indigenous languages of Dinka and Nuer that are spoken by an estimated 1.7 million of the 3.1 million population of the South.

The intention of this project is to use radio school or radio forum techniques that have been demonstrated in wide range of other countries, from Tanzania, to India, to Thailand to Guatemala, for teaching basic information to non-literate and partially literate adults. The format proposed makes use of organized radio discussion

groups, so that some 8 to 12 members of a community meet once a week to listen to half-hour broadcast, and then discuss the content of the broadcast for some 15 or 20 minutes thereafter. The effectiveness of this format depends critically on the effectiveness of a field organization that provides support and follow-up for the programs, and that helps maintain group interest and learning for the several months that a sequence of programs commonly takes.

There are several reasons for proposing Southern Sudan instead of one of the Northern regions for this health broadcasting project. First, the Southern region, which alone is larger than all of Kenya, is relatively isolated and deprived of basic government services compared with other parts of the country. Second, Radio Juba, which broadcasts under the control of the Southern Regional Ministry of Culture and Information, aims at significantly smaller audiences than the alternative Sudanese station, Radio Omdurma in the North, and is therefore a more appropriate vehicle for a broadcasting project that emphasizes gradual development, beginning with modest local objectives. Third, there appears to be strong potential support for a health broadcasting project in the South. Senior spokesmen for Radio Juba, the Regional Ministry of Culture and Information, the Regional Ministry of Health and the Regional Ministry of Transport and Communications have expressed enthusiasm for such an undertaking. Also Radio Juba's limited personnel made up of 14 people in the English language section and 17 in Arabic, have considerable interest in using radio for more specific development objectives. The radio staff includes a general program director with radio training in Germany, an English language director with short-term training at the BBC in London, and a technical director with 4 years of technical training in Prague.

Radio Juba's daily schedule, from 6.40 a.m. to 8 a.m., and from 5.40 p.m. to 9 p.m., includes one daily 15-minute program about health, nutrition, economic development, the rights of women and the like. This daily program is made, in co-operation with Radio Juba, by the Sudan Council of Churches (SCC). To prepare the daily program, SCC maintains a small studio, a director and six producers. This SCC radio group makes up a local resource that could provide useful co-operation in program production. Also, the University of Juba's College of Education recently hired a specialist to teach Distance Education, and to teach use and evaluation of radio for extending education to remote areas. Students with training in this field could presumably take an active part in the survey research and planning stage of a radio project and in subsequent evaluation.

Fourth, the Africa Medical Research Foundation (AMREF) which is being proposed as the contractor for all Southern activities in this use of radio. In both Kenya and Tanzania AMREF's is already actively involved with health education, through a monthly

health magazine and through a weekly radio broadcast. One of AMREF's senior directors was active in Tanzania's widely recognized "Man is Health" radio campaign. (5) Using radio for health education in Southern Sudan is a reasonable extension of AMREF's previous activities.

B. Language: One problem with broadcasting of any kind in Sudan's South is linguistic barriers. Until recently an official policy appeared to support the use of only two languages, English and Arabic. Although accurate figures are not available, observers report that outside the major provincial capitals, English or Arabic are understood or spoken by less than 8% of the Southern population. However a recent Southern Regional government policy has encouraged use of indigenous tribal languages for use in the first four years of primary school. AID currently supports a Summer Institute of Linguistics project for translating primary school materials into four indigenous languages. (6) Similarly, Ministry of Culture and Information spokesmen say that current Radio Juba broadcasting policy is that indigenous tribal languages can and should be used to deliver useful information where those languages are spoken.

Table II shows the number of people associated with each major language group and shows the estimated proportion of the population these groups represent in each of that major Southern regions.

(5) See Budd Hall, MTU NI AFYA: TANZANIA's Health Campaign. Monograph, The Clearinghouse on Development Communications, Washington, D.C., 1979.

(6) AID-SIL Project 650-0028

Table II

Tribal Language Groups in Southern Sudan(7)

Tribal Language	Population 1979 (est.)	Proportion of Population in Regions of: Bahr El Ghazal & Lakes Prov.	Upper Nile & Jonglei Prov.	East & West Equatoria Prov
Dinka	1,260,000	87%	26%	0.3%
Nuer	480,000	-	52	-
Zande	236,000	0.4	-	24
Bari	226,000	6	4	16
Toposa	138,000	-	-	14
Lotuko	132,000	-	3	10
Shilluk	124,000	-	9	-
Bongo-Baka	79,000	2	-	3
Moru	68,000	-	0.1	8
Didinga	58,000	-	-	7
Jur Luo	54,000	0.8	3	2
Morle	51,000	-	-	5
Kakwa	40,000	-	-	4
Acholi	27,000	-	-	2
Others	97,000	3.8	2.9	4.7
	3,070,000			

(7) Sources are: AID-SIL Project 650-0028 Optional Program Grant Proposal, April 1978: First Population Census of the Sudan 1955-1956, Department of Statistics, Khartoum, 1958; Herman Bell, (Ed.) Directions in Linguistics and Folklore in Sudan, University of Khartoum Press, Khartoum, 1975; Barbara Grimes, Ethnologue, (Summer Institute of Linguistics), Wycliffe Bible Translaters Inc.; Huntington Beach Calif., 1978; Harold Nelson et. al. Area Handbook for the Democratic Republic of Sudan, U.S. Government Printing Office, Washington, 1973.

Using the estimates in Table II, we see that the two major languages, Dinka and Nuer, account for 1.74 million of the 3.07 million population in the South. Furthermore, almost all of this population is concentrated in the Bahr El Ghazal and Lakes provinces in the Western part of the region, and in Upper Nile and Jonglei provinces in the east. Dinka alone account for 87% of the Bahr El Ghazal/Lakes population. Because of this concentration, and because these five provinces make up the highest priority areas for AID's participation in Southern Sudan's PHCP, we propose use the Dinka language for health radio broadcasting.

C. In-Service Training: Because of the need for continuing training for CHW's and other participants in PHCP, and because of AMREF's long experience in teaching health care workers by correspondence in remote East African locations, a pilot project using radio for inservice training is planned for start-up during year three of radio broadcasting. This program should share similar objectives with the radio-forum broadcasts. This in-service training should be a vehicle to move CHW's closer to community development activities, and to inform CHW's who are already active in radio forums about information they should make use of to remain effective.

D. Health Broadcasting Implementation: The key parts of the primary health care broadcasting project proposed for Sudan are: (1) Programming tailored to specific target audiences; (2) Audience organization using small listening groups brought together and supervised by CHW's; (3) Program support and follow-up in the form of an active field staff that visits and supports radio listening groups, that provides additional teaching materials and gets questions answered; (4) Program evaluation that provides systematic evaluation of the impact of the project, and information needed to improve performance to assess cost effectiveness and guide future radio use in other parts of Sudan.

Similarly, the key component of an in-service radio training project for reaching CHW's, as proposed on a modest pilot project scale for Southern Sudan are: (1) Programming that reflects CHW problems and difficulties and that includes active CHW participation in production and commentary; (2) Audience organization through periodic CHW regional meetings; (3) Program support and follow-up in the form of printed materials, examinations and face-to-face interraction with project field staff and; (4) Program evaluation.

To implement these components, we project the personnel needs and salaries shown on Table III, according to the categories of Administration, Program Production and Program Utilization/Evaluation.

We also show, on Table IV, the number of radio forum groups, participants and monitors that radio project personnel will work with.

Table III

Personnel Needs in Person/Months

Primary Health Care Broadcasting Project

Administration	Year	3	4	5
Project Director(1)		-	-	-
Associate Director ($420/mo)		12	12	12
Administrator(2)		-	-	-
Secretary(2)		-	-	-
Production Dept.				
Program Implementation Survey(3)		-	-	-
Program Director ($3916/mo)		12	12	6
Program Producer ($335/mo)		36	36	36
Studio Technician ($280/mo)		12	12	12
Secretary ($250/mo)		12	12	12
Utilization/Evaluation				
Utiliz.implementation survey(3)		-	-	-
Eval. implementation survey(3)		2	1	1
Util./Eval.field director($290/mo)		48	48	48
Print/Poster materials ($280/mo)		12	12	12
Total short-term TA		2	1	1
Total long-term TA		36	36	6
Total local personnel		144	144	144

(1) Project director is Health Education Specialist, provided under this project by AMREF to Dept. of Health Education of Regional Ministry of Health.

(2) Administrative and secretarial services for project administration provided by AMREF personnel in MOH, supported by AMREF overhead charge.

(3) Three-person 3-months implementation survey is budgeted at $8,000/person/month, in year one. Short-term technical assistance for one month per year in years two, four and five budgeted at $6,000/month using local personnel. Technical assistance for two-months a year using U.S. consultancs in years three and six is budgeted at $8,000/month.

Table IV

Projected Radio Forums, Students, Monitors and Supervisors

Primary Health Care Broadcasting Project

	Teaching Cycle(1)	No. of Groups	Group Leaders	Students (2)	Monitors (3)	Supervisors (4)
Year 3	1	25	25	212	7	2
Year 4	2	25	25	212	7	2
	3	50	50	425	14	3
	4	150	150	1275	42	7
Year 5	5	200	200	1700	57	4
	6	350	350	2975	100	4

1. Assumes 16-week teaching cycles, three times each year.
2. Assumes 8.5 students completing each cycle.
3. One monitor for each 3.5 groups.
4. Supervisors shown here include 2 fieldwork directors.

Elsewhere in the text of the report, we have briefly discussed these personnel needs. Here we will outline in more detail the responsibilites of the implementation survey team, and the qualifications and job descriptions relevant to the expatriate radio program director and the utilization/evaluation field director.

The implementation survey team will be responsible for specifying objectives and operating procedures within the categories of program production, program utilization and evaluation. In program production, the team is required to lay out a full sequence of broadcasts curriculum clearly related to the lives of listeners. For example a program schedule, laid out by month, should identify when program outlines, scripts, fieldwork material and the like must be completed to correspond with the date when a particular broadcast is relevant. Sample scripts, programs and program outlines must be developed and provided, as well as simplified explanatory materials for program production.

The utilization section is required to prepare supporting materials for broadcasts, and to define mechanisms for field organization. One utilization task should be to cross-check and verify our data regarding the use of Dinka. Although our estimates are believed to be reliable, it may be for example, that Dinka is linquistically sufficiently similar that it should be replaced by Bari, Toposa or Zande. Similarly a utilization task must be to verify our data that radios are available within the target audiences. Before the transistor reduced radio costs enough to make radios available in much of the world, many radio forum projects provided radios to participating groups, with the requirement that these groups pay for their own batteries. In the event radios are not sufficiently available, the incrementel costs of for example, 1000 radios at $22/each, is small compared with total project costs and is easily within the reserve for contingencies that forms part of the budget.

The evaluation component of the implementation survey team is to define both formative and summative evaluation strategies, and to specify and prepare evaluation tools to be used. Precise procedures must also be described for how to use these tools, and how to ensure and verify reliability. This component should define and begin to work with local supporting resources at the University of Juba, collect baseline data, clearly delineate the evaluation responsibilities of local personnel and short-term technical assistance, and outline the questions to be examined and the data relied upon for the final project summary report to follow three years later.

The program production director, should have a background of active participation in development radio projects elsewhere, for example on Kenya's "Man is Health" radio campaign. One of the keys to a successful radio project is commitment on the part of

a program department to get into the field, far from the studio, to interview farmers or herdsmen, to make programs that are directly relevant to the daily lives of listeners, and to do so consistently month after month. This means a commitment to avoid an expert for UNESCO lecturing about safe water, in favor of a group of Dinka tribesman describing their own experience. Because the program director also has major organizational and training responsibilities, he or she will help coordinate programming with other activities. In addition to a vigorous commitment to grass-roots programming based on fieldwork, that person also needs demonstrated organizational ability as well as knowledge of feedback and evaluation mechanisms.

The program production director's responsibilities are for: (1) Planning the content for each sequence of health broadcasts, and for each sequence of in-service CHW programs; (2) Outlining program scripts and training local Dinka speaking personnel in program preparation; (3) Recording and editing programs in the studio, and training local Dinka speaking persons in these techniques; (4) Designing and supervising production of print, poster and other supporting materials; (5) Spending a minimum of five working days every month in the field supervising programming staff who are recording program material; (6) Incorporating feedback and evaluation data into program plans and content.

The utilization and evaluation director shown on Table IV has an extraordinarily demanding job. He is to be provided with one four-wheel drive vehicle and a field staff of two or three persons. He is to take responsibility for all utilization and evaluation work in the far-western part of Southern Sudan, in Bahr El Ghazal and Lakes provinces. These two provinces represent some of the most isolated most destitute areas of all central or eastern Africa.

The critical qualification for these two field directors is willingness to put up with difficult conditions, while spending three or four weeks in the field on a regular basis, using self-reliance and enthusiasm to overcome sure setbacks.

Responsibilities of the utilization/evaluation field director is for: (1) Implemention the program utilization and evaluation strategies laid out in the first three months of operation by the implementation survey team; (2) Developing additional program utilization and evaluation strategies; (3) Developing a field staff network made up of one full-time field supervisor in charge of up to 5 radio groups as shown on Table IV; (4) Developing procedures for training radio forum monitors during three-day local seminars to be held throughout each region; (5) Distributing print, poster and support materials and systematically collecting feedback; (6) Spending a minimum of 10 working days a month in the field, supervising field staff.

Technical Assistance (Long-Term): Long-term technical assistance calls for one radio program production head and one provincial head, to be hired during the third year. This will enable the PHC program to become more established and as a result of the other project imputs in a position to effectively utilize this health communications imput. The provincial head will cover two provinces - Lakes and Bahr El Ghazal. AMREF, which is being proposed by AID to implement all Southern activities under this project, will provide the above mentioned technical assistance. No position is shown for project director, because this responsiblity is taken by a health education specialist to be provided by AMREF under the project to assist in directing the Health Education Department of RMOH, where both the radio forum and in-service teaching projects are based.

Technical Assistance (Short-Term): Short term technical assistance totals 16 months, including an implementation survey team made up of a program production, a utilization and an evaluation specialist for three months each, scheduled before the start of program operations in year one. The implementation survey team has responsibility for defining the radio curriculum, schedule and support materials for radio forum broadcasts. The team has an evaluation component with responsibility for collecting baseline data and setting up procedures for regular measuring and reporting on the effectiveness of programming, support materials and field organization (formative evaluation), and for measuring cost-effectiveness and long-term impact of radio forum broadcasts on learning, health habits and CHW effectiveness (summative evaluation).

Remaining short-term technical assistance is allocated to two related evaluation strategies. For formative evaluation, implementing the research design of the implementation survey team, one month of technical assistance is provided in years three, four and five to work with temporary local personnel from the University of Juba. For longer-term summative evaluation leading to a final written report on the project to be printed and made available for similar projects elsewhere, the project will finance three evaluations over the life of this activity.

Evaluation of in-service training of CHWs and other health workers is to be designed in year four at the start of the in-service training component by a consultant. Use of the evaluation design is to be added to duties of subsequent radio forum evaluation groups.

Training: The training component has three elements. The largest is for a series of regional training sessions within each participating province, to be provided by provincial field staffs for radio forum group monitors. A projected 1,625 monitors will receive three days of training each in community organization and development and discussing objectives of the radio project and procedures for making the radio forums more effective.

A second training component begins at the start of year four and provides local transportation and support for a seminar for radio and development. Funds allocated here are local currency costs to bring personnel from the radio project, Radio Juba and the regional MOH to a 4-day seminar at the University of Khartoum. Because several African countries, notably Tanzania and Tunisia, have recent experience using radio for health education campaigns, an objective of the seminar will be to bring together representative of these projects with participants from the U.S. and with senior government personnel to discuss development of radio in Sudan. Funds and organizational capability and planning have been made available by AID DS/ED through the Academy for Educational Development in Washington for similar conferences in West Africa and elsewhere and similar currency support will be requested by USAID/Sudan in this case.

A third training component provides 4 months of training for project personnel. The purpose is to send two program production staff members to the Institute of Mass Communications at the University of Nairobi during the fourth year.

Commodities: Commodities include a modest studio recording and editing capability sufficient to produce good quality cassette tapes for use on Radio Juba. Printed materials, posters, paper, canvas and other supplies are also provided. One four-wheel vehicle is provided for the program head. In addition, two motorcycles are provided with one allocated to the programming department in Juba and one to the provincial field officer.

Local Personnel: Local personnel include an associate project director, an associate production head, a print and poster producer, a studio technician and a secretary, who are each part of the project from start up to mid-way through year three.

Program producers are added similarly to a maximum of three in year five. Similarly fieldworkers for utilization/evaluation support increase to four in the fifth year. Temporary local personnel are provided to support radio forums and particularly CHWs who are asked to provide additional programming, utilization or evaluation services.

Costs for these project components are presented below:

Summary of Inputs

Radio Forum Broadcasting Project: Southern Sudan

		$	LS
Technical Assistance			
Long-term (expat)	36 pm	117	24
Commodities		85	
Local Personnel			
Long-term (utilization/evaluation)	36 pm		24
(Production)	180 pm		70
		202	118

Other

Costs related to housing, vehicle and vehicle operations are included in overall PHCP component.

ANNEX G

TRUE COPY

From : SECSTATE WASHDC
To : AMEMBASSY KHARTOUM
Info : AMEMBASSY NAIROBI (REDSO/EA)
Subject: PID Review: Sudan Health Sector Support Project (650-0030)

1. PID approved by AA/AFR

2. AID/W Project Committee, with participation USAID Reps Chapman and Holtaway, reviewed subject PID on 1/30/79 and recommended AA/AFR approval. USAID authorized proceed with PP development for third quarter submission and fourth quarter authorization and obligation. PP should address concerns raised during committee review and discussed below.

3 Committee commends USAID in proposing subject activity to provide broad-guaged support to key programs in Rural Health Services delivery, including family planning. Several concerns do exist which should be fully clarified in PP analyses, including the sectoral nature of project, the absorptive capacity of the related institution, the project recurrent cost burden on GOS, local cost financing and several implementation arrangements.

4. Sectoral nature of project: In summary, committee believes subject activity constitutes a well-defined "Project" and should be approved as such, but is not presented with a "Sectoral" focus, i.e. with components that contribute to the formulation or implementation of collective strategy for rural health development, including family planning. The degree of specificity in PID contributes to committee's conclusion that this activity indeed constitutes a"Project". Believe it is possible to develop project along PID outline which provides support to two specific programs in GOS' health plan. Analysis for this rural health delivery project would focus primarily on the institutions' implementation capacity with a general assessment of the technical, economic, sociological aspects of their discrete activities at specific project sites (e.g. in construction wells and primary health care units).

5. Institutional absorptive capacity: As stated above, major job of PP team will be to evaluate capacity of institutions to effectively absorb increase in funding for on-going programs. A closer examination historical budget appropriation/expenditure data on p.22 of PID particularly relevant to this issue.

6. Recurrent cost implications: An integral part of the institution absorptive issue is the problem of recurrent cost financing and the related concern of potentially increasing inflation. PP analyses should assess the overall magnitude of implied recurrent cost of project. Size of project and implications on austere GOS budget

should be subject of full and frank discussions with GOS, including alternative ways of meeting these costs (e.g. user-costs and gradual "phase-in" of GOS recurrent cost financing while phasing-out AID recurrent cost financing). Committee agrees that GOS will have to look for rural communities to fund increasing shares of these costs either with user-fees, specific taxation or other means. Detailed assessment and analysis of this and institutional absorptive capacity discussed above will be key determinant in PP review/approval process.

7. Project Financing: (A) PID suggests PL 480 Title III financing of local currency costs of project. While this is a commendable attempt to integrate programs; USAID aware review/approval process for Title I/III programs is an interagency matter in which AID is a participant, whereas project approval is essentially an AID matter. Do not, therefore, believe it appropriate to link approvals. It therefore necessary to identify alternative financing arrangements for thse costs in event Tilte III program not approved as anticipated, e.g. Title I local currency generations, building local currency generations into the project (e.g. sale of some imported commodities) or scaling down scope of project and financing some local costs with direct dollar purchases of Sudanese pounds. Other alternatives may exist for PP team exploration.

B. Committee concluded that reference to financing PVO activities via OPG's was inadvertent and that use of PVO's as implementing agents is contemplated.

8. AID/W suggests particular attention be given to recommendation for purchase of a computer for Dept. of Vital Statistics (p. 16 of PID), particularly in determining magnitude of additional manpower and other recurrent cost requirements. Committee agrees this indeed a worthwhile recommendation and that problem of mechanical manipulation of data may have broader significant implications for Sudan. AID/W requests USAID's assessment of this problem, and what other donors are doing to address problem and alternative approaches for AID assistance. FYI PPC/PDPR willing provide TDY consulting assistance if necessary. End FYI.

Vance

September 24, 1979

AFR/DR/EAP, Morris McDaniel

Sudan Health Sector Support - 650-0030

USAID/Sudan, Mr. Gordon Pierson

Upon receipt of the PP for the Health Sector Support Grant, I requested a limited number of copies from duplication which would be used for an informal, technical review. As there was no current pressure to authorize the project in FY 79, it appeared that the project might benefit from a thorough informal review of this sort to assure that all the components in this extensive complex project "fit". With this in mind I invited Tom Georges, DR/HN, Vic Wehman, DS/H, Abby Bloom, PPC/H and Jim Graham, DR/EAP to read the PP and informally meet to discuss it prior to launching it through the formal review process. The following is a collective impression of the group's discussion and is provided as informal guidance.

1. A general comment was that there was a wealth of information in the annexes which did not surface in the PP itself. Further, each of the components seem to inadequately address the relationship of the given component to the other components in achieving a solution. The PP did not follow the process of (a) identifying the problem (b) defining the solution (examining the proposed solution's impact on other components, as well as alternatives to the proposed solution) and (c) describing how the solution will in fact be implemented. The general consensus was that the PP should be rewritten and that the components may require restructuring either due to implementational and/or budgetary phasing.

2. Specific comments by component are presented as follows:

   A. PHCP - PP is fairly non-specific while annex is more of a series of recommendations than a plan of action. There is inadequate recurrent cost and staffing analysis. The curriculum for training (especially the language to be used in the south) should be described insofar as who will design curriculum, how the curriculum will be evaluated, what the refresher courses consist of, and how the candidates will be selected. Mention should also be made of the technical and linguistic qualifications of the expatriate technical assistance personnel. The PP posits assumptions which should be checked out regarding the availability of the logistics supply advisor in the Northern Primary Health Care project and the certainty that AMREF in fact wants to do this rather

substantial expansion of its type of activities in the south. The group also suggested that more attention needed to be paid to drugs: what is the intended arsenal, how is drug procurement to be phased with an operational logistic supply system (including warehouses); is the cold chain adequately addressed? It was suggested that the drug element might be more effectively included in a CIP once the health logistics are sorted out.

B. MCH - The problem addressed by this component is vaguely defined. More seriously, there appears to be a severe analytic discontinuity between the social fabric (man-woman relationships) and the proposed solution (how are the MCH personnel, who are necessarily women, going to obtain both informed guidance/instruction from higher level personnel and coordination with colleague VHW personnel - both largely male unless a completely separate parallel system is established. If this is the case, is adequate analysis available to support a full scale activity or is a study/pilot project more appropriate. The group suggested that this component might need sufficient additional analysis to preclude its inclusion in the present project.

C. MIS - The component should include more discussion on MIS concepts as related to the problems in the health sector (quality of input by illiterate VHWs) with less emphasis on the techniques of information manipulation.

D. Communications - This component operates on two levels: (1) Broadcasting - which again has to grapple with the man-woman social relationship in terms of village utilization of the information provided; and (2) Two-way radio - whether the system shouldn't be considered for a multiplicity of rural development needs (perhaps commencing a rural radio project rather than a health radio component). The group felt more attention on content rather than techniques would be valuable and that perhaps a pilot effort in the south using AMREF's experience elsewhere in Africa would be the most appropriate course.

E. Groundwater. The group strongly suggested that this component be omitted. A number of serious gaps were noted: (1) application of 611-B, (2) mention (in the IEE) of upcapped wells, (3) inadequate analysis of potential use for livestock and gardening, (4) omission of MOH in site selection process and (5) omission of discussion of human waste disposal and health education. The group suggested that a separate rural water project encompassing the water

requirements for health, agriculture, livestock, etc., might make a tidy, saleable package which could move quickly.

Three additional general comments were: (1) the evaluation should be done by an impartial evaluator, (2) the social soundness analysis was superficial on the nomads and (3) 611-a on construction normally is provided in a memo from AID engineering (in this case REDSO/EA).

This commentary is intended to provide you with impressions from AID/W and is not intended to represent a formal review of the project. Should the Mission concur with our recommendation that the paper be rewritten, AID/W would be glad to assist you in anyway necessary to get the job done.

ANNEX H

Engineering Analysis of Construction Activities

1. Introduction

The Health Sector Project will finance construction of facilities that support primary health care, training and logistics-supply programs of the Ministry of Health. While the Ministry is following a general six-year development plan, exact numbers and locations of all required facilities cannot be specified at this time. The project construction program represents only the highest priority requirements for facilities. Planning and implementation of construction programs will be the responsibility of existing Ministries, Administrations, Departments, Commissions, Councils and Private Organizations (in the Southern Region) that perform these functions now. This analysis will examine the capabilities of these existing systems as well as the details of the actual physical facilities.

2. Requirements

a. Warehouses

Warehouse facilities are required to receive, store and issue project and other MOH commodities. The few existing facilities in the country are totally inadequate. Twelve new warehouses are planned for project financing, seven for the northern provinces and five for the south. Warehouses will be approximately 25 m. long 9 m. wide and 4 m. high at the eaves.

b. Training Centers

The training division of the MOH and the project design team have determined requirements that cannot be met by existing facilities in the Sudan. New facilities are proposed for training of Nurse/Midwives and Community Health Workers.

Village Midwifery training centers will be constructed at En Nahud in North Kordofan and at Rumbek in Lakes Provinces. The centers will have a capacity to train 25 students. Other regions of the country have existing centers or plans for their construction by other donors.

Village midwives and Community Health Workers will be trained at new facilities to be constructed at existing health centers. Classroom, dining and dormitory facilities are provided for twenty students at one school in the west, and for ten to twelve students for the two schools in the south. Existing health center staff will act as tutors.

One Community Health Worker training center will be constructed in Bahr el Ghazal in the south. The facilities will accommodate twenty students and two tutors.

c. Dispensaries

The Ministry of Health plans to provide basic primary health care services to rural populations at Primary Health Care Complexes. Ideally, each complex will consist of five Primary Health Care Units, backstopped by one Dispensary. Each PHCU and Dispensary will provide initial services to 4,000 people. The Dispensary will also provide a higher level of services to the 24,000 people covered by the whole complex. PHCUs are being constructed throughout the country with self-help. The project will finance construction of the larger, more elaborate Dispensaries in those provinces with the greatest need. A total of twelve new Dispensaries (six in the western provinces of South Kordofan, North Darfur and South Darfur, six in the souther provinces of Bahr el Ghazal, Lakes and Upper Nile) is proposed. Each facility includes housing for two staff members.

d. Housing

Eleven houses will be constructed for AMREF personnel in the South. Five type T1 houses will be constructed in Juba. Two type T2 houses in Lakes, and Bahr el Ghazal will be constructed for personnel assigned to those areas. Two type T2 houses will be constructed for an existing health center at Dolieb Hill in Upper Nile Province.

e. MOH Expansion

Primary Health Care staff in Juba now use guest housing as office space. There is space on the ground floor of the MOH headquarters for the offices, but no funds to finish the work (floors and column supporting the finished second floor are existing). The project will finance the completion of the PHC office space.

3. Site Selection

Site selection will be the joint responsibility of the Soil Conservation, Land Use and Water Programming Administration, the (PWC) Ministry of Health, the

Ministry of Construction and Public Works, the Commission of Surveys and village councils. The MOH will determine what type and in what area facilities are required. The Soil Conservation, Land Use and Water Programming Administration will determine where, within that area, the development of water supply is most feasible. The Commission of Surveys and local or village councils are sites will have to meet physical criteria (e.g. adequate surface drainage, traffic access, etc.) established by PWC.

Once a need for a facility has been determined, the site selection process is based on technical issues (availability of water, conformation with village development plans, etc.). This portion of the process has been used or approved for use in other AID projects in the Sudan. Given the large number of facilities proposed, the widely scattered locations, the difficulties and cost of arranging travel and the limited USAID/Sudan manpower for monitoring, actual USAID inspection of each site is unfeasible. Only occasional spot checks, to assure USAID that the site selection process is working, are recommended.

Initially, closer monitoring of the process by which needs for Dispensaries are determined will be required. USAID will wish to see that the limited project support to these programs are used to the maximum effectiveness possivle. An equitable distribution between and within regions and provinces is necessary. There is no existing formalized process for making this determination, but one will have to be developed by provincial and central MOH officials and PVO personnel.

4. Plans and Specifications

The Health Projects Unit in the Architectural Section of PWC has developed standard plans and specifications for PHCUS, Dispensaries and Training Centers. The plans are designed for simplicity and versatility and can ve readily adapted to the different construction methods and materials used throughout the country. Plans for PHCUs and Dispensaries have been previously approved for use in AID's Northern and Southern Region Primary Health Care Projects.

PWC frequently imports prefabricated structures for large warehouse requirements. This practice will be continued for the warehouses financed for this project. Warehouse sizes are based on requirements determined by a logistics and supply expert. Floor plans are representative and building suppliers will be allowed to adjust dimensions to correspond to their standard products. Prefavricated building suppliers provide all plans necessary for constructing foundations and floors.

The expansion of the MOH headquarters in Juba will follow the existing plan developed by the Ministry of Housing and Public Utilities in the south (drawing number RMH/SR/77/46).

Foundations will be reinforced concrete or masonry strip footings. PWC varies actual dimensions depending on local soil conditions and anticipated loads. Reinforced concrete floor slabs for warehouses will be 15 cm. (6") thick. Floors of Dispensary, Health and Training Center buildings will be 10 cm (4") concrete or brick sealed with a concrete surface and troweled to a smooth finish. Floors will project high enough above grade to protect buildings from any surface water that can be anticipated.

Walls of all buildings (except prefabricated warehouses) will be constructed of brick, stone or cement block. Interior surfaces will be smooth plastered and painted to facilitate maintenance of clean and sanitary conditions. Where unburned (sun-dried) brick is used, both interior and exterior surfaces will be plastered. Roof trusses will be metal, designed to support the designated roofing. Roofing will be corrugated metal or asbestos sheeting. Doors and window frames will be metal.

Prefabricated warehouses will have clear spans fro maximum use of interior space and high gabled roof lines to facilitate building ventilation. All structural components will be fabricated of steel or aluminum. Actual specifications for live loads, wind loads, door and window locations and ventilation accessories will be determined by PWC and USAID engineers. Use of local materials for non-load bearing exterior walls will be considered if costs and availability compare favorably with prefabricated components.

Warehouses will use a combination of movable partitions and shelving units to separate office and storage areas. In the South partitions also will be used for equipment/vehicle maintenance areas.

5. Construction

The Ministry of Construction and Public Works is responsible for erection of all government buildings in the Sudan and will be responsible for all project construction activities in the North. PWC has a central office in Khartoum and departments, represented by Assistant Commissioners, in each province. Sections of PWC handle design, procurement (both local and foreign), cost estimating, contracting, transportation and supervision. Actual construction is performed by force account labor or competitively procured private contractors.

By U. S. standards, PWC performance is poor; construction times are long and building quality is low. For U.S. TA occupied facilities on other AID projects in the Sudan, construction by private contractors, supervised or monitored by U.S. or PVO project personnel has been recommended. At the same time, however, it has been recognized that PWC built facilities are suitable to conditions in the Sudan and are acceptable to the Sudanese people.

Southern Region activities will be administered by AMREF, the PVO currently implementing USAID's Southern Primary Health Care project. Construction will be performed by private contractors and other PVOs operating in the South. AMREF full time Project Manager will provide overall construction management and supervision in collaboration with the Building Supervisor from the Primary Health Care Project.

6. Implementation Schedule

Delays in construction by PWC can be attributed to two major factors, a lack of operating capital and transportation difficulties. The project will provide PWC the capital, including foreign exchange, to cover materials and labor costs of the proposed construction activites. Trucks procured for the logistics and supply component of the project will be available for transport of materials to construction sites. Foreign exchange will be provided for procurement of fuel.

With the project assistance, the determining construction time factors become PWC manpower/management capabilities and transport constraints caused by poor roads and bad weather. From discussions with PWC officials and other investigations performed by USAID engineers, potential construction times of six months for a Training Center facility, two months for a prefabricated warehouse (including foundation), and one month for a Dispensary are estimated. The proposed construction schedule reflects a more realistic estimate of PWC capabilities, with allowances made for improved management and transportation arrangements as the project progresses.

Construction time estimates for the Southern Region are based on AMREF experience with their ongoing health project. The phasing proposed reflects the limited private contractor capacity and availability of skilled labor in the region as well as the total dependence on materials and fuel shipped from Kenya through Uganda.

7. Cost Estimates

Cost estimates for local construction are based on information from the PWC Quantity Surveyor's and Architect's offices and on other recent USAID project engineering analyses for theSudan. A basic cost of $370/m^2$ is used for construction in the western regions of the country. 25% is added for construction in the southern region, for a cost of $460/m^2$. An additional 15% is added to all building costs to cover site works, fences and ablution blocks.

Costs for prefabricated warehouses are based on quotations submitted by suppliers in the U.S. and on investigation performed by USAID engineers in the Sudan. Foundation costs are estimated at $55/m^2$ in Port Sudan and Khartoum; $60/m^2$ in Darfur and $88/m^2$ in the South. Transportation is estimated at 35% of the structures cost to Port Sudan, 75% of the structures cost to the South via Mombasa and $120/ton from Port Sudan to Khartoum, $200/ton to Kordofan and $400/ton to Darfur. Erection is estimated at 15% of the structures cost.

Current year cost estimates for each type of facility are:

Warehouse ($232m^2$)

	Port Sudan	Khartoum	Kordofan	Darfur	South
Structure	15,100	15,100	15,100	15,100	15,100
Foundation	12,800	12,800	14,000	15,400	20,500
Transportation (13 tons)	5,300	5,300 1,600	5,300 2,600	5,300 5,200	5,300 6,000
Erection	2,300	2,300	2,300	2,300	2,300
Sub-Total	35,500	37,100	39,300	43,300	49,200
Site Works	5,300	5,600	5,900	6,500	7,400
Total	40,800	42,700	45,200	49,800	56,600

Housing (Costs are in U.S. Dollars)

Type T_1 (total area of $148m^2$)

Component	Cost (South)
Building	68,100
Site Works	10,200
Total Cost	78,300

Type T_2 (Model A) (Total area of 104 m^2)

Component	Cost (West)	Cost (South)
Building	38,500	47,800
Site Works	5,800	7,200
Total Cost	44,300	55,000

Village Midwifery Training Center

Facility	Quantity	Area (m^2)
Classroom	2	150
Office	2	20
Workroom	2	40
Storeroom	2	35
Dormitory	1	250
Kitchen/dining	1	150
Other	3	60
Total Area		750

Component	Cost (West)	(South)
Buildings	250,900	324,300
Site Works	39,100	48,600
2 T_2 houses	88,600	110,000
Total Cost	388,600	482,900

District Training Center (South)

Facility	Area (m^2)
Classroom/dining	75
Dormitory	120
Total Area	195

Component	Cost
Buildings	89,700
Site works	13,500
Total cost	103,200

District Training Center (2 East, 2 West)

Facility	Quantity	Area (m^2)
Classroom	2	120
Workroom	1	20
Storeroom	1	20
Dormitory	1	200
Kitchen/dining	1	120
Other	3	60
Total Area		540

Component	Cost (West)
Buildings	199,800
Site Works	30,000
Total Cost	229,800

Community Health Worker Training Center (South)

Facility	Quantity	Area (m^2)
Classroom	2	120
Office	2	20
Workroom	1	20
Storeroom	1	20
Dormitory	1	200
Kitchen/dining	1	120
Other	3	60
Total Area		560

Component	Cost (South)
Buildings	257,600
Site Works	38,600
2 T_2 houses	110,000
Total Cost	406,200

MOH Expansion (Juba)

Total area of 230 m^2

Floors, Columns, Ceiling (unfinished)

are existing

Cost/m^2 estimated at 50% of new construction cost

.50 x 460 = 230/m^2

Total Cost = 230 x 230 = 52,900

Dispensary (Total area of 82m^2)

Component	(West)	(South)
Buildings	30,300	37,700
Site works	4,600	5,700
2 T_2 houses	88,600	110,000
Total Cost	123,500	153,400

Inflation is estimated at 20% per year for construction costs and materials from the U.S. and 40% for costs in the Sudan. First year construction activities are assumed to take place in 1981. Inflation factors for all years of construction are:

Project year	FX (20%/yr)	LC(40%/yr)
1	.20	.40
2	.44	.96
3	.73	1.74
4	1.07	2.84

SCHEDULE FOR CONSTRUCTION

Province	Facility			
	Year 1	Year 2	Year 3	Year 4
(East)				
Red Sea	Warehouse Warehouse			
(Central)				
Khartoum	Warehouse			
(West)				
N. Kordofan	Warehouse		VMTC	
S..Kordofan	Warehouse	DIST TC	DISP DISP	
N. Darfur	Warehouse		DISP	DISP
S. Darfur	Warehouse		DISP	DISP
(South)				
Bahr el Ghazal	Warehouse	CHW TC T_2 House	DIST TC T_2 House	DISP DISP
Lakes	T House Warehouse	T_2 House		DISP DISP
Jonglei	Warehouse			
Upper Nile	T_2 House T_2 House Warehouse	DIST TC	DISP DISP	
E. Equatoria	T1 House T1 House T1 House Warehouse T1 House	MOH Expansion	T1 House	

COST SUMMARY

Construction	Year 1 LC	Year 1 FX	Year 2 LC	Year 2 FX	Year 3 LC	Year 3 FX	Year 4 LC	Year 4 FX	Year 5 LC	Year 5 FX	All Years LC	All Years FX	All Years Total
Warehouse (Port Sudan 2)	27200	54400											
(Khartoum 1)	14200	28500											
(Kordofan 2)	30100	60300											
(Darfur 2)	33200	66400											
(South 5)	94600	189000											
Village/Midwive TC (W)					259100	129500							
(S)					161000	321900							
Community Health Worker TC (S)			135400	270800									
District TC (W 1)			153200	76600									
(S 2)			34400	68800	34400	68800							
Dispensary (W 6)					329400	164700	164700	82300					
(S 6)					102300	204500	204600	409000					
T_1 House (S 5)	104400	208800			26100	52200							
T_2 House (S 6)	54900	110100	36600	73400	18300	36700							
MOH Expansion (S)			17600	35300									
Sub Total (4/80 Costs)	358,600	717,500	377200	524900	930600	978300	369300	491300			2035100	2712000	4747100
Inflation 20% FX		144000		231000		712200		527500				1614700	1614700
40% LC	143000		362100		1623000		1049400				3177500		3177500
													9,539,300

8. Administrative Arrangements

a. Approvals

After the Project Agreement is signed, personnel of the Ministry of Health and Public Works at the provincial and central levels, joined by AMREF project staff in the South, will develop work plans for programming the first year construction activities. The plan will include sites, final plans, cost estimates, foreign procurement requirements and proposed construction schedules. MOH and AMREF (in the South) approval of sites and plans, Town Council approval of sites and Public Works approval of sites, plans and cost estimates will be required. USAID approval of the plan will be required before any disbursements can be made. Actual first year obligations will be based on the plan in this Engineering Analysis.

Obligation for all subsequent years will be based on USAID approval of Annual Work Plans. These work plans will include the same details as the first year plan, plus imputs from project TA personnel in the North for information (e.g., actual costs and construction times) on construction in the previous year. USAID will focus special attention on the priorities for proposed construction and the feasibility of the plan given the previous year's performance.

b. Monitoring

USAID/S and REDSO/EA engineers will be unable to perform site, progress and final inspections of all the construction activities. The area to cover is too large (the Sudan is about the size of the U.S. east of the Mississippi River) and travel times are too long. In addition, construction components of other AID projects must be managed.

To assist the AID engineer in the North, local Sudanese engineering services will be contracted directly by USAID (with project funds) to perform most monitoring functions. The local firm will inspect sites on a random, spot check basis, will review construction plans, cost estimates and Public Works procurement activities, will monitor construction progress and will make final inspections. AID engineers will oversee the activities of the local firm and will occasionally participate in actual site visits.

For activities in the Southern Region, AID will rely on the services of AMREF's Building Supervisor and Project Manager for most monitoring. The system will be similar to that used in AID's ongoing Southern Primary Health Care OPG.

c. Disbursements

With its foreign reserves and balance of payments problems, the GOS will be unable to self-finance procurement of imported materials. USAID will open letters of credit with U.S. banks for the foreign currency components of each project years construction obligation. Public Works will procure materials against that credit in accordance with the approved Annual Workplan. USAID will provide advances to finance local currency costs while construction is underway. Schedules for advances and final reimbursement procedures will be developed after preparation of each annual workplan.

d. Schedule of Activities

Action	Months	Date
ProAg signed	0	8/80
Initial Construction Workplans (North and South)	5	1/81
Annual Workplan No. 2	17	1/82
Annual Workplan No. 3	29	1/83
Annual Workplan No. 4	41	1/84

9. FAA Section

611(a) (as amended)

a. Planning

Analyses by the logistics, training and maternal child health experts on the design team have shown that the Ministry of

Health needs all the facilities planned for construction in this project and more. New warehouses and training centers are required in all parts of the country but the project will finance those in just six northern and five southern provinces. Within the seven provinces covered by the project, a need exists for over 350 dispensaries; the project plans to construct only 12. The limits on project construction are partly budgetary, but two other factors complement the decision to finance only a portion of the MOH's construction requirements.

One of these factors is the MOH's capability to properly utilize new facilities. Their ability to operate the logistics-supply system, to provide tutors and recruit students for training centers and to properly staff dispensaries has been assessed. As a result. a construction program reflecting the capability to utilize facilities is planned.

The second factor is the capacity to construct new facilities. In the North, the Ministry of Construction and Public Works has a poor reputation largely undeserved, for timely completion of construction programs. They have rarely been given the financila resources necessary to fully utilize their technical skills. Simply supplying the financial resources will not make an immediate improvement. The administrative system has been long underutilized and time will be needed to get it functioning properly. The planned implementation schedule pro-northern construction by the fourth project year.

The situation in the South is completely different, but leads to the same scheduling. The implementation agency, AMREF, will subcontract to private contractors do not have the administrative problems of PWC, but are faced with considerable logistics constraints. All building materials and most fuel comes to the South from Kenya, through Uganda. The conflict in Uganda halted all supplies for six months during 1978 and 1979. The border was earlier closed for three months as a quarantine measure during an outbreak of Green Monkey Disease. These are difficult factors to plan for, but the implementation schedule for the South is consistent with progress made over the past few years.

The implementation schedule is also based on priorities for construction as determined by the project design team. In general, there are warehouses first, training centers second and dispensaries third. If, during the life of the project, USAID project managers and MOH officials agree that priorities have changed, the phasing of construction activities can be changed as well.

b. Cost Estimates

Cost estimates are based on actual bids received from private contractors and the latest information available to quantity surveyors in PWC. Costs have been checked and are consistent with cost analyses for other recently designed USAID projects in the Sudan. Inflation figures are based on the latest information available.

c. Determination

The construction plan developed by the project designers is suitable and feasible given the project objectives. The cost estimates are reasonable and reasonably firm. Therefore, the requirements stated in Section 611 (a) of the FAA (as amended) are determined to be met by the construction program.

Drafted by S. Baker REDSO/EA April, 24, 1980

AID 1020-25 (11-79)

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1980 to FY 1980
Total U.S. Funding $17.9 Million
Date Prepared: June 1980

Project Title & Number: Sudan Rural Health Support - 650-0030

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: To improve the health status of the rural poor	**Measures of Goal Achievement:** In project area: Decreased morbidity Decreased mortality	Statistical data - MOH	**Assumptions for achieving goal targets:** 1. National priority for health continues. 2. PHCP and MCH/FP services can have measurable impact on health status.
Project Purpose: To strengthen the capability of the GOS to provide primary health care and MCH/FP services in the regions of the project area	**Conditions that will indicate purpose has been achieved: End of project status.** Rural PHCP/MCH/FP services operational in seven provinces	Project evaluations and periodic reports and field trips. Statistical data.	**Assumptions for achieving purpose:** 1. GOS commitment to regionalization continues. 2. GOS planning/budgeting system remains decentralized.
Outputs: 1. Trained front-line health personnel 2. Training facilities constructed 3. Dispensaries constructed 4. Logistic/supply facilities constructed 5. Radio health education program operational 6. MCH/FP integrated into PHCP services at village level 7. Regional planning/information system operational	**Magnitude of Outputs:** 1. 4863 personnel trained 2. 6 training facilities completed 3. 12 dispensaries completed 4. 12 warehouses, 8 trucks 5. 7 program cycles produced and repeated 6. 1860 trainees in MCH/FP 7. 3 regional plans/budgets developed	1. MOH records 2. MPW records 3. MPW records 4. MPW records 5. AMREF reports AID evaluation 6. MOH records 7. Regional budgets	**Assumptions for achieving outputs:** 1. Trainable personnel available 2. MPW capacity adequate for construction schedule 3. Sufficient trainers available to expand training system
Inputs: Technical Assistance-Long term - US Short term- US Construction - US&GOS Commodities - US Participant Training - US Local Personnel Support - GOS Local Training Support - GOS Other Costs - US&GOS	**Implementation Target (Type and Quantity)** See Detailed Budget Table ___.	1. GOS Ministry of Finance records 2. USAID Controller records 3. AID/W Controller records	**Assumptions for providing inputs:** 1. AID funding available on timely basis 2. GOS budget support available 3. GOS/AID provide adequate counterpart funding.

ANNEX J: RELATIONSHIP AND CONTRIBUTION OF OTHER DONORS INCLUDING PVOs

The donor community, including foreign governments, bilateral and multilateral organizations and private voluntary organizations, has been very active in the Sudan. These activities have for the most part, been small and have had a limited outreach.

To support the health care delivery system, $11.7 million was committed in 1977.

Since 1972, special emphasis has been given to assisting the Southern Region. According to a UNDP report of October, 1978, 50 donors are contributing an estimated total of $132.3 million to the South. Of this amount, a significant portion is allocated for project support costs due to the high cost of implementing development projects in this region because of its isolation and limited infrastructure.

The project design team has made a concerted effort to assure that the target population under the project does not receive duplicate assistance from other donors.

Private Voluntary Organizations

The majority of private voluntary organizations (PVO) are church-related groups. Their initial involvement in the South was a response to that area's relief needs following the Addis Ababa accord in 1972. Devastated by 17 years of civil disturbance, the South desperately needed food, medicines and clothing. As these immediate needs were filled by the donor community many groups began to look beyond the relief effort.

They found that assistance was needed in construction, health, education, agriculture and management. Each of the PVOs began to build on their existing activities to include other areas of technical assistance. This process, however, was not a coordinated and planned effort. PVOs identified projects in regions in which they were already working in order to "fill in the gaps".

Some of the PVOs are very small groups working exclusively in rural areas. This isolates them from other groups conducting similar work. Though there is a strong spirit of cooperation as far as sharing and lending of supplies, little attempt is being made to coordinate their programs.

The larger and more active PVOs are briefly described below.

Sudan Council of Churches (SCC) - The SCC is the only indigenous PVO in Sudan. It maintains an office in Juba as well as one in Khartoum. There

are approximately 60 administrative senior staff, most of whom are Sudanese.

For the past seven years, the SCC has been working in South on various construction projects including building of hospitals. Recently they were requested by the MOH to assist with the PHCP in Gederef.

A survey team assessed the PHCP needs in the Bentiu district of Upper Nile Province in January 1979. Teams will also look at other districts in the near future. The areas in which the SCC is prepared to assist are:

- construction of dispensaries
- planning efforts through sociological studies of the community and its leadership
- immunization programs
- training programs (the SCC is exploring ways it can assist with training, particularly in conducting classes in the local language).

The SCC has its own logistics system to supply commodities to the South. It is planning to help local communities set up self-supporting pharmacies to improve the drug supply situation.

The SCC is also involved in a well-drilling project in Rumbek, though the rig is presently not operating. Over the last two years, 27 wells have been dug. In addition, the SCC is recruiting people for hand-dug wells and hopes to construct 8 or 10 of these a year.

The major constraints cited by SCC in its work in the South were the lack of government infrastructure, communications and transportation.

Catholic Relief Services (CRS) - CRS involvement in the Sudan began with relief efforts in the South in 1972. Headquarters are now located in Khartoum and programs are operating primarily in the North.

The main activity in the health area has been a nutrition program for pre-school children.

CRS has also been involved in developing the water supply system in Hella Mazo and a rural sanitation project in Torit District. Warehouses for CRS donated food have been built in Khartoum and Kassala Province.

Proposed projects include expansion in nutrition, safe water and primary health care.

The CRS cited particular constraints to program expansion as poor infrastructure in the South and lack of transportation throughout the country.

International Voluntary Services, Inc. (IVS) - IVS is currently involved in safe water projects in the South and at Wadi Halfa. Staff are surveying, testing and drilling wells in selected rural areas in Southern Sudan. Drilling teams are recruited from the village and supplemented by skilled workers. Through this local participation, the villagers learn how to drill the well and, more importantly, how to keep it operating.

Among the chief constraints encountered by IVS was the lack of an effective administrator for the program in the MOH. Improvement of the infrastructure is critical to the success and continuation of rural water programs.

Sudan Interior Mission (SIM) - The SIM is an inter-denominational, international organization begun in 1893 in what was then known as Sudan. At present, SIM operates 1200 missions in nine countries in Africa. Its work in Sudan began in 1937, but was terminated during the civil disturbance in the South. In 1972, SIM returned to the area to assist in relief work and development efforts.

Presently, SIM has a staff of 25 people including two doctors and nine nurses. Its health programs are concentrated in the northern section of Upper Nile Province.

SIM's participation in the PHCP focuses on the building of dispensaries in five locations. One is completed with the others, now in various stages of construction, to be finished by next year. Other activities include helping to select PHCU sites, assisting in the selection of CHW trainees, and the provision of simple curative activities. These include vaccinations and anti-malarial drugs, information gathering of morbidity and mortality statistics, and working with local midwives to "fill-in" until CHWs are trained.

SIM has developed a two and a six year plan for assistance to the PHCP. It will be submitted to possible donors for funding. The organizations is also considering expanding its activities to Jonglei Province. A meeting is scheduled for May to evaluate its current programs and assess the future direction that SIM will take.

ACROSS - ACROSS was begun in 1972 as an umbrella organization primarily for church-related relief efforts in the South. It now includes 15 development oriented groups including three U.S. PVOs. In addition to its activities in the South, ACROSS is doing some limited work in Southern Kordofan Province.

Health activities have been centered in Western Equatoria, Jonglei, and Eastern Equatoria Provinces. Present policy states that ACROSS programs should support primary health care instead of limited curative programs.

ACROSS activities include:

1. Running of clinics with a function similar to that of Government dispensaries.

2. Running of clinics specifically for mothers and children.

3. Mobile health outreach with both general and MCH clinics.

4. Rural water activities.

Personnel are provided until the Sudanese RMOH can staff the facilities. In addition to curative care, health education and health promotion activities are provided, often through Sudanese helpers who have been trained for this activity.

ACROSS clinics include antenatal care, immunization of pregnant mothers with tetanus toxoid, regular children's clinic as well as curative functions. These are located at Bahr Olo, Yeri, Mvolo and Wulu.

Mobile health outreach work is done from bases at Mundri, Wandi and Lui. General curative clinics are held in villages where there are no other health services. Under-five year olds are brought in for regular assessment. Local Sudanese women have been trained in health care for young children and pregnant women.

ACROSS has also been involved in community awareness activities and has helped in the planning and implementation of the PHCP. When a PHCU is established, ACROSS ceases activities in that location, however, the nurses are available to the new CHW to discuss his work and problems he may face.

ACROSS is now doing survey work in the pre-implementation phase of a pilot program for PHCP for semi-nomadic tribes. Planning is underway to test the feasibility of local-based village midwifery programs for traditional midwives who would be able to provide a satisfactory level of MCH care in their own communities.

ACORD/CUSO - These two groups are made up of European and Canadian organizations. Staff is currently working in the Southern and Western Provinces to assist in implementing the PHCP. Their activities include supervision of CHWs and NCHWs, community education and rural water activities.

AMREF - AMREF is a U.S. organization based in Nairobi and currently implementing the Southern Sudan Primary Health Care Program. This program is discussed in the project paper.

Norwegian Church AID (NCA) - NCA is providing rural development assistance in the Torit and Kapoeta Districts of Eastern Equatoria. A large expatriate staff of 44 people are providing expertise to several sectors

including health. It is a well organized effort with support stations in Juba and Nairobi to provide logistical help and supplies.

Lutheran World Federation (LWF) - This organization has been mainly involved in construction of health centers and PHCUs. In addition, it provides drugs, equipment and educational material to hospitals, health centers, and dispensaries in the South.

It is expected that in the future LWF will do less construction and concentrate on development activities in the health sector.

German Medical Team - This team is functioning in Eastern and Western Equatoria Provinces with programs in construction, renovation, training, MCH and immunization services, and a water program. Construction involves new dispensaries. In the training area, tutor nurses have been provided for training medical assistants, CHWs and village midwives.

Misereor - An institute for the training of several categories of health personnel is in the process of construction and should be available within two years. This institute at Wau will train health visitors, medical assistants, nurse midwives and sanitary-overseers.

Damien Foundation - This group operates a leprosy control program for Upper Nile and Jonglei Provinces in addition to a health center in Mongalla.

Other International Donors - Other international donors include the UNDP, WHO, Federal Republic of Germany, United States, the United Kingdom, the Netherlands, and the African Development Bank. Their commitments include technical assistance, drugs, equipment, vehicles and construction activities to support the PHC and SW programs.

The African Development Fund is negotiating a $7 million loan with the GOS to supplement the resources for implementing the PHCP.

The project will provide assistance to Northern and Southern Darfur, Blue Nile and White Nile Provinces for a period of three years. Activities will include:

- construction of 25 dispensaries and 125 PHCUs;
- equipment and instruments for those dispensaries and PHCUs;
- vehicles;
- long and short term technical assistance.

The Netherlands Technical Assistance Program

During 1978-79 the Dutch provided approximately three and a half million dollars to the primary health care system, primarily for instruments and drugs for primary health care units, (PHCUs) and provision of safe water supplies in some rural areas. South Darfur in the North, and Jonglei

they are constructing a CHW training school at Baidit including equipment and water supply and expect completion in October 1980. They are also sponsoring a village survey in Jonglei to identify TBAs and have requested UNICEF assistance with training and provision of midwifery kits for the trained TBAs.

In North and South Darfur the Dutch are providing assistance with construction and equipment of six PHC complexes each consisting of one dispensary, five primary health care units and one medical assistant's house.

It is likely that the Dutch will also provide assistance in Kassala Province, although no decision has yet been reached on the form this assistance will take.

UNICEF is providing assistance to the Primary Health Care Program in several areas, including orientation training of all levels of health workers, the provision of basic drug supplies to the 1760 primary health care units throughout the country and implementation with WHO technical assistance of the expanded program of immunization (EPI). The pilot phase of the EPI has been completed in Khartoum, Port Sudan, Wad Medani and Gezira province. The program will shortly be extended to include 35 areas throughout the country. Orientation training for all medical officers, nurses, health visitors and midwives is scheduled to be completed in 1982. UNICEF is also beginning a distribution and training program to encourage the use of oral rehydration salts, as an integral part of the primary health care program.

WHO

WHO, in cooperation with the Ministry of Health has developed a major $160 million health project designed to control water-borne diseases, including malaria, bilharzia and the diarrheal diseases, in the Sudan's irrigated agricultural schemes. The project got underway in 1979, and plans to develop alternative methods for prevention and control of water borne diseases, over a period of ten years. A donor meeting in February 1980 solicited contributions from international donors.

WHO is also intending to undertake a project to enhance the quality of planning/budgetting at the provincial level. Details of this project were unavailable but it is expected to complement USAID activities in this area.

Catholic Relieve Services

CRS involvement in the Sudan began with relief efforts in the South in 1972. Headquarters are now located in Khartoum and programs are operating primarily in the North, including Khartoum, Kassala, and Red Sea provinces and Wadi Halfa.

The main activity in the health area has been a nutrition program for pre-school children. During FY 79 under PL 480, Title II, CRS provided 30,000 pre-school children with food supplements of non-fat dry milk and oil.

Within the three cities of Khartoum, Khartoum North and Omdurman CRS is supporting under-five clinics in 33 health centers. The children are weighed, immunized, given supplementary food and the mothers are taught basic nutrition.

CRS has also been involved in developing the water supply system in Hella Maza and a rural sanitation project in Torit District in the South. Warehouses for CRS donated food have been built in Khartoum and Kassala province.

Proposed projects include expansion in nutrition, safe water and primary health care. Among these is funding of primary health care orientation courses in the 12 northern provinces, in cooperation with UNICEF and participation in a multi-donor rural development project in Wadi Halfa.

CRS cited particular constraints to program expansion as poor infrastructure in the South and lack of transportation throughout the country.

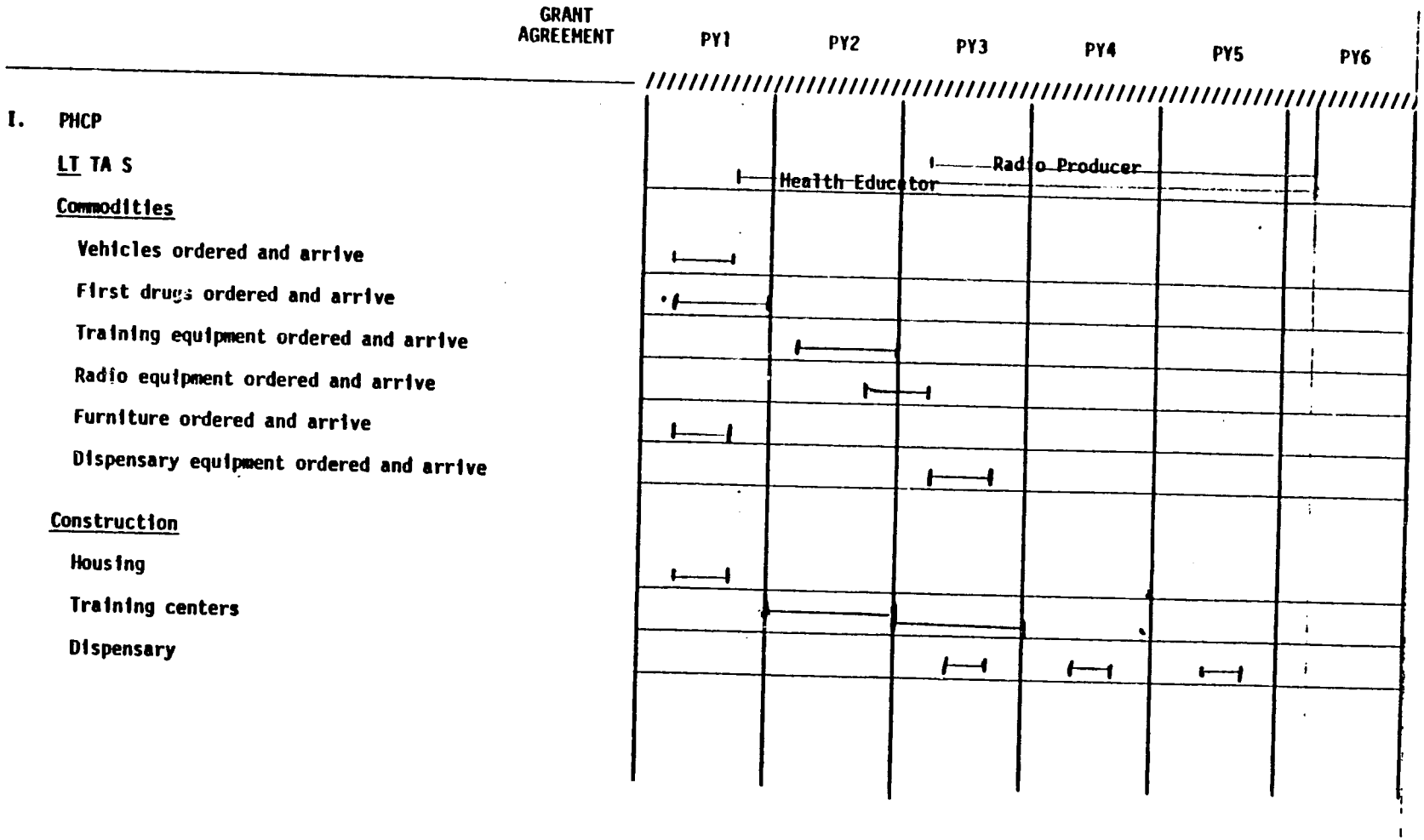
Annex K

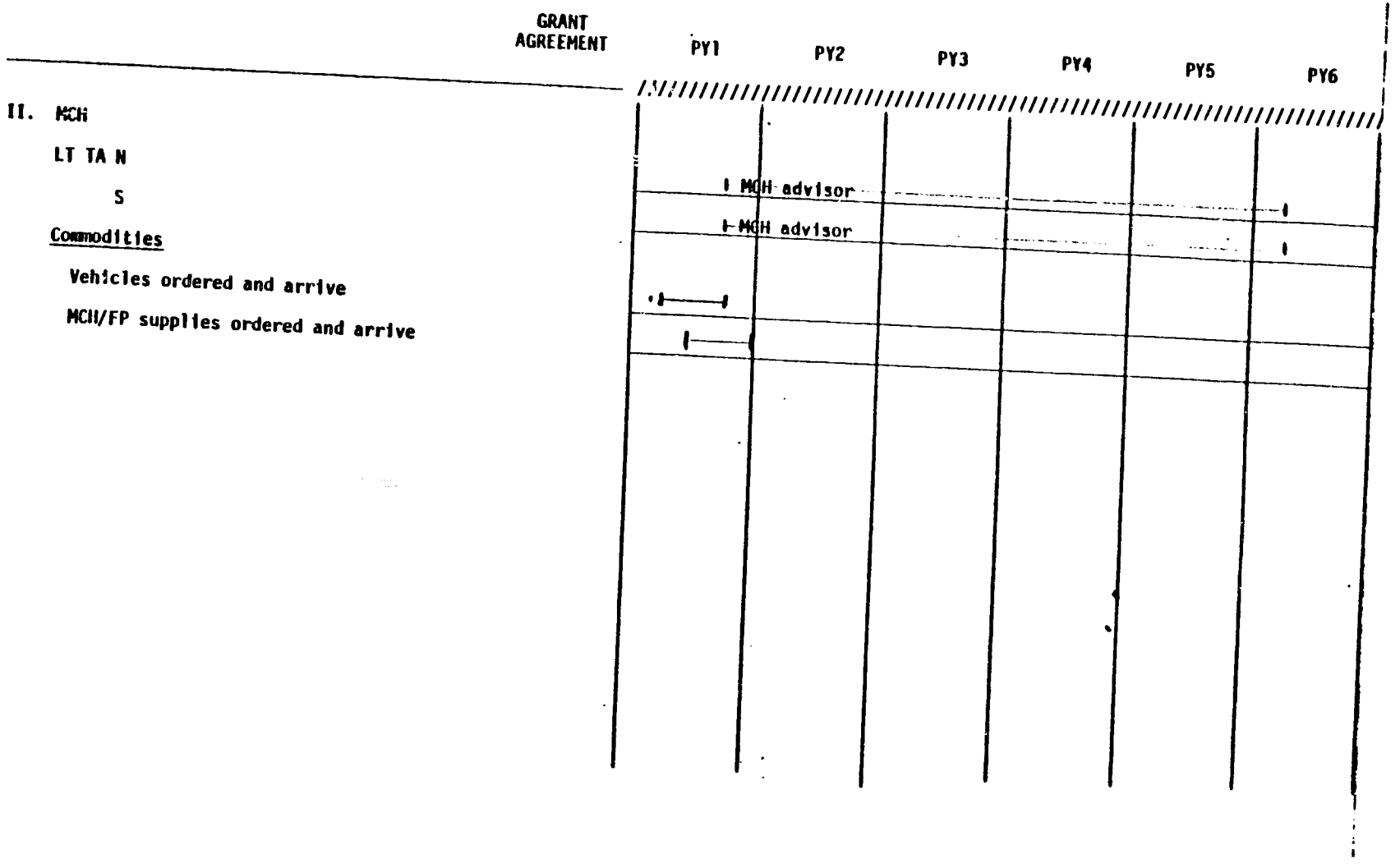
ACTIVITY SCHEDULE

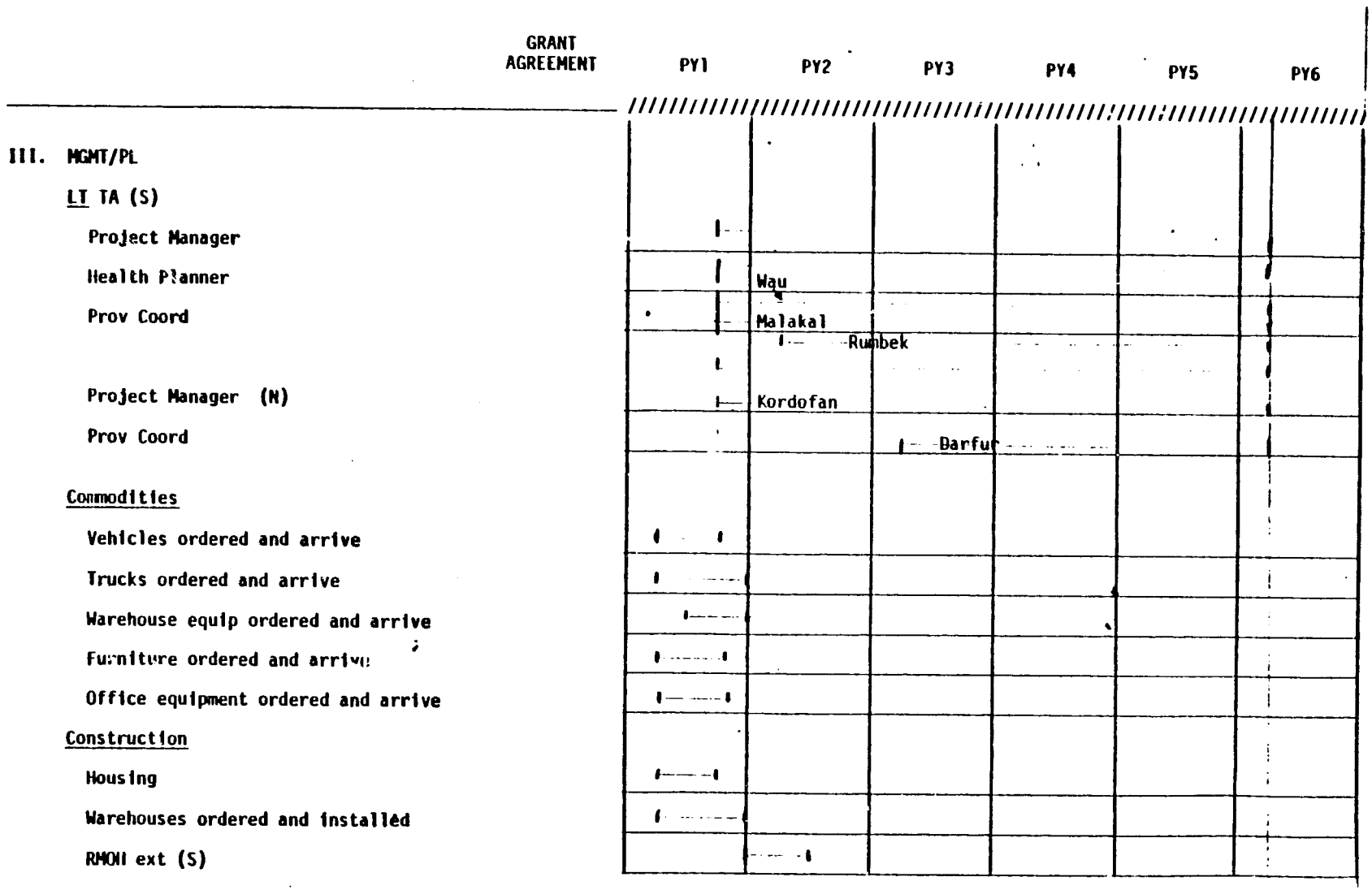
Activity	Month of Year	Month of Project	Resp. Agent
PP submitted to AID/W	6/80		USAID/S
PP approved	7/80		AID/W
Pro Ag signed	8/80	0	USAID/GOS
PIO/T sent to AID/W	9/80	1	USAID
RFP issued	10/80	2	AID/W
AMRF contract signed	11/80	3	AID/W
AMRF commences procurement, proj. mgr. vehicles, furniture, office equip.	11/80	3	AMRF
PIO/C issued for trucks & vehicles for North	11/80	3	USAID/S
Warehouses (prefac elements) ordered	11/80	3	USAID/S
Housing(S) commenced	11/80	3	AMRF
Contract (N) bidders submit	1/81	5	AID/W
Initial drug supply ordered	2/81	6	AMRF/USAID
Initial MCH/FP supply ordered	2/81	6	AMRF/USAID
WH equipment ordered	2/81	6	USAID
Contract signed (N)	3/81	7	AID/W
Proj. Mgr (N) on site	5/81	9	CTR
TA (LT) (S) on site	5/81	9	AMRF
TA (LT) (N) on site	5/81	9	CTR
Housing (S) completed	5/81	9	AMRF
Office equip., furniture, vehicles arrive	5/81	9	USAID/AMRF
Warehouses installed	8/81	12	GOS
Warehouse equip. arrives	8/81	12	GOS

Activity	Month of Year	Month of Project	Resp. Agent
Trucks arrive	8/81	12	CTR/AMRF
MCH/FP supplies arrive	8/81	12	CTR/AMRF
Drugs arrive	8/81	12	CTR/AMRF
1st Trg. centers const. starts	8/81	12	GOS
RMOH (S)	8/81	12	GOS
Trg. Center equip. ordered	11/81	15	CTR/AMRF
RMOH extension complete	1/82	17	GOS
Radio equip ordered	5/82	21	AMRF
1st Trg. Centers complete	8/82	24	GOS
Trg. equip arrives/installed	8/82	24	CTR/AMRF
2nd Trg. Center starts construction	8/82	24	GOS
In-depth evaluation	9/82	25	AID/CTR/AMRF/GOS
Radio equip. arrives	11/82	27	AMRF
Radio producer arrives	11/82	27	AMRF
Prov. Coord (N) Darfur arrives	11/82	27	CTR
1st Disp. equip. ordered	11/82	27	AMRF/CTR
First disp. construction starts	1/83	29	GOS
First disp. complete	5/83	33	GOS
First disp. equip. arrives	5/83	33	CTR/AMRF
Second Trg. centers complete	8/83	36	GOS
Second Disp. construction starts	1/84	41	GOS
Second Disp Complete	5/84	45	GOS
Third Disp. construction starts	1/85	53	GOS
Third Disp. complete	5/85	57	GOS
Final Evaluation	9/85	61	AID/CTR/AMRF/GOS
TA departs	11/85	63	CTR/AMRF

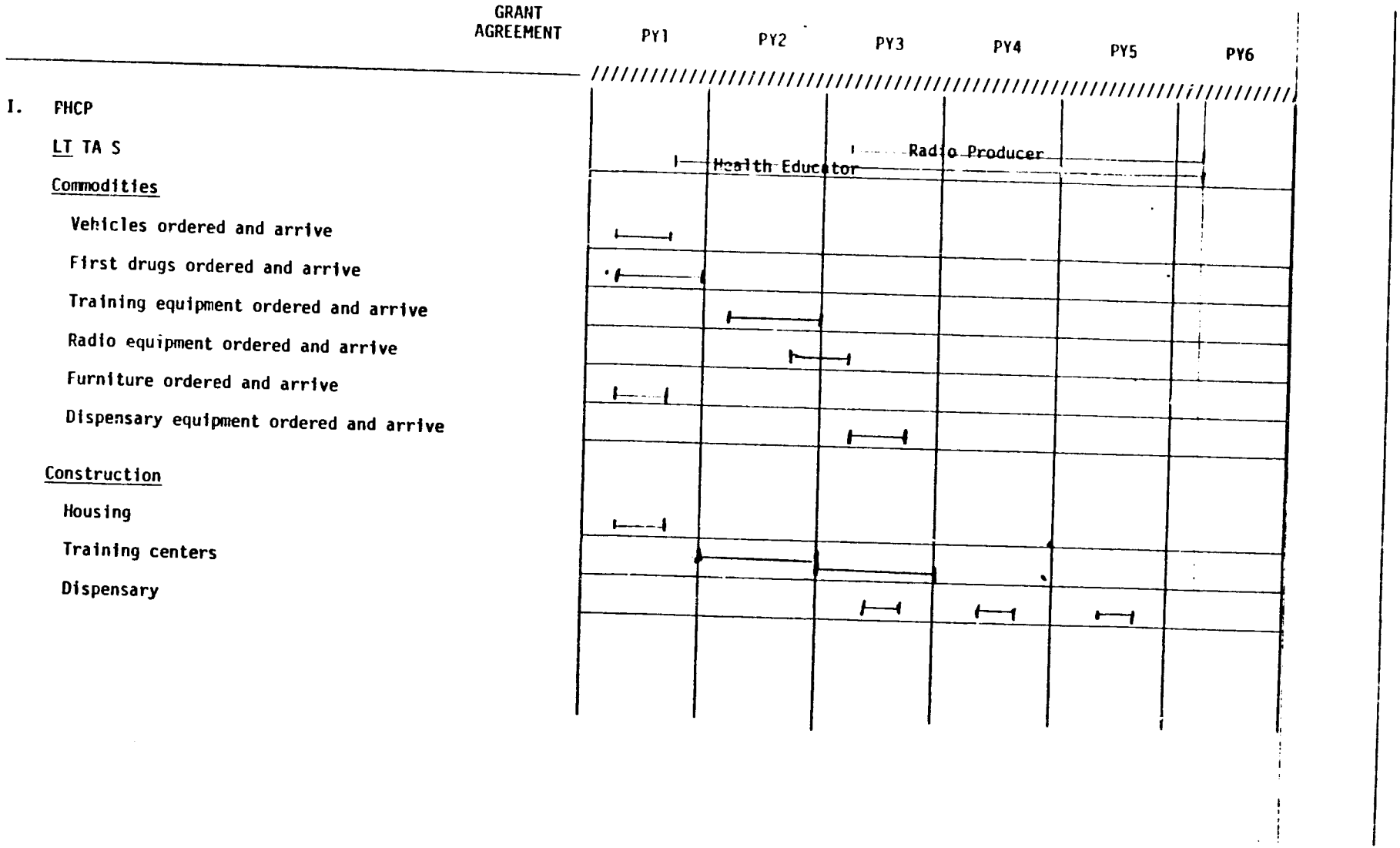
BAR CHART OF PROJECT ACTIVITIES

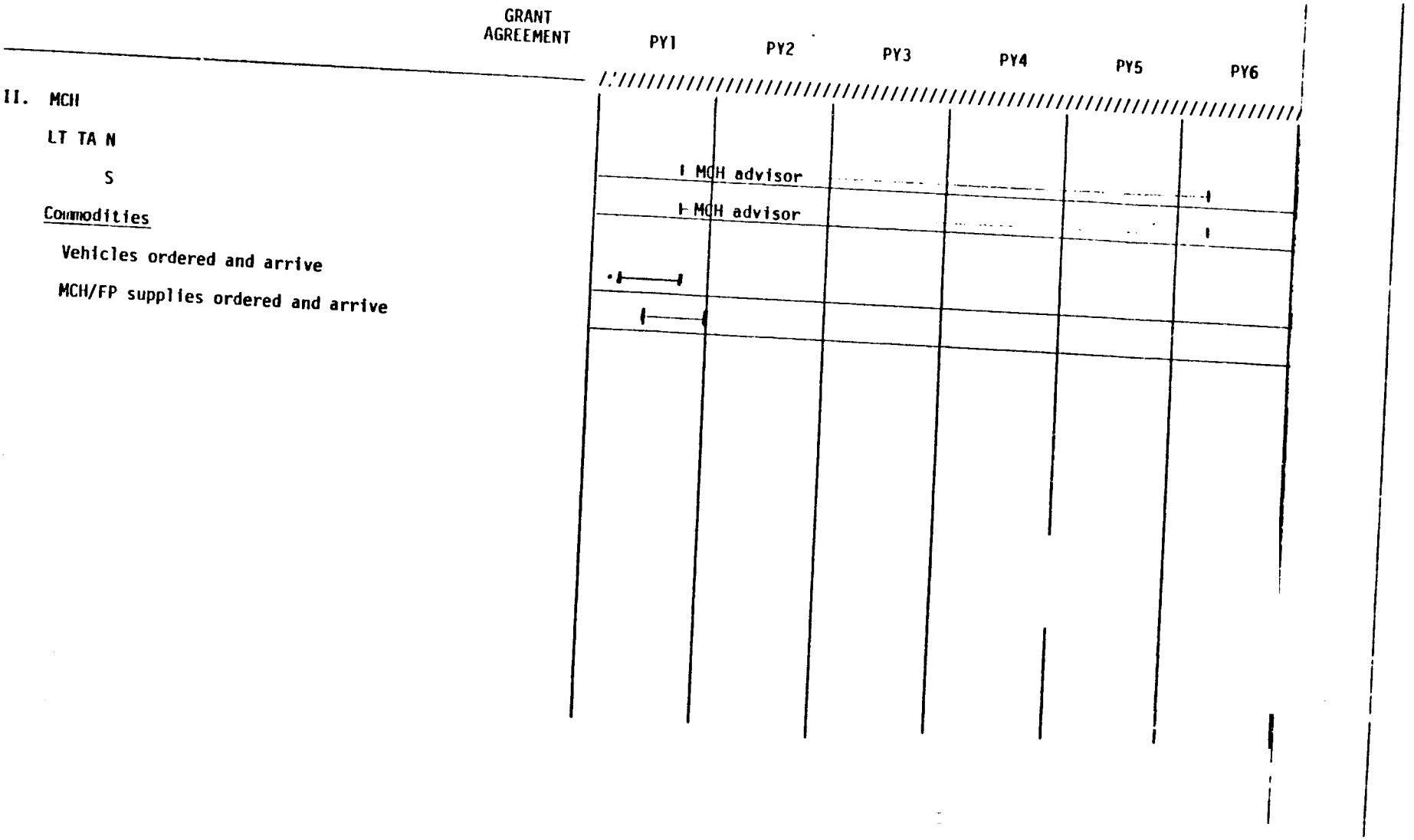


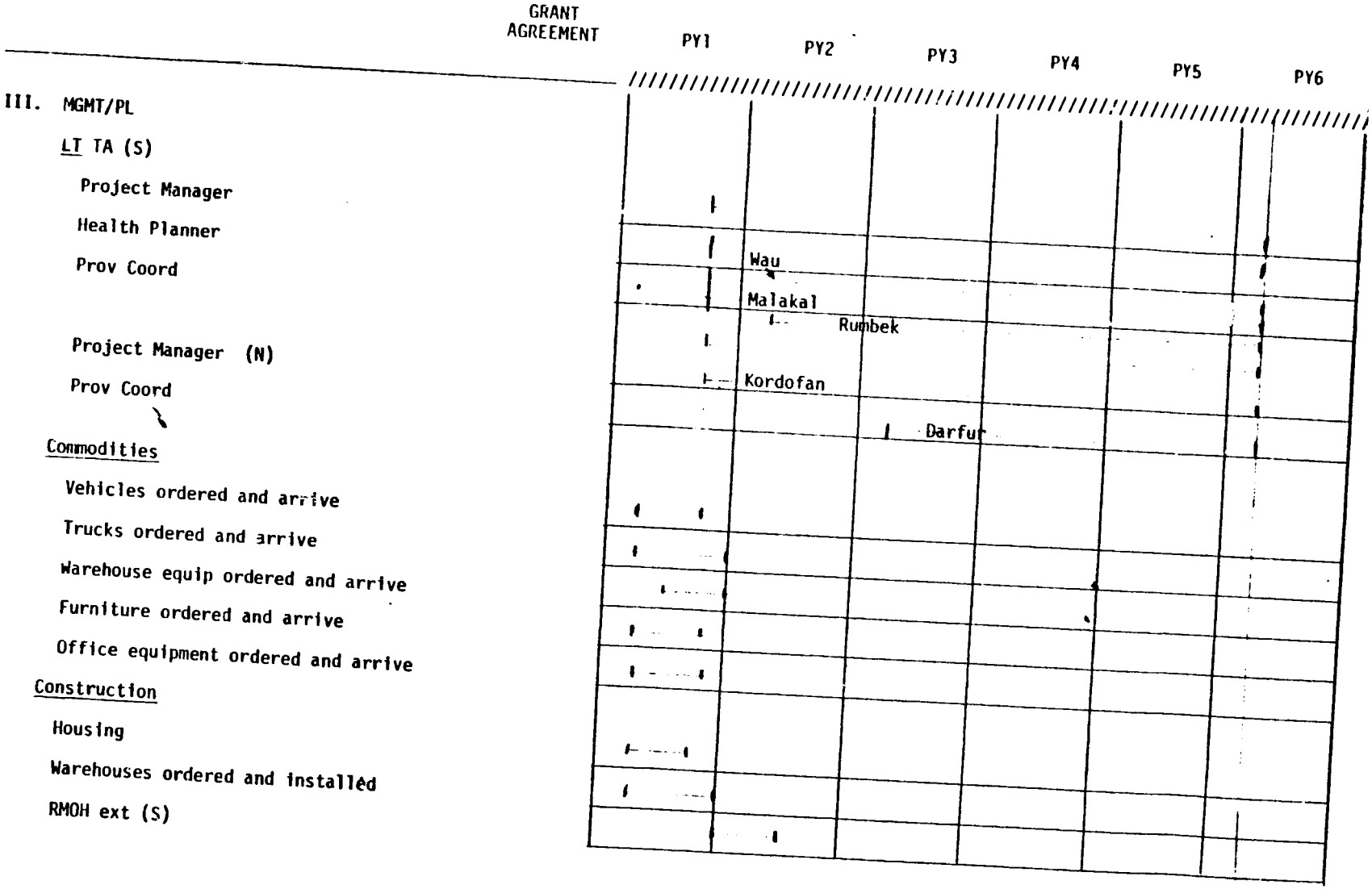

GRANT AGREEMENT
PY1
PY2
PY3
PY4
PY5
PY6
II. MCH
LT TA N
S
Commodities
Vehicles ordered and arrive
MCH/FP supplies ordered and arrive
1 MCH advisor
1 MCH advisor


GRANT AGREEMENT
PY1
PY2
PY3
PY4
PY5
PY6
III. MGMT/PL
LT TA (S)
Project Manager
Health Planner
Prov Coord
Wau
Malakal
Rumbek
Project Manager (N)
Prov Coord
Kordofan
Barfur
Commodities
Vehicles ordered and arrive
Trucks ordered and arrive
Warehouse equip ordered and arrive
Furniture ordered and arriv
Office equipment ordered and arrive
Construction
Housing
Warehouses ordered and installed
RMOH ext (S)

BAR CHART ON PROJECT ACTIVITIES




GRANT AGREEMENT
PY1
PY2
PY3
PY4
PY5
PY6
II. MCH
LT TA N
S
Commodities
Vehicles ordered and arrive
MCH/FP supplies ordered and arrive
1 MCH advisor
1 MCH advisor


GRANT AGREEMENT
PY1
PY2
PY3
PY4
PY5
PY6
III. MGMT/PL
LT TA (S)
Project Manager
Health Planner
Prov Coord
Project Manager (N)
Prov Coord
Commodities
Vehicles ordered and arrive
Trucks ordered and arrive
Warehouse equip ordered and arrive
Furniture ordered and arrive
Office equipment ordered and arrive
Construction
Housing
Warehouses ordered and installed
RMOH ext (S)
Wau
Malakal
Rumbek
Kordofan
Darfur

ANNEX L: IEE AND ENVIRONMENTAL ANALYSIS

Initial Environmental Examination

Porject Country: Sudan

Project Title: Rural Health Support

Funding: FY 1980

Life of Project: Five Years

IEE Prepared By: James Graham

Environmental Action Recommended: Negative Determination

Concurrence:

Gordon K. Pierson
USAID/Sudan

6/4/80
Date

Decision:

Assistant Administrator

Date

Approved _____

Disapproved _____

PROJECT DESCRIPTION

The goal of the project is to increase the access of the Sudanese people, especially the poor majority living in rural areas, to improved health services. Project purpose is to assist the Ministries of Health in the North and in theSouth to overcome constraints to the implementation of Sudan's National Health Program, a program which has as one of its priority objectives to increase the access of the rural poor to health services. The project will support government programs in Primary Health Care. It will also strengthen rural Mother and Child Health activities and initiate activities designed to strengthen the overall management ability of the Health Ministries.

Specific project activities include warehouse construction, medical training of midwives, other personnel, and budget support for the purchase of drugs and other medical supplies.

DISCUSSION OF IMPACTS

Land Use

There will be no physical alteration of the land as such. No major changes in drainage or run-off patterns are anticipated.

There may also occur a short-term increase in population as infant mortality is reduced through improved preventive and curative health services and mother and child care.

Water Quality

No activities affecting the quantity or quality of water are to be undertaken in this project.

Atmospheric

None

Natural Resources

No use of natural resources is expected.

Cultural

There are a number of cultural constraints to improved health among the target population which will be examined by the social scientist on the PP team.

Socioeconomic

There are no activities in the project that should have any major effect on settlement patterns, economic/employment patterns or other socioeconomic factors.

Health

The project activities are all designed to improve the health of the rural populations of Sudan. No changes in the environment or the ecosystem will occur that would adversely affect the health of human or animal population.

Construction

In regard to the environmental aspects of the construction proposed under the project, this is the joint responsibility of the Soil Conservation, Land Use and Water Programming Administration (SCLUWPA), the Ministry of Construction and Public Works (PWC), the Ministry of Health (MOH), and the Commission of Surveys and Village Councils (CSVC).

The MOH will determine what type and in what area facilities are required. The SCLUWPA will determine where, within the selected area, the development of water supply is most feasible. The CSVC will determine if the sites have met physical criteria (e.g. adequate surface drainage, traffic access, etc.) which are established by the PWC.

General

None

Recommendation for Environmental Action

A negative determination is recommended.

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact Areas and Sub-Areas	Impact Identification and Evaluation
A. LAND USE	
1. Changing the character of the land through:	
a. Increasing the population	L
b. Extracting natural resources	L
c. Land clearing	N
d. Changing soil character	L
2. Altering natural defenses	N
3. Foreclosing important uses	N
4. Jeopardizing ~~man or his works~~	N
5. Traffic access	N
6. Land use planning	N
7. Squatter, other development	N
B. WATER QUALITY	
1. Physical state of water	N
2. Chemical and biological states	N
3. Ecological balance	N
C. ATMOSPHERIC	
1. Air additives	N
2. Air pollution	N
3. Noise pollution	N

D. NATURAL RESOURCES

1. Diversion, altered use of water _____ N
2. Irreversible, inefficient commitments _____ N
3. Wildlife _____ N

E. CULTURAL

1. Altering physical symbols _____ N
2. Dilution of cultural traditions _____ N

F. SOCIOECONOMIC

1. Changes in economic/employment patterns _____ N
2. Changes in population _____ L
3. Changes in cultural patterns _____ N
4. Dislocation and relocation of area residents N
5. Support facilities _____ N

G. HEALTH

1. Changing a natural environment _____ N
2. Eliminating an ecosystem element _____ N
3. New pathways for disease vectors _____ N
4. Safety provisions _____ N

ANNEX M.

Conditions, Covenants and Negotiating Status

1. Conditions

a. Except for ocean shipping, goods and services financed by AID under the project shall have their source and origin in the cooperating country or in countries included in Geographic Code 941, except as AID may otherwise agree in writing.

b. Prior to provision of commodity or financial assistance to those institutions participating in various research studies and surveys under the project, the Grantee will furnish in form and substance satisfactory to USAID a comprehensive statement of objectives, methodology and procedures to be applied in the conduct of the various studies, surveys, and analysis to be performed. Staff and other GOS resources to be applied will also be described in detail.

2. Covenants

a. Within ninety days from the date of the Project Agreement or such later date as USAID may agree to in writing, the Grantee will submit a report indicating, inter alia, (a) the steps being taken to provide the administrative, technical staff and other personnel required for the project, (b) the steps being taken to allocate adequate financial resources, on a timely basis, in support of the project, and (c) such other information as USAID may reasonably require to gauge the progress of the Grantee in providing requisite project inputs on a timely basis. The Grantee will provide periodic updates of this report at times to be specified in project implementation letters.

b. The Grantee will covenant to make all necessary budgetary allocations, on a timely basis, as these requirements are described in the Project Agreement.

c. The Grantee will covenant to allot adequate land for all structures to be built under the project.

d. The Grantee will covenant to provide all required counterpart personnel on a timely basis. Such personnel will be qualified to perform their assigned duties and will not be removed by the Grantee from their positions without prior consultation with USAID.

e. The Grantee will covenant to provide all required participant trainees and will assure that such trainees, upon completion of their studies, will be assigned to positions within the project commensurate with the nature and level of training required, as may be acceptable to USAID.

f. The Grantee covenants that it will expedite, to the maximum extent possible, clearance through port and customs of project financed or related commodities and materials.

g. The Grantee will submit to USAID for approval the design, specifications cost and location of all facilities to be constructed under the project.

h. The Grantee will submit to USAID for approval auditing procedures to ensure the accountability for project commodities, particularly those classified as non-expendable.

i. The Grantee will covenant to establish within the Ministry of Health a Project Implementation Unit (PIU) which will be headed by a Project Director who will be appointed by the Minister of Health. He will report directly to the Under Secretary of Health and will be responsible for coordination all aspects of the Northern project component within the MOH and RWC and in the participating Northern provinces. The PIU will be established ninety days from the date of the Project Agreement or such later date as USAID may agree to in writing.

j. The Grantee will covenant to establish in the South a Project Coordinating Committee (PCC) for the purpose of coordinating the PHCP and SWP components of the project. The committee will be chaired jointly by the Regional Ministers of Health and Agriculture or their designated representative. Other members of the committee will be the Director of the Primary Health Care Program, the AMREF staff public health engineer and other members as designated by the Agriculture and Health Ministers.

The PCC will be established ninety days from the date of the Project Agreement or such later date as USAID may agree to in writing.

3. Negotiating Status

The project design, commitments, timing and other details have been discussed at length with the principal negotiating arms of the GOS, the Ministries of Health in Khartoum and Juba, as well as other concerned National Ministries.

ANNEX N

5C(1) - COUNTRY CHECKLIST

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? **Yes**

2. FAA Sec. 481. Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully? **No**

3. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement? **Yes**

4. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government? **No**

5. FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivision) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing

ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?

No

6. FAA Sec. 620(a), 620(f); FY 79 App. Act Sec. 108, 114 and 606. Is recipient country a Communist country? Will assistance be provided to the Socialist Republic of Vietnam, Cambodia, Laos, Cuba, Uganda, Mozambique, or Angola?

No

7. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression?

No

8. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property?

No

9. FAA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason?

No

10. FAA Sec. 620(o); Fishermen's Protective Act of 1967, as amended, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters,

Sudan has taken no such action.

a. has any deduction required by the Fishermen's Protective Act been made?

b. has complete denial of assistance been considered by AID Administrator?

11. FAA Sec. 620; FY 79 App. Act Sec. 603. (a) Is the government of the recipient country in default for more than six months on interest or principal of any AID loan to the country? (b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds? — No

12. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget which is for military expenditures, the amount of foreign exchange spent on military equipment and the amount spent for the purchase of sophisticated weapons systems? (An affirmative answer may refer to the record of the annual "Taking Into Consideration" memo: "Yes, as reported in annual report on implementation of Sec. 620(s)." This report is prepared at time of approval by the Administrator of the Operational Year Budget and can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.) — N/A

13. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? — The GOS severed diplomatic realtions with the U.S. in 1967, but they were resumed in 1972. The 1958 bilateral Assistance Agreement was reconfirmed and remains in effect.

14. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? — Current

15. FAA Sec. 620A, FY 79 App. Act, Sec. 607. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism? — No

16. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA? **No**

17. FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it detonated a nuclear device after August 3, 1977, although not a "nuclear-weapon State" under the nonproliferation treaty? **No**

B. FUNDING CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria.

a. FAA Sec. 102(b)(4). Have criteria been established and taken into account to assess commitment progress of country in effectively involving the poor in development, on such indexes as: (1) increase in agricultural productivity through small-farm labor intensive agriculture, (2) reduced infant mortality, (3) control of population growth, (4) equality of income distribution, (5) reduction of unemployment, and (6) increased literacy. **Yes**

b. FAA Sec. 104(d)(1). If appropriate, is this development (including Sahel) activity designed to build motivation for smaller families through modification of economic and social conditions supportive of the desire for large families in programs such as education in and out of school, nutrition, disease control, maternal and child health services, agricultural production, rural development, and assistance to urban poor? **Yes**

2. Economic Support Fund Country Criteria.

a. FAA Sec. 502B. Has the country engaged in a consistent pattern of gross violations of internationally recognized human rights? **No**

b. FAA Sec. 533(b). Will assistance under the Southern Africa program be provided to Mozambique, Angola, Tanzania, or Zambia? If so, has President determined (and reported to the Congress) that such assistance will further U.S. foreign policy interests? **N/A**

c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? **N/A**

d. FY 79 App. Act Sec. 113. Will assistance be provided for the purpose of aiding directly the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights? **No**

e. FAA Sec. 620B. Will security supporting assistance be furnished to Argentina after September 30, 1978? **N/A**

ANNEX N

5C(2) - PROJECT CHECKLIST

A. General Criteria for Project

1. FY 79 App. Act Unnumbered; FAA Sec. 653(b); Sec. 634A.

(a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project; (b) is Assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than $1 million over that figure)? — Committees will be notified using special Congressional notification. Yes

2. FAA Sec. 611 (a)(1). Prior to obligation in excess of $100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance; — Yes

(b) a reasonably firm estimate of the cost to the U.S. of the assistance? — Yes

3. FAA Sec.611 (a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishement of purpose of the assistance? — N/A

4. FAA Sec. 611 (b); FY 79 App. Act Sec. 101 If for water or water related land resource construction, has the project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973? — N/A

5. FAA Sec. 611 (e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project? — Yes

11. FAA 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

The contractor for northern project activities will be selected by competitive procurement. It is proposed that procurement of services for all southern activities, be done on the basis of non-competitive procurement.

12. FY 79 App. Act Sec. 608. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to the U.S. producers of the same, similar or completing commodity?

N/A

B. Funding Criteria for Project

1. Development Assistance Project Criteria

a. FAA Sec. 102(b); 111; 113; 281a. Extent to which activity will (a) effectively involve the poor development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from the cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the

a. Project is designed specifically to provide health services in rural areas, utilizing para-technician health personnel.

participation of women in the national economies of developing countries and the improvement of women's status; (e) and utilize and encourage regional cooperation by developing countries?

b. FAA Sec. 103, 103a, 104, 105, 106, 107.
Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.) N/A

(1) (103) for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; (103A) if for agricultural research, is full account taken of needs of small farmers: N/A

(2) (104) for population planning under sec. 104(b) or health under sec. 104(c); if so, extent to which activity emphasizes low-cost, integrated delivery systems for health nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using para-medical and auxiliary medical personnel, clinics and health posts, commercial distribution systems and other modes of community research. The entire focus of the project is towards providing low-cost health services to the rural poor, with special emphasis on maternal and child health which includes child spacing and nutrition activities.

(3) (105) for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development; N/A

(4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:

(i) technical cooperation and development, especially with U.S. private and voluntary or regional and international development, organizations;

(ii) to help alleviate energy problems;

(iii) research into, and evaluation of economic development processes and techniques;

(iv) reconstruction after natural or manmade disaster;

(v) For special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;

(vi) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development. N/A

(5) [107] is appropriate effort placed on use of appropriate technology?

(d) FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project or activity with respect to which the assistance is to be furnished(or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)? Yes

(e) FAA Sec. 110(b). Will the grant for capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts

Yes. The Sudan is a "relatively least-developed" country. Therefore this requirement does not apply.

for other financing, or is the recipient country "relatively least-developed"?	
(f) FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the countries intellectual resources to encourage institutional development; and supports civil education.	U.S. assistance in the Sudan places emphasis on encouraging economic, social and political institutions required for a viable democratic society. One purpose of this project is to develop and strengthen administrative and technical institutions in the GOS. Another purpose will be to improve the training of health personnel in the country.
(g) FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?	Project Paper contains economic and social analysis. While there is no accepted formula which demonstrates a direct production (or economic) response to improved health care, such a relationship is generally assumed.

Development Assistance Project Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospoects.	N/A
b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of	

the loan? N/A

3. Project Criteria Solely for Economic Support Fund

a. FAA Sec. 531(a). Will this assistance support promote economic or political stability? To the extent possible, does it reflect the policy directions of section 102? N/A

b. FAA Sec. 533. Will assistance under this chapter be used for military, or paramilitary activities? N/A

5C(3) - STANDARD ITEM CHECKLIST

A. Procurement

1.	FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed?	Standard AID procedures regarding small business participation will be followed as applicable.
2.	FAA Sec. 604(a). Will all commodity procurement financed be from the U.S. except as otherwise determined by the President or under delegation from him?	Yes
3.	FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the U.S. on commodities financed?	Yes
4.	FAA Sec. 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity?	N/A
5.	FAA Sec. 608(a). Will U.S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items?	N/A
6.	FAA Sec. 603. (a) Compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates.	Yes

7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? **Yes**

8. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S.-flag carriers will be utilized to the extent such service is available? **Yes**

9. FY 79 App. Act Sec. 105. Does the contract for procurement contain a provision authorizing the termination of such contract for the convenience of the United States? **Yes**

B. Construction

1. FAA Sec. 601(d). If a capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interest? **Yes**

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? **Yes**

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed $100 million? **Yes**

C. Other Restrictions

1. FAA Sec. 122(e). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? N/A

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? N/A

3. FAA Sec. 620(h). Do arrangements preclude promoting or assisting the foreign aid projects or activities of Communist-bloc countries, contrary to the best interests of the U.S.? Yes

4. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the U.S. or guaranty of such transaction? Yes

5. Will arrangements preclude use of financing:

   a. FAA Sec. 104(f). To pay for performance of abortions or to motivate or coerce persons to practice abortions, to pay for performance of involuntary sterilization, or to coerce or provide financial incentive to any person to undergo sterilization? Yes

   b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? Yes

   c. FAA Sec. 660. To finance police training or other law enforcement assistance, except for narcotics programs? Yes

   d. FAA Sec. 662. For CIA activities? Yes

e. FY 79 App. Act Sec. 104. To pay pensions, etc. for military personnel? **Yes**

f. FY 79 App. Act Sec. 106. To pay U.N. assessments? **Yes**

g. FY 79 App. Act Sec. 107. To carry out provisions of FAA sections 209(d) and 251(h)? (Transfer of FAA funds to multilateral organizations for lending.) **Yes**

h. FY 79 App. Act Sec. 112. To finance the export of nuclear equipment, fuel, or technology or to train foreign nations in nuclear fields? **Yes**

i. FY 79 App. Act Sec. 601. To be used for publicity or propaganda purposes within U.S. not authorized by Congress? **Yes**

6. FAA Sec. 209. Is project susceptible of execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.	Project is designed in close collaboration with other donors especially UNFPA
7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency and industry, agriculture and commerce; (f) strengthen free labor unions.	No
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	The Project will utilize private U.S. technical consultants as well as commodities.
9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.	See Financial Plan.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?	No

ANNEX O

CERTIFICATION FURSUANT TO

Section 611 (e) of the

FOREIGN ASSISTANCE ACT

As Amended

I, Gordon K. Pierson, the principal officer of the Agency for International Development in the Democratic Republic of Sudan, do herewith certify that in my judgement, Sudan will have both the financial capability and the human resources to maintain and utilize effectively goods and services procured under this development assistance project entitled Health Sector Support Project.

USAID Director
Democratic Republic of Sudan

ANNEX P

NON-COMPETITIVE WAIVER FOR PROCUREMENT OF SERVICES

Proposed Contractor - International African Medical and Research Foundation

Contract Amount (Est.) $ 7,472,000

Justification - It is recommended that we negotiate only with the International Medical and Research Fondation (IMRF) for services described in this Project Paper for Southern Sudan.

IMRF is registered in the United States as a charitable organization and was the recipient on September 30, 1978 of a 5 year AID Operational Program Grant for $3,186,405 to implement the Southern Sudan Primary Health Care Project, 650-0019. Under this project AMREF is providing support to the Primary Health Care Program through technical assistance, training, commodity support and construction. The proposed Rural Health Support project seeks to expand these same activities in order to significantly increase support to the Primary Health Care Program in three of the least developed Southern provinces.

It would be extremely costly to the U.S. Government to compete this procurement among profit-making firms. Moreover, to our knowledge, there is no other charitable health services institution which is registered with AID and which has the capability to provide such diverse services as will be provided by AMREF under the project. These services include: training of front line health workers, printing of health educational materials, radio health education programs, radio communications, construction of medical warehouses, training centers and dispensaries and provision of an aircraft for project support.

Even if a qualified charitable health services organization could be located, it could not perform the required services as well or as cheaply. The Southern Sudan is a remote and isolated area which occupies a territory larger than Kenya. Because it is cut off from the North for most of the year in terms of transportation, communications and supplies, all international donors with substantial activities must support their operations through Nairobi, Kenya. This requires the establishment of a support system based in Nairobi with dependable lines of transport from the port ofMombasa, Kenya, to Juba as well as a system of radio communications. Furthermore, many international donor projects with activities throughout the South have their own aircraft to link Juba with Nairobi as well as to support project activities in the South, particularly during the 6 month rainy season when most roads are impassable.

AMREF, which is implementing 29 rural health projects in East Africa, already has existing support systems for project activities. It has in Nairobi:

- 90 employees
- classroom training facilities
- vehicle maintenarce shops
- radio repair workshop
- service vehicles for transport of supplies and equipment
- storage and warehouse facilities
- ratio communication network
- administrative offices and equipment
- 3 light aircraft

AMREF, under its OPG with AID also has established support facilities in Juba. These facilities in Nairobi and Juba which are essential to implement activities described for the South in the Project Paper, would have to be established by another contractor. This would increase considerably the cost to the U.S. Government, as well as the time to implement project activities.

AMREF through its operational experience in Southern Sudan and 21 years of experience in the delivery of rural health services in East Africa, has developed a body of knowledge and expertise relating to rural health development which can be applied to the activities described for the South in the Project Paper. To reproduce this body of knowledge by another contractor would take time and be costly to the U.S. Government.

The performance of AMREF under the present OPG has been quite satisfactory and the cost is most reasonable. The AMREF staff have shown considerable inventiveness, cost consciousness and versatility in its work in Southern Sudan and the collaborative style of this assistance has been well received by the government.

Thus, our view is that the arguments in support of negotiated procurement from IMRF are timeliness, reduced costs, continuity, ability to perform the work and its credibility and acceptability within Southern Sudan.

ANNEX P

ACTION MEMORANDUM FOR THE ADMINISTRATOR

FROM: USAID/S, Gordon Pierson, AID Director

SUBJECT: Vehicle Procurement Waiver (Source/Origin) including bicycles

Problem: Approval is requested for procurement source waiver from Geographic Code 000 (U.S. only) to Geographic Code 953 (Special Free World).

a.	Cooperating Country	Sudan
b.	Authorizing Document	Project Paper
c.	Project	Rural Health Support Project 650-0030
d.	Nature of Funding	Grant
e.	Description of Commodities	1 4-wheel drive vehicle 4 5-ton trucks 300 British Hercules bicycle types 34 motor bike types 2 Personnel vans
f.	Approximate Value	Vehicles $456,000 Spare parts $205,000 Total $661,000
g.	Probable Procurement Origin	UK, Japan
h.	Probable Procurement Source	UK, Sudan, Kenya.

Discussion: Section 636 (i) of the Foreign Assistance Act of 1961, as amended, prohibits AID from purchasing motor vehicles unless such vehicles are manufactured in the United States. Section 636 (i) does provide, however, that "... where special circumstances exist, the President is authorized to waive the provision of this act in order to carry out the purpose of this act." In addition, in accordance with A.I.D. Handbook 1B, procurement of commodities from Code 935 sources under a grant financed project requires a waiver. A waiver may be granted if, inter alia, an essential commodity is not available from eligible sources or there are circumstances determined to be crucial to

ANNEX P

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM: USAID/Sudan, Gordon Pierson, USAID Director

SUBJECT: Sudan - Rural Health Support (650-0030); Request for Vehicle Procurement Source/Origin Waiver

Problem: Approval is requested to use funds from the subject project to procure four(4) trucks, two(2) vans, and one(1) utility vehicle of non-U.S. manufacture. This procurement necessitates a source/origin waiver from AID Geographic Code 000 (U.S. only) to Geographic Code 935 (Special Free World).

A. Cooperating Country:	Sudan	
B. Authorizing Document:	Project Paper	
C. Project:	Rural Health Support (650-0030)	
D. Nature of Funding:	Grant	
E. Description of Commodities:	4 5-ton trucks 2 personnel vans 1 4-wheel drive vehicle	
F. Approximate Value:	Vehicles	$375,000
	Spare Parts	$125,000
	Total	$500,000
G. Probable Procurement Origin:	Japan, United Kingdom	
H. Probable Procurement Source:	Sudan, Kenya, United Kingdon	

Discussion: Section 636(i) of the Foreign Assistance Act of 1961, as amended, prohibits AID from purchasing motor vehicles unless such vehicles are manufactured in the United States. Section 636(i) does provide, however, that " . . . where special circumstances exist, the President is authorized to waive the provision of this Act in order to carry out the purposes of this Act." The authority to grant such a waiver has been delegated to you by Delegation of Authority No. 40. Circumstances which may merit waiving the requirements of section 636(i) are not set out in Handbook 1, Supplement B, Chapter 4.C.2.d. and include: (a) inability of U.S. manufactures to provide a particular type of vehicle and (b) present or projected lack of adequate facilities and supply of spare parts for U.S. manufactured vehicles.

The above named vehicles will be used primarily in the four provinces of Lakes, Bahr el Ghazal, Upper Nile and the Juba area of Southern Sudan. The topography of the project area consists mostly of rolling savanna interdicted by streams, rivers and swamps. Climatic conditions including extremely high seasonal rainfall lasting between six and seven months further exacerbate the difficult terrain.

Roads connect the regional capital of Juba with West Africa and Zaire and Southern Sudan gets most of its basic commodities from these neighboring countries by road. The quality of the internal road system ranges from a fair skeleton system in Equatoria to poorer conditions in Bahr el Ghazal, where most of the roads are subject to frequent flooding. The nature of the terrain and high seasonal rainfall dictate the need for particularly rugged vehicles. The construction of the Land Rover and Toyotas makes them much better adapted to the project location than comparable U.S. manufactured vehicles.

Furthermore, the remote location of the project training schools, dispensaries, primary health care units and rural provincial centers requires that the vehicles be maintained by local mechanics using spare parts which can be obtained in the rural project areas. There is a complete lack of spare parts and maintenance support for U.S. manufactured vehicles. In fact, to our knowledge, there are no U.S. manufactured vehicles in Southern Sudan. The only reasonable supply of spare parts available locally are for Land Rovers and Toyotas, and local mechanics familiar with these types of vehicles are capable of maintaining them.

The Regional Ministry of Health and Social Welfare as well as other government agencies have attempted to standardize vehicles in order to facilitate maintenance operations and minimize costs. Government repair facilities for Land Rovers already exist in the project area. Given other demands on GOS funds and its extremely limited manpower base, costs of developing maintenance facilities for relatively few U.S. manufactured vehicles located in the remote project areas would not be consistent with overall development objectives.

Recently, donors in the Southern Sudan have joined to form a pooled vehicle maintenance facility in Juba known as JAWS (Joint Administrative Workshop Services). Presently, a JAWS has spare parts and maintenance facilities for only Land Rovers and Toyotas. No comparable maintenance facility exists in the area.

Primary Justification: Spare parts and maintenance facilities for U.S. manufactured vehicles are unavailable in the Southern Sudan, development of such support facilities is unrealistic, and the availability of rugged vehicles with proper support facilities is essential to carrying out the project. This justification is set out in Handbook 1, Supplement B, Chapter 4.C.2.d.

Recommendation: For the above reasons, it is recommended (1) that you conclude that special circumstances exist at this time which warrant the waiver of the requirements of section 636(i); (2) that you waive the source/origin requirements set forth in Handbook 1, Supplement B to allow procurement of these vehicles from countries included in Code 935; and (3) that you

certify that exclusion of procurement of project vehicles from free world sources other than the cooperating country and countries included in Code 941 would seriously impede attainment of U.S. foreign policy objectives and the objectives of the foreign assistance program.

Approved: _____

Disapproved: _____

Date: _____

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM: USAID/Sudan, Gordon Pierson, USAID Director

SUBJECT: Sudan - Rural Health Support (650-0030); Request for Procurement Source/Origin Waiver

Problem: Approval is requested to use funds from the subject project to procure 300 bicycles of British manufacture. This procurement necessitates a source/origin waiver from AID Geographic Code 000 (U.S. only) to Geographic Code 935 (Special Free World).

A. Cooperating Country:	Sudan	
B. Authorizing Document:	Project Paper	
C. Project:	Rural Health Support (650-0030)	
D. Nature of Funding:	Grant	
E. Description of Commodities:	300 bicycles	
F. Approximate Value:	Bicycles	$80,000
	Spare Parts	$15,000
	Total	$95,000
G. Probable Procurement Origin:	United Kingdom	
H. Probable Procurement Source:	Sudan, Kenya, United Kingdom	

Discussion: In accordance with AID Handbook 1, Supplement B, Procurement of commodities from Code 935 sources under a grant-financed project requires a waiver. Under Chapter 5B4b of the same handbook, a waiver may be granted if, inter alia, an essential commodity is unavailable from eligible sources there are circumstances determined to be critical to the success of project objectives. The authority to grant such a waiver has been delegated to you by Delegation of Authority No. 40.

The above named bicycles will be used primarily in the four provinces of Lakes, Bahr el Ghazal, Upper Nile and the Juba area of Southern Sudan. The topography of the project area consists mostly of rolling savanna interdicted by streams, rivers and swamps. Climatic conditions including extremely high seasonal rainfall lasting between six and seven months further exacerbate the difficult terrain.

Roads connect the regional capital of Juba with West Africa and Zaire and Southern Sudan gets most of its basic commodities from these neighboring countries by road. The quality of the internal road system ranges from a fair skeleton system in Equatoria to poorer conditions in Bahr el Gazal,

where most of the roads are subject to frequent flooding. The nature of the terrain and high seasonal rainfall dictate the need for particularly rugged bicycles. British bicycles are widely used in the area and generally recognized to be best suited for the terrain.

Furthermore, the remote location of the project training schools, dispensaries, primary health care units and rural provincial centers requires that the vehicles be maintained by local mechanics using spare parts which can be obtained in the rural project areas. There is a complete lack of spare parts and maintenance support for U.S. manufactured bicycles. In fact, to our knowledge, there are no U.S. manufactured bicycles in Southern Sudan. The only reasonable supply of spare parts available locally are for British bicycles and local mechanics familiar with these types of vehicles are capable of maintaining them.

The Regional Ministry of Health and Social Welfare as well as other government agencies have attempted to standardize bicycles in order to facilitate maintenance operations and minimize costs. Government repair facilities for British bicycles already exist in the project area.

Primary Justification: The United States does not manufacture bicycles which are suitably rugged and which have adequate spare parts and maintenance facilities in the Southern Sudan, and the availability of such bicycles with proper support facilities is critical to the success of this project. This justification is set out in Handbook 1, Supplement B, Chapter 5B4b.

Recommendation: For the above reasons, it is recommended (1) that you waive the source/origin requirements set forth in Handbook 1, Supplement B to allow procurement of these bicycles from countries included in Code 935; and (2) that you certify that exclusion of procurement of project bicycles from freww world sources other than the cooperating country and countries included in Code 941 would seriously impede attainment of U.S. foreign policy objectives and the objectives of the foreign assistance program.

Approved: _____

Disapproved: _____

Date: _____

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM: USAID/Sudan, Gordon Pierson, USAID Director

SUBJECT: Sudan - Rural Health Support (650-0030); Request for Vehicle Procurement Source/Origin Waiver

Problem: Approval is requested to use funds from the subject project to procure 34 Japanese manufactured motorized bicycles. This procurement necessitates a source/origin waiver from AID Geographic Code 000 (U.S. only) to Geographic Code 935 (Special Free World).

A. Cooperating Country:	Sudan	
B. Authorizing Document:	Project Paper	
C. Project:	Rural Health Support (650-0030)	
D. Nature of Funding:	Grant	
E. Description of Commodities:	34 motorized bicycles	
F. Approximate Value:	Vehicles	$50,000
	Spare Parts	$10,000
	Total	$60,000
G. Probable Procurement Origin:	Japan	
H. Probable Procurement Source:	Sudan, Kenya	

Discussion: Section 636(i) of the Foreign Assistance Act of 1961, as amended, prohibits AID from purchasing motor vehicles unless such vehicles are manufactured in the United States. Section 636(i) does provide, however, that ". . . where special circumstances exist, the President is authorized to waive the provision of the Act in order to carry out the purposes of this Act." The authority to grant such a waiver has been delegated to you by Delegation of Authority No. 40. Circumstances which may merit waiving the requirements of section 636(i) are set out in Handbook Supplement B, Chapter 4C2d and include: (a) inability of U.S. manufacturers to provide a particular type of vehicle; and (b) present of projected lack of adequate facilities and supply of spare parts for U.S. manufactured vehicles.

The above named vehicles will be used primarily in the four provinces of Lakes, Bahr el Ghazal, Upper Nile and the Juba area of Southern Sudan. The topography of the project area consist mostly of rolling savanna interdicted by streams, rivers and swamps. Climatic conditions including extremely high seasonal rainfall lasting between six and seven months further exacerbate the difficult terrain.

Roads connect the regional capital of Juba with West Africa and Zaire and Southern Sudan gets most of its basic commodities from these neighboring countries by road. The quality of the internal road system ranges from a fair skeleton system in Equatoria to poorer conditions in Bahr el Ghazal, where most of the roads are subject to frequent flooding. Moreover, the modernized bicycles will be used more frequently on paths than actual roads. The nature of the terrain and high seasonal rainfall dictate the need for particularly rugged vehicles. The U.S. does not manufacture motorized bicycles suitable to the area.

Furthermore, the remote location of the project training schools, dispensaries, primary health care units and rural provincial centers requires that the motorized bicycles be maintained by local mechanics using spare parts which can be obtained in the rural project areas. There is a complete lack of spare parts and maintenance support for U.S. manufactured motorized bicycles. In fact, to our knowledge, there are no U.S. manufactured motorized bicycles in Southern Sudan. The only reasonable supply of spare parts available locally are for Japanese motorized bicycles and local mechanics familiar with these types of vehicles are capable of maintaining them.

Primary Justification: The U.S. does not manfacture motorized bicycles suitable to the project area, spare parts and maintenance facilities for U.S. manufactured motorized bicycles are unavailable in the Southern Sudan, development of such support facilities is unrealistic, and the availability of motorized bicycles with proper support facilities is essential to carrying out the project. This justification is set out in Handbook 1, Supplement B, Chapter 4C2d.

Recommendation: For the above reasons, it is recommended (1) that you conclude that special circumstances exist at this time which warrant the waiver of the requirements of section 636(i); (2) that you waive the source/origin requirements set forth in Handbook 1, Supplement B to allow procurement of these motorized bicycles from countries included in Code 935; and (3) that you certify that exclusion of procurement of project mopeds from free world sources other than the cooperating country and countries included in Code 941 would seriously impede attainment of U.S. foreign policy objectives and the objectives of the foreign assistance program.

Approved: _____

Disapproved: _____

Date: _____

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM: USAID/Sudan, Gordon Pierson, USAID Director

SUBJECT: Sudan - Rural Health Support (650-0030); Request for Vehicle Procurement Source/Origin Waiver

Problem: Approval is requested to use funds from the subject project to procure Japanese motorcycles. This procurement necessitates a source/origin waiver from AID Geographic Code 000 (U.S. only) to Geographic Code 935 (Special Free World).

A. Cooperating Country:	Sudan	
B. Authorizing Document:	Project Paper	
C. Project:	Rural Health Support (650-0030)	
D. Nature of Funding:	Grant	
E. Description of Commodities:	28 125-200 cc motorcycles	
F. Approximate Value:	Vehicles	$42,000
	Spare Parts	$12,000
	Total	$54,000
G. Probable Procurement Origin:	Japan	
H. Probable Procurement Source:	Sudan, Japan	

Discussion: Section 636(i) of the Foreign Assistance Act of 1961, as amended, prohibits AID from purchasing motor vehicles unless such vehicles are manufactured in the United States. Section 636(i) does provide, however, that ". . . where special circumstances exist, the President is authorized to waive the provision of this Act in order to carry out the purposes of this Act." The authority to grant such a waiver has been delegated to you by Delegation of Authority No. 40. Circumstances which may merit waiving the requirements of section 636(i) are set out in Handbook 1, Supplement B, Chapter 4C2d and include: (a) inability of U.S. manufacturers to provide a particular type of vehicle; and (b) present or projected lack of adequate facilities and supply of spare parts for U.S. manufactured vehicles.

The above mentioned vehicles will be used in tergeted Northern provinces by medical assistants and sanitary overseers.

The only reasonable supply of spare parts available locally are for Japanese motorcycles. In addition, local mechanics are familiar with them and therefore capable of maintaining them. Exceptional spare parts may be obtained in Khartoum.

Primary Justification: The United States does not manufacture the type of motorcycle required for the project, spare parts and maintenance facilities are available only for Japanese motorcycles, and the availability of such motorcycles with proper support facilities is critical to the success of this project. This justification is set out in Handbook 1, Supplement B, Chapter 4C2d.

Recommendations: For the above reasons, it is recommended (1) that you conclude that special circumstances exist at this time which warrant the waiver of the requirements of section 636(i); (2) that you waive the source/origin requirements set forth in Handbook 1, Supplement B to all procurement of these motorcycles from countries included in Code 935; and (3) that you certify that exclusion of procurement of project motorcycles from free world sources other than the cooperating country and countries included in Code 941 would seriously impede attainment of U.S. foreign policy objectives and the objectives of the foreign assistance program.

Approved: _____

Disapproved: _____

Date: _____

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Department of State

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ACTION AID-35

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ANNEX Q

AIDAC

E. O. 12065: N/A

SUBJECT: SUDAN - RURAL HEALTH SUPPORT PROJECT (650-0030)

REF: STATE 188661

ANNEX Q - HOST COUNTRY REQUEST - COPY POUCHED TODAY.
TEXT OF LETTER AS FOLLOWS:
QUOTE: IT IS REALLY GRATIFYING THAT OUR CONCERTED EFFORTS OVER THE LAST FEW YEARS HAVE RESULTED IN THE RURAL HEALTH SUPPORT PROJECT. THE PROJECT COMPLEMENTS AND BACKSTOPS PRIMARY HEALTH CARE ACTIVITIES IN NEEDY AREAS OF THE COUNTRY. ITS OBJECTIVES ARE THUS FULLY SUPPORTED BY THE MINISTRY OF HEALTH. ON BEHALF OF THE GOVERNMENT OF THE DEMOCRATIC REPUBLIC OF SUDAN, I REQUEST YOUR OFFICE TO PROCEED WITH THE STEPS NECESSARY FOR THE IMPLEMENTATION OF THE RURAL HEALTH SUPPORT PROJECT IN THE WESTERN (KORDOFAN AND DARFUR) AND SOUTHERN REGIONS OF THE SUDAN.
THANK YOU FOR YOUR COOPERATION AND INTEREST. END QUOTE.
KONTOS

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