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**SUPPORT TO THE SUDAN RURAL  
HEALTH SUPPORT PROJECT  
(RHSP)**

**FINAL REPORT**

**December 1988 - February 1990**

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KHARTOUM, SUDAN**

Submitted by:

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## EXECUTIVE SUMMARY

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The Rural Health Support Project (RHSP) was funded by USAID/Sudan in 1980 to provide technical support to develop the management and delivery capability of the Ministry of Health (MOH) in Primary Health Care (PHC). The geographical area selected for the program was the two west-central regions of Kordofan and Darfur. A contract was awarded to an "8-A" consulting firm and field staff began arriving four years later in 1984.

In January 1988, the contract was rebid and was awarded to Medical Service Corporation International (MSCI). In fulfillment of the contract with USAID/Sudan, this is the final report of the MSCI team which supported the RHSP.

A seven-person field team was scheduled to be in Sudan from December 1988 through June 1990. However, a military coup in June 1989 put into play Article 513 of the Foreign Assistance Act which prohibits further assistance to countries where a civilian government is replaced by a military regime. As a result, the MSCI team completed as many activities as it could and left Sudan at the end of February 1990.

MSCI took over offices from the previous contractor in the capital, Khartoum, and the two regional capitals of El Obeid, Kordofan and El Fasher, Darfur. The Project was structured on a counterpart basis with regional Ministry of Health staff. Its objective was to strengthen the MOH management of PHC, particularly in the rural areas of the respective regions.

The Regional Project Implementation Unit (RPIU) was identified as the basic policy-making and oversight authority for RHSP. The Kordofan RPIU functioned with some efficiency; in Darfur it was essentially dormant. For the 15 months that MSCI supported the Project, the RPIUs became much more involved in implementing RHSP. A recommendation of the MSCI team was that the RPIUs, or like bodies, be developed in each region to set policy for all PHC activities, not just RHSP.

Programmatic areas that RHSP stressed included:

- o Child Survival
  - \* EPI
  - \* Control of Diarrheal Diseases
  - \* Nutrition
- o MCH/Family Planning
- o Sanitation

To support these PHC activities, technical assistance was given in the areas of management, logistics, and training.

Management assistance stressed strengthening the role of the RPIUs to set policy and oversee the implementation of the program. Support was given to developing a Health Information System (HIS), strengthening district-level support of PHC, expanding the sale of essential drugs to rural areas, and promoting community participation. This occurred particularly in the area of logistical support for drug and vaccine transportation.

Technical assistance was also provided to the regional MOH directorates in logistics. A particular desire of regional MOH leaders, although not approved by USAID/Sudan, was the creation of an MOH vehicle repair facility in each region. Commodities priced at \$247,000, were distributed through the contractor as well.

Training of clinical and paramedical personnel was emphasized, especially in Kordofan where the only regional health training unit in Sudan was established by the RHSP in 1987. Training of paramedical staff and community opinion makers, such as school teachers, was also initiated in Darfur before the termination of the contract.

Under the broad heading of Child Survival, technical assistance was given to immunization (EPI), Control of Diarrheal Disease (CDD) and Nutrition. The RHSP assisted the vertical EPI Program with program-specific needs, (e.g., fuel and generator maintenance.) In Kordofan, RHSP initiated the installation of 12 solar powered refrigerators to reduce reliance on mobile vaccination teams.

The RHSP also facilitated the activities of a second vertical program, CDD. In Darfur, support was given for teacher training and the establishment of "ORT Corners" in hospitals and health centers.

Nutrition activities were underdeveloped in both Kordofan and Darfur; both regional programs were energized when the MSCI team members arrived. In Kordofan, the RHSP was able to take advantage of an AID/W-funded project and conducted an ethnographic nutrition survey in rural districts. In Darfur, growth monitoring and vitamin A distribution was inaugurated.

The MOH never appointed MCH/FP Department Directors in either region during the contract period. This significantly diminished the Project's contribution in this area. Further, the limitations on transportation in Sudan made covering two regions with one advisor impractical. Nonetheless, in both regions, contract advisors succeeded in creating MCH/FP Steering Committees as technical advisory committees to the RPIUs.

Sanitation was a cornerstone of the RHSP from its inception. The emphasis was on teaching intermediaries, and then villagers, the technology of installing home privies, and ventilated improved pit (VIP) latrines. In Kordofan, a manual on VIP construction was written and printed.

MSCI spent approximately \$2.6 million and LS 4.8 million on the Project. There were two funding streams for local currency support of the RHSP. The first was USAID/Sudan-generated Title I and Title II counterpart funds which were administered by the Ministry of Finance and Economic Planning (MFEP). On a twice annual basis, the MFEP released funds to the MOH for the RHSP. The contractor had no responsibility, nor authority, to monitor MOH expenditures of these program funds. Through the second mechanism, USAID/Sudan placed "Trust Funds" in the contract administered by MSCI. These were for local currency expenditures to support MSCI minimal program support costs, and staff members' field housing, travel and per diem.

The constraints on implementing a Project in Sudan are formidable. Infrastructure is very primitive. Most surface travel is over desert tracks. Intra-city air service is intermittent. Telecommunications is interrupted or nonexistent. MSCI was denied use of short-wave transceivers between its three sites. In every instance, travel and communications was more difficult with Darfur than Kordofan.

During the fifteen months that MSCI worked on the Project, the team made some recommendations for more efficient implementation. It is unrealistic to believe that advisors can commute readily between regions, particularly to Darfur. The Project design should have called for a somewhat smaller team, perhaps five expatriates, and work only in one region (with a Khartoum backstop office). Alternately, the team could have been even larger and the two regions treated as semi-independent Projects.

The MOH counterparts should have been in place before specialist advisors arrived in-country. Failure to accomplish this infers less than full commitment to the Project on the part of the MOH and the Government of Sudan.

Finally, a majority of the team believes that oversight of counterpart expenditures by the MOH should have been more closely monitored by USAID. The prevailing method of thrusting responsibility on the MFEP and MOH, while good development theory, inhibited the responsible management of the RHSP counterpart funding.

## ACKNOWLEDGEMENTS

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The MSCI Sudan team members would like to express its deep and sincere appreciation for all the people who assisted us in performing our tasks with the Rural Health Support Project (RHSP). This support was both professional and personal, making our stay productive and most enjoyable.

We find it very difficult to name every person that contributed substantively to the progress of RHSP. A review of the list of key counterparts (Appendix A) demonstrates that our support was broad and deep; to name a few is to leave out the many.

Clearly, the program would not have functioned without the leadership of the Director General of Primary Health Care in Khartoum and the regional Directors General of Health Services in Kordofan and Darfur. Drs. Abdel Hamid, Mirghani Suliman, and Rasheed Abdel Rahim, and later Dr. Amro Mohamed Abbas, made this Project possible and should receive the credit for its accomplishments.

In Kordofan and Darfur, all the members of the Regional Project Implementation Units (RPIU), including participants in the technical subcommittees, contributed substantively to the Project. RHSP is their program and we appreciate their professionalism in directing it and graciousness in allowing us to participate. We are fully confident that they will keep Primary Health Care moving forward in their regions in the months and years to come.

A particular note of appreciation must also go to the Special Assistant to the Director General, Hajj Moie El Din. He is the person who got the work done, and without his effort, many activities would have fallen short of the ambitious plans.

USAID/Sudan funded the program and MSCI is most grateful for the confidence the Mission gave our organization in awarding MSCI the contract. The cooperation and support from USAID has been outstanding from the Mission Director and his staff including the Executive Officer, Controller, Contract Officer, and most especially, the Project Monitor, Dr. Anita Mackie. They have set a high standard for USAID - contractor cooperation.

Finally, we want to express our deep affection for and appreciation of our Sudanese staff. Their dedication and loyalty made our work responsive, efficient, and pleasant. Without their consistent support, our contributions to RHSP would have been considerably less.

Khartoum  
February 20, 1990

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## Table Of Contents

Executive Summary

Acknowledgements

Table of Contents

Glossary

### 1. Background

A.	Sudan . . . . .	1
B.	Health Problems . . . . .	2
C.	RHSP History. . . . .	3
D.	Scope of Work and Objectives. . . . .	4
E.	RHSP Structure. . . . .	5

### 2. Kordofan RHSP Program

A.	Management. . . . .	8
B.	Training. . . . .	.12
C.	Child Survival. . . . .	.15
	*Expanded Program of Immunization (EPI)	
	*Control Of Diarrhoeal Disease (CDD)	
	*Nutrition	
D.	Maternal Child Health Care/Family Planning (MCH/FP)	.20
E.	Sanitation. . . . .	.25

### 3. Darfur RHSP Program

A.	Management. . . . .	.27
B.	Training. . . . .	.30
C.	Child Survival. . . . .	.34
	*Expanded Program of Immunization (EPI)	
	*Control of Diarrhoeal Disease (CDD)	
	*Nutrition	
D.	Maternal Child Health/Family Planning (MCH/FP). . . . .	.41
E.	Sanitation. . . . .	.43

### 4. Logistics

A.	MOH Logistics Support . . . . .	.45
B.	Technical Assistance. . . . .	.45
C.	Team Support. . . . .	.47

e



## GLOSSARY

AHV	Assistant Health Visitor
AID	Agency for International Development
CDD	Control of Diarrheal Disease
CHW	Community Health Worker
CMS	Central Medical Stores
CS	Child Survival
DOO	District Operations Officer
EPI	Expanded Program of Immunization
HA	Health Assistant
HAM	Health Area Management Team
HV	Health Visitor
HW	Health Worker
HIS	Health Information System
ILO	International Labor Organization
LS	Sudanese Pounds
MA	Medical Assistant
MCH/FP	Maternal and Child Health/Family Planning
MFEP	Ministry of Finance and Economic Planning
MI	Medical Inspector
MOE	Ministry of Education
MOH	Ministry of Health
MSCI	Medical Service Corporation International

MSF	Medicin Sans Frontiere
MTD	Mechanical Transport Department
NEP	Non-Expendable Property
NGO	Non-Governmental Organization
OAI	One America, Inc.
ORS	Oral Rehydration Salt
ORT	Oral Rehydration Therapy
PHC	Primary Health Care
PHCC	Primary Health Care Committee
PHCU	Primary Health Care Unit
PVO	Private and Voluntary Organization
ROO	Regional Operations Officer
RHSP	Rural Health Support Project
RMOH	Regional Ministry of Health
RPIU	Regional Project Implementation Unit
SMA	Senior Medical Assistant
TASC	Truck Aid Service Center
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
USAID/Sudan	U.S. AID Mission to Sudan
VIP	Ventilated Improved Pit latrine

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## I. BACKGROUND

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### A. Sudan

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Sudan, is the largest country in Africa, is almost 1 million square miles in size. This is roughly equivalent to Western Europe or the United States east of the Mississippi River. The country shares borders with eight other nations: Egypt, Libya, Chad, Central African Republic, Zaire, Uganda, Kenya, and Ethiopia.

From north to south the topography runs from desert to semiarid, sahel, and finally tropical fores.. Running the entire length of the east-central region of the country are the two branches of the Nile, the White and the Blue Nile. They merge at the capital, Khartoum, and the Nile continues north through Egypt to the Mediterranean Sea.

Ethnographically, there are over 300 identifiable ethnic and linguistic groups in Sudan. The northern two-thirds are predominantly Arabic-speaking Muslim agronomists and nomadic herders. The southern third are pastoralists who practice a variety of Christian and traditional African religious rites and who sometimes use English as a lingua franca.

While Sudan has about 24 million people in a large land mass, nonetheless, many areas cannot support the human and animal populations that live there. This is particularly true in the delicate ecological environment of the northern semi-arid regions where desertification and deforestation, particularly from the use of firewood as fuel, continues unabated. A significant portion of the geographic area of the RHSP project is in this region.

Infrastructure in Sudan is very sparse. There is a paved road from Port Sudan on the Red Sea to the capital, Khartoum, a distance of 750 road miles, and a southern branch of this road from Wad Medani to the White Nile town of Kosti. The overwhelming majority of surface travel is by trucks and buses over desert tracks. There is a railroad with branches from the capital to the north, south, and west, but the track is in poor condition and a great deal of the rolling stock in disrepair. Cities over the sprawling country are connected by the national airline, Sudan Airways, which operates with frequent interruptions. Most urban areas have electrical power. This service is not available, however, for parts of some days or even weeks. Although the capital of Khartoum has both water and sewage systems, the water is not always potable and pipes often break.

A number of constraints inhibit the effective implementation of health programs. Fuel shortages are long lasting and became more frequent by the beginning of 1990. Availability of vehicles, and particularly supplies for preventive maintenance and spare

parts, are a persistent problem. Telephones operate in Khartoum with a varying degree of reliability. Microwave telephonic connections with El Obeid are intermittent and El Fasher has only limited telephone service within the town. The Ministry of Health and a number of NGOs communicate by shortwave radio networks between cities. Three radios were purchased so that the three MSCI offices could communicate. However, in 15 months the Ministry of Health was not able to obtain permission for a frequency to be assigned so that the radios could be used.

Political unrest has inhibited development projects in Sudan. There was a change of government, from civilian to military rule, in the past year. This has led to the replacement of some government officials, including Ministry of Health senior staff. The latter has compounded the problem of unfilled MOH positions in the program regions. The economy has continued to decline over the past five years and funds for program operation, combined with significant inflation, have made financial resources increasingly scarce. This resulted in a decline in the purchasing power of government salaries. A nagging Civil War between the north and south has been fought, off and on, since before independence. This has caused a continuing "brain drain" of physicians to the Gulf States.

Within the MOH, there has been only modest supervision and follow-up of programs, such as RHSP, by national officials. A number of important regional positions were unfilled when the MSCI team arrived. In the ensuing year, none of these posts were filled. At both the national and regional levels, vertical programs have firmly protected their "turf" in the face of RHSP's efforts to integrate PHC activities at the level of service delivery. Personnel shortages are also a problem. A recurrent theme throughout the tenure of MSCI was not having MOH counterparts in critical positions.

## **B. Health Problems**

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Health problems in Sudan are typical of developing countries. Communicable diseases are prevalent and infant morbidity and mortality from diarrhea are especially common. Vector-borne diseases are endemic such as malaria, Leishmaniasis, and schistosomiasis. The more virulent form of malaria, falciparum, is becoming common, and in recent years both vivax and falciparum have shown chloroquine resistance. In 1988 - 1989, there was a serious epidemic of viral meningitis in western Sudan. Areas of filariasis, leprosy, and onchocerciasis have also been clearly identified.

Extensive malnutrition overlies all of these health problems. In 1984-85 there was a serious famine, particularly in the western regions of Sudan. Some believe most of the resulting mortality was due to opportunistic infections within the severely malnourished population. For the three years, 1987 - 1989, there have been reports of widescale starvation in the south. Many external donors made food available, but shipments have been interrupted by combatants in the long term Civil War. Throughout the contract period security problems with supplies have interrupted project activities.

The Rural Health Support Project areas in North Kordofan and North Darfur were severely affected by the 1984-85 famine. The year 1989 had partial to complete crop failure in parts of these areas resulting in families, and even whole communities, moving to other parts of the regions and Sudan. In the southern areas of the two project regions, many farmers could not harvest their crops because of fighting in the area. Reports of community based surveys show that vitamin A deficiency is also a public health problem in these areas. Malnutrition, often not officially reported, is endemic in the project regions of Kordofan and Darfur and could cause problems in 1990 similar to those experienced in 1985. As in prior years, the twin causes of lack of rainfall and insecurity have affected specific communities.

Reliable statistics are difficult to obtain in Sudan. The available figures demonstrate the low status of health within the country.

#### Estimated Vital Statistics, 1980

Crude Birth Rate	:	45/1000
Crude Death Rate	:	49/1000
Infant Mortality Rate	:	132/1000
Population Growth Rate:		2.9%

In the decade between 1975 and 1985, per capita income declined significantly. One could speculate that there has been a corresponding decline in the status of health, particularly during the famine of 1984-85. Coverage rates for Primary Health Care services, such as the Expanded Program of Immunization (EPI) and Oral Rehydration Therapy (ORT), are sufficiently low as to have a small impact on improving the status of health. Most deliveries are attended by untrained Traditional Birth Attendants (TBAs) and reproductive causes are still the leading contributor to morbidity and mortality among women aged 15 to 45.

### C. RHSP History

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The Rural Health Support Project (RHSP) was authorized by USAID/Sudan in 1980 to strengthen the capability of the Government of Sudan to provide Primary Health Care (PHC) services, specifically to:

- o Improve delivery of PHC services.
- o Incorporate maternal and child health/family planning into PHC.
- o Strengthen planning, management, and logistical support.

RHSP was designed to complement, and overlap with, the earlier Primary Health Care Project (PHCP). The initial PHCP project, implemented by Medical Service Corporation International (MSCI), operated in 12 areas of Sudan. Heavy emphasis was placed on logistics and considerable support was given to the Ministry of Health's Central Medical Stores (CMS). Technical assistance was provided by MSCI to the PHCP from 1979 to 1984.

There are two components to the RHSP, a northern component operating in two regions - Kordofan and Darfur - and three regions included in the southern component. USAID/ Sudan selected two different contractors to implement the individual components. This report refers only to the northern component, RHSP/North.

The two geographic areas selected for the RHSP/N were the west central regions of Kordofan and Darfur. The populations of these two western regions are largely rural. The Government of Sudan and USAID/Sudan targeted these areas for inclusion in this Project because they contained "large elements of the poor majority in Sudan".

Due to delays in contracting and then fielding a team, the RHSP did not receive its first expatriate advisor until the beginning of 1983. The first resident advisor in El Obeid, Kordofan arrived in 1984, and a team member was assigned to El Fasher, Darfur in 1986. The contractor, One America, Inc (OAI), provided technical assistance to the RHSP from February 1983 through August 1988.

In January 1988 proposals were submitted for continued contract support to the RHSP. In this instance, MSCI was awarded the contract and the first team members arrived in December of that year. Because OAI activities were completed in August there was a gap of four months when no technical assistance or dollar support was provided to the program.

#### **D. Scope of Work and Objectives**

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The objectives, in broad terms, were incorporated in the signed contract between USAID/Sudan and MSCI. A list of activities were then specified for the period of the contract, initially planned for 24 months. Shortly after the arrival of the MSCI team, the Scope of Work was reviewed with responsible USAID/Sudan officers. The broad objectives were congruent with the initial terms of the Project Paper outlined in Section C. The list of specific activities far exceeded what could be realistically achieved by the MOH and MSCI, however, not only because the contract period had been shortened from 24 to 19 months, but also because the economic ability of the government and the effectiveness of Primary Health Care programs had declined, rather than improved, in the previous five years. Therefore, USAID/Sudan and MSCI, with the concurrence of the MOH, revised the Scope of Work to include activities that might realistically be accomplished during the term of the contract (see Appendix B).

Under the revised Scope of Work there were two major objectives for the RHSP:

- o Strengthening the planning, budgeting, management, supervision and evaluation capabilities of the Primary Health Care (PHC) system, and
- o Institutionalizing and strengthening the delivery of mother-child health/family planning (MCH/FP) services through the Primary Health Care system particularly oral rehydration therapy (ORT), immunization (EPI), maternal and child health/family planning (MCH/FP), nutrition, and sanitation.

As can be seen from these two objectives, the emphasis was to be on system building. The desire of USAID/Sudan, the MOH, and MSCI was to develop health management systems in Kordofan and Darfur that would be capable of continuing and expanding the program after MSCI departed.

These two broad goals were subdivided into objectives which became the basis for the work plans developed by the Kordofan and Darfur RPIUs. For the first goal this included:

- o creating planning committees at the regional level (the RPIUs),
- o developing community councils in pilot health areas, and
- o promoting integration of service delivery, particularly with the vertical programs.

The objectives of the second goal were:

- o increasing PHC services, particularly in the pilot Health Areas,
- o integrating delivery with vertical projects, PVOs, and other donor-supported programs in the two regions, and
- o upgrading the skill levels of health providers.

The programmatic areas that MSCI was to focus on included ORT, EPI, MCH/FP, nutrition, and sanitation. Thirteen activities were specified under the first goal and ten under the second. The main approaches included technical assistance on management and promoting training.

## E. RHSP Structure

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The seven-person MSCI expatriate team took over three offices established by OAI, in Khartoum, El Obeid, and El Fasher. They also inherited an experienced staff of Sudanese who were retained in their positions by USAID/Sudan and the MOH during the interval between contractors.

### MSCI Expatriate Advisors

<u>Positions</u>	<u>Location</u>
Chief of Party	Khartoum
Logistics Advisor	Khartoum
Regional Coordinator, Kordofan	El Obeid
Child Survival Coordinator, Kordofan	El Obeid
MCH/Family Planning Advisor	El Obeid
Regional Coordinator, Darfur	El Fasher
Child Survival Coordinator, Darfur	El Fasher

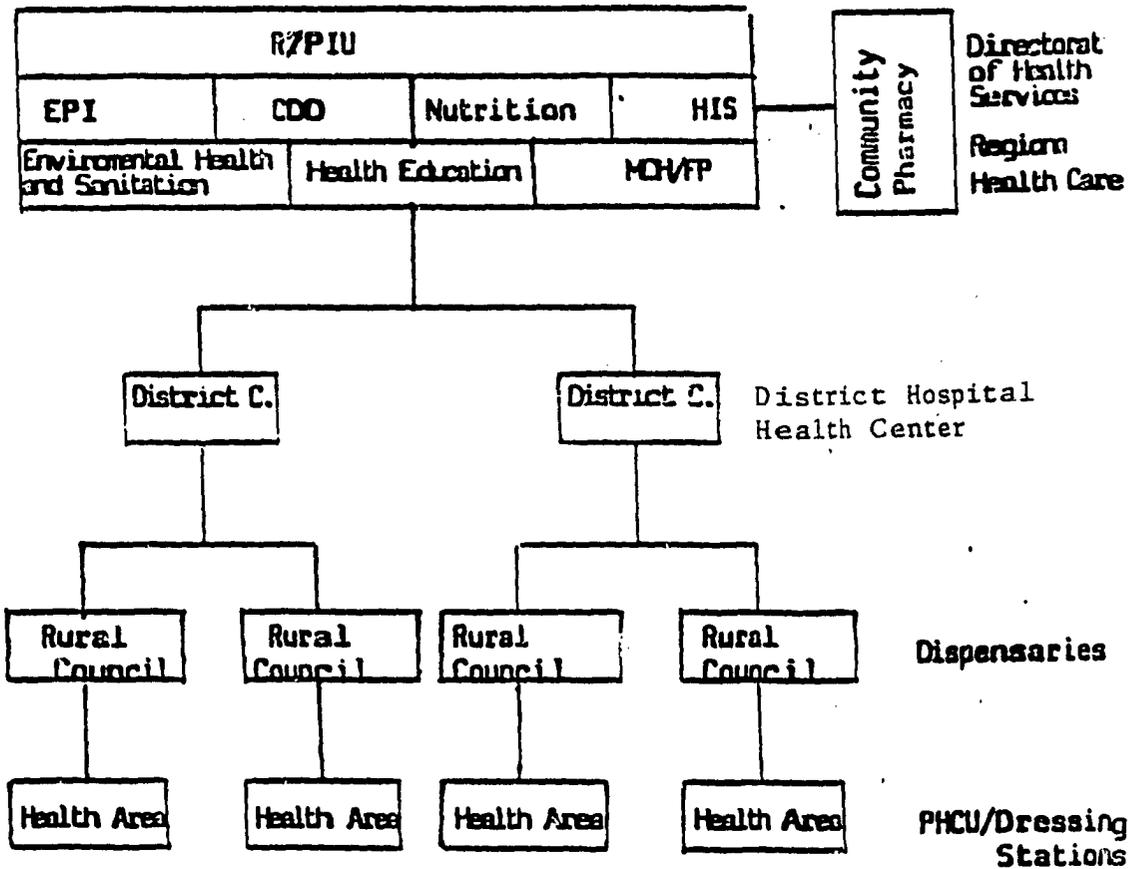
The Chief of Party was responsible for overall program direction as well as liaison with the national MOH and USAID/Sudan. The Regional Coordinators had primary responsibility for field implementation of the program. The Child Survival Coordinators provided technical assistance to the Expanded Program in Immunization (EPI), Controlling Diarrheal Disease (CDD), and nutrition. The MCH/Family Planning Advisor was charged with implementing that component of the project with particular emphasis on Kordofan where she was stationed. The Logistics Advisor, located in Khartoum, provided technical assistance to the two program regions, commodity procurement and distribution, and team support for all three locations.

During the course of the Project, MSCI's initial Child Survival Coordinator in Kordofan was replaced. The Regional Coordinator for Darfur returned to the United States, and a Sudanese physician was recruited for the position through the end of the contract.

The expatriate team was originally scheduled to be in Sudan from December 1988 through June of 1990. In June 1989, the civilian government of Sudan, however, was replaced by a military regime. This action compelled USAID/Sudan, under Section 513 of the U.S. Foreign Assistance Act, to curtail activities. MSCI was requested to terminate all

**RURAL HEALTH SUPPORT PROJECT**

## REGIONAL STRUCTURE



assistance and return its expatriate staff to the United States by the end of February, 1990. It complied with this mandate cutting short a number of planned activities.

The RHSP is seen as the major Primary Health Care supporter for the regional Ministry of Health staff in the two regions. The Project has been a major source of funding for Primary Health Care activities in Kordofan and Darfur, in addition to the required financial support to carry out planned activities. In Darfur the MSCI functions at the regional headquarters level were supplemented by PVO assistance to the rural fixed facilities. The Project provided technical assistance with regional MOH staff working closely with contract technical advisors on all project activities. The RHSP financial management (counterpart funds) was the sole responsibility of the MOH for all intents and purposes.

The RHSP activities are planned at the regional and district levels. A management body of health personnel, MOH plus expatriate technical advisors, called the Regional Project Implementation Unit (RPIU), is responsible for policy-making and program oversight. Specific subcommittees take on the role of planning, monitoring, supervising and evaluating the RHSP activities. RPIU members include the following:

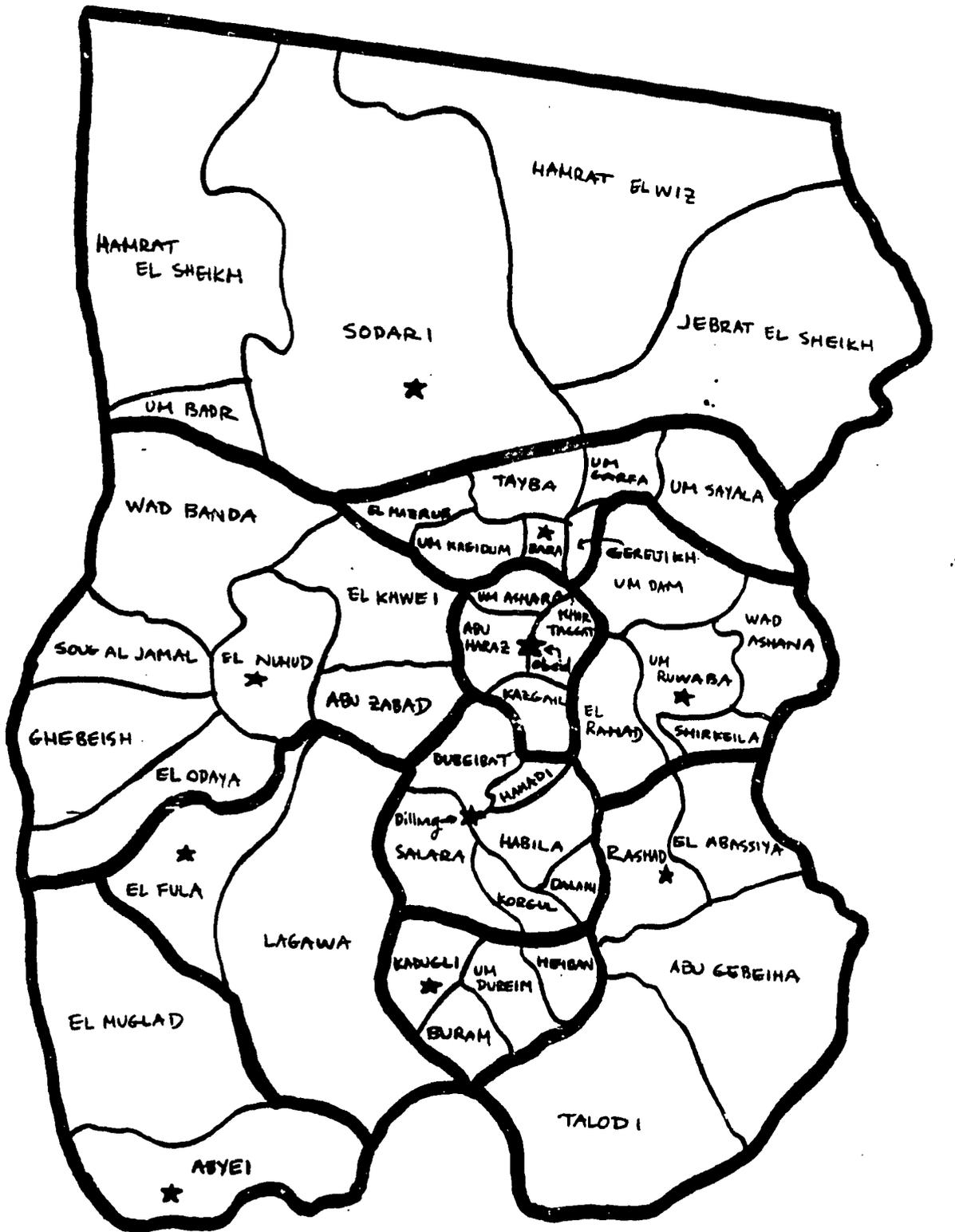
- o Regional Director of Health Service,
- o Provincial Directors of Health Services,
- o Regional Public Health Inspector, and
- o MSCI Technical Advisors.

Section heads of EPI, CDD, nutrition, MCH/FP, accounts, logistics, Community Pharmacy and Statistics participate in RPIU meetings when activities related to their sections are discussed.

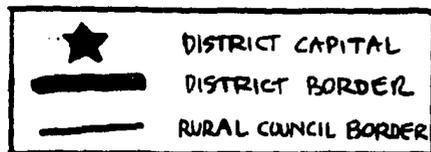
The RHSP activities are concentrated in the pilot areas; in Kordofan: El Rahad, Bara, and Dilling; in Darfur: Mellit and Kuttum. Pilot Health Area management is under the direction of the Primary Health Care Committee (PHCC). The members of the PHCC include the following:

- o District Administrative Officer,
- o Medical Inspector,
- o Senior Medical Assistant,
- o Health Visitor,
- o District EPI Officer,
- o District Statistics Officer,
- o Pharmacist, and
- o Leading members of the community.

District PHCCs, in turn, have established and supported village Health Committees which are responsible for promotion of health services in their communities.



# KORDOFAN REGION



## 2. KORDOFAN RHSP PROGRAM

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Kordofan is the largest of Sudan's nine regions, encompassing a land area in central Sudan of 380,000 square kilometers (see map next page). The northern portion of the region is predominantly sandy semi-desert. As one moves southward, there is a shift toward more plentiful vegetation, with the terrain varying between grassland savannah, black cotton soil, laterite soils and thick bush. To the south of Rahad are the Nuba Mountains, including Jebel Al Dayer, the third highest peak in Sudan.

The region has only a handful of paved roads. Most travel is over desert track or deeply rutted routes. There are regular bus connections to Khartoum, a journey of about 12 hours. The train, which runs west from Kosti via El Obeid to Abu Zabad and Babanousa, takes about a day from El Obeid to Khartoum. Sudan Air also flies between El Obeid and other major towns in the country.

Seasonal rains from July through October make vehicle travel impossible along certain routes. There is virtually no telephone communication between districts.

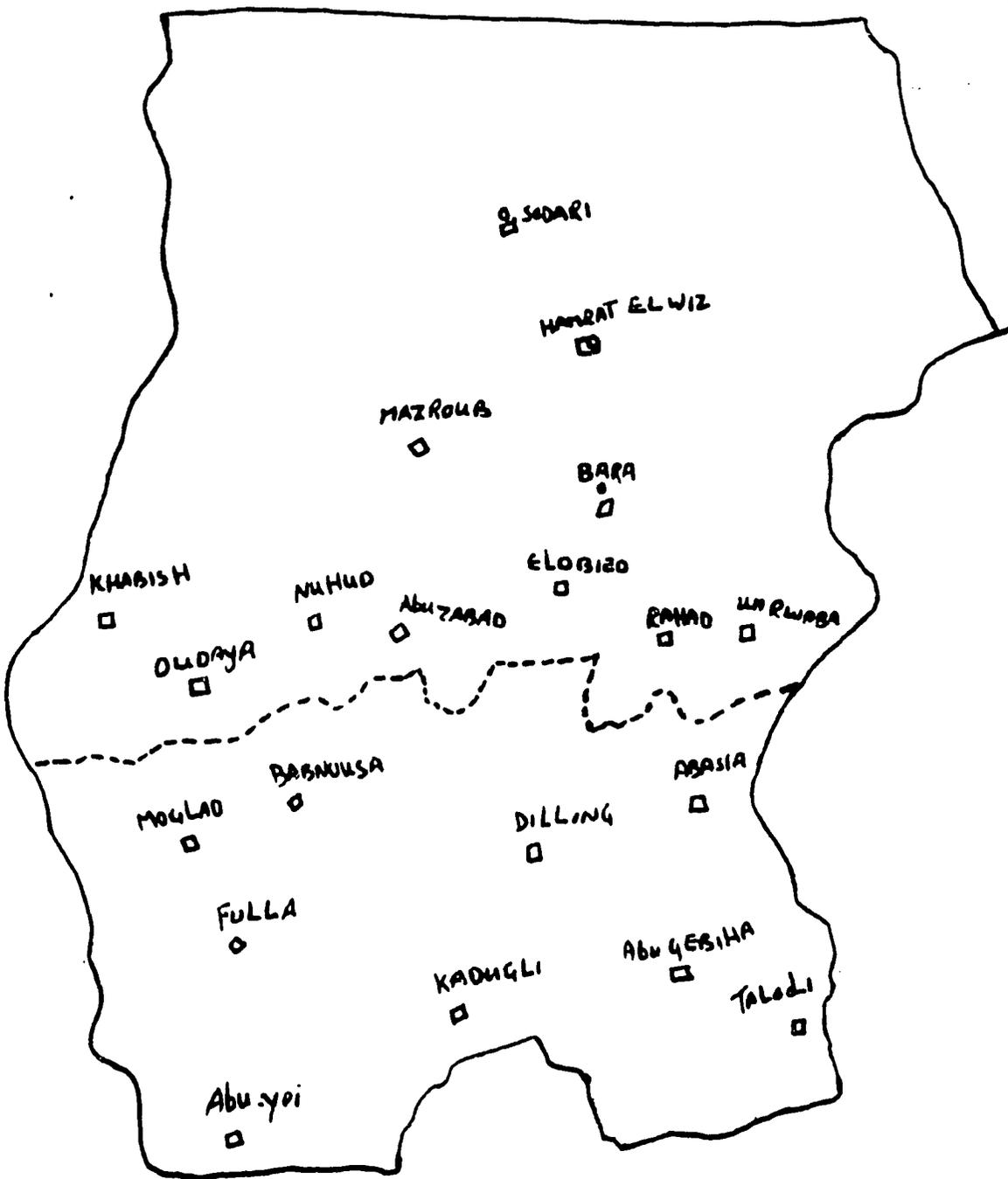
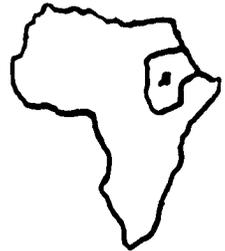
The Regional population for 1989 is estimated at 3.68 million inhabitants, based on the 1983 census and an annual growth rate of 2.1 percent in the region. Population density is low: 8.5 persons/square kilometer. The distribution between urban, rural sedentary and rural nomadic is approximately as follows:

Urban	13%
Rural settled	63%
Rural nomadic	24%

Program components of the RHSP in Kordofan are divided into the following subsections:

- o Management,
- o Training,
- o Child Survival Program
  - \*Expanded Program of Immunization (EPI)
  - \*Control of Diarrheal Disease (CDD)
  - \*Nutrition,
- o Maternal and Child Health/Family Planning (MCH/FP), and
- o Sanitation.

# KORDOFAN REGION



## A. Management

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When MSCI took over the Project, it was evident that strengthening of the regional MOH infrastructure and management capabilities was necessary. The method selected was by restimulating the RPIU to maintain responsibility for policy making and oversight of the PHC Committees in pilot Health Areas (see map next page). These health committees should be able to plan, budget and supervise PHC activities within their communities. A final goal of the management sector was to implement PHC activities in a more integrated and comprehensive manner.

### 1. Proposed Work Plan Activities:

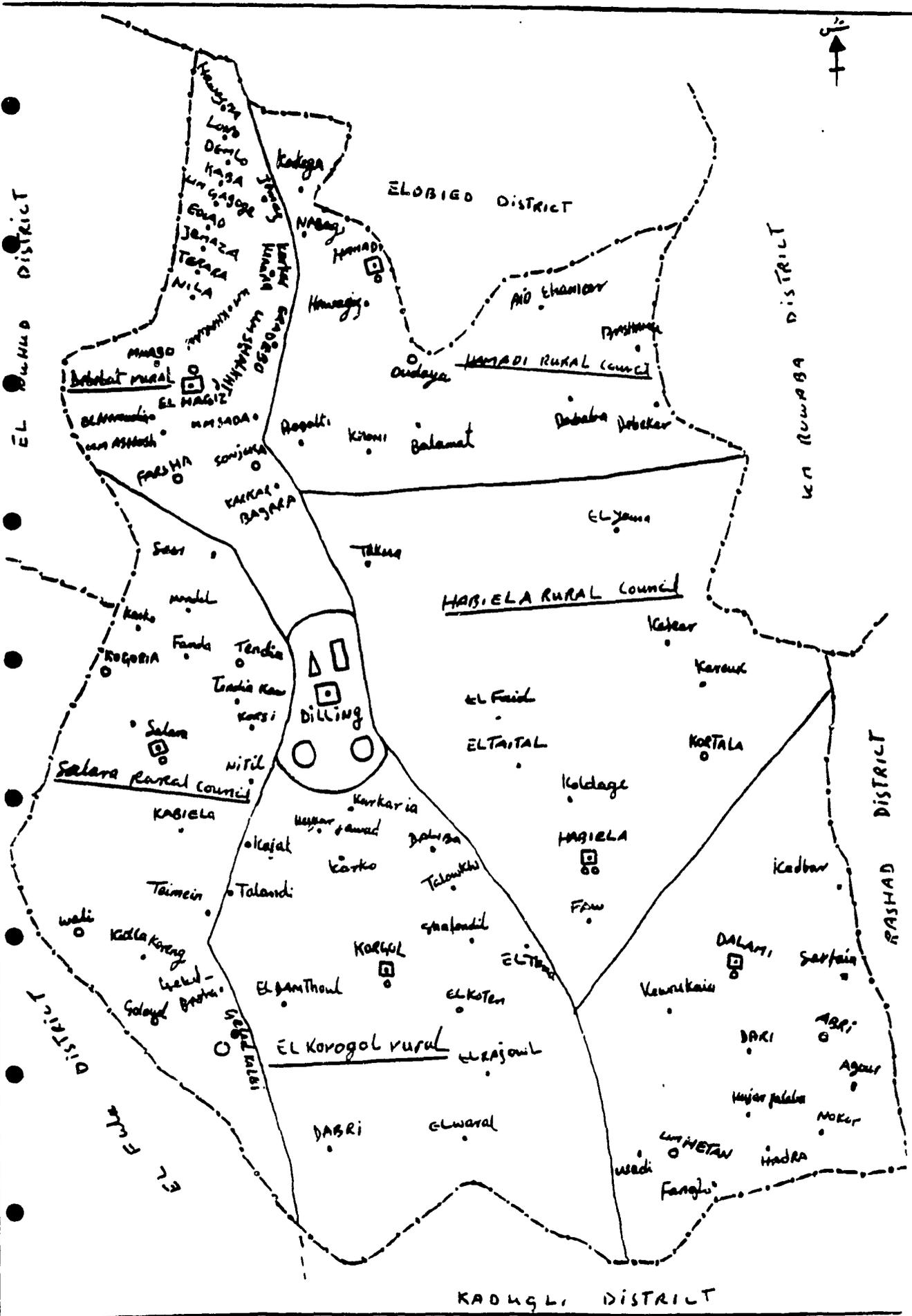
Activities are planned by the RPIU with assistance from the MSCI technical advisors. The activities are:

- o Assist with the development and functioning of the RPIU. The RPIU has identified pilot Health Areas where the RHSP will be concentrated.
- o Aid the RPIU in the preparation of semi-annual reports and budgets, with necessary program narratives, to be sent to the MOH in Khartoum.
- o Attempt to increase community participation in PHC through Health Area Councils.
- o In collaboration with other donor agencies, help the MOH to strengthen existing vehicle repair and logistics facilities.
- o Institute a Health Information System (HIS), develop forms for electronic data processing and appropriate equipment, software, and train staff to operate the system.

### 2. Activities Accomplished:

The RPIU held regular bimonthly meetings during the first four months of 1989, but as the year progressed, meetings became more infrequent. The RPIU developed three semi-annual reports and budgets in collaboration with the RHSP and MSCI staff. These were submitted to the national MOH who in turn forwarded them to the Ministry of Finance and Economic Planning (MFEP).

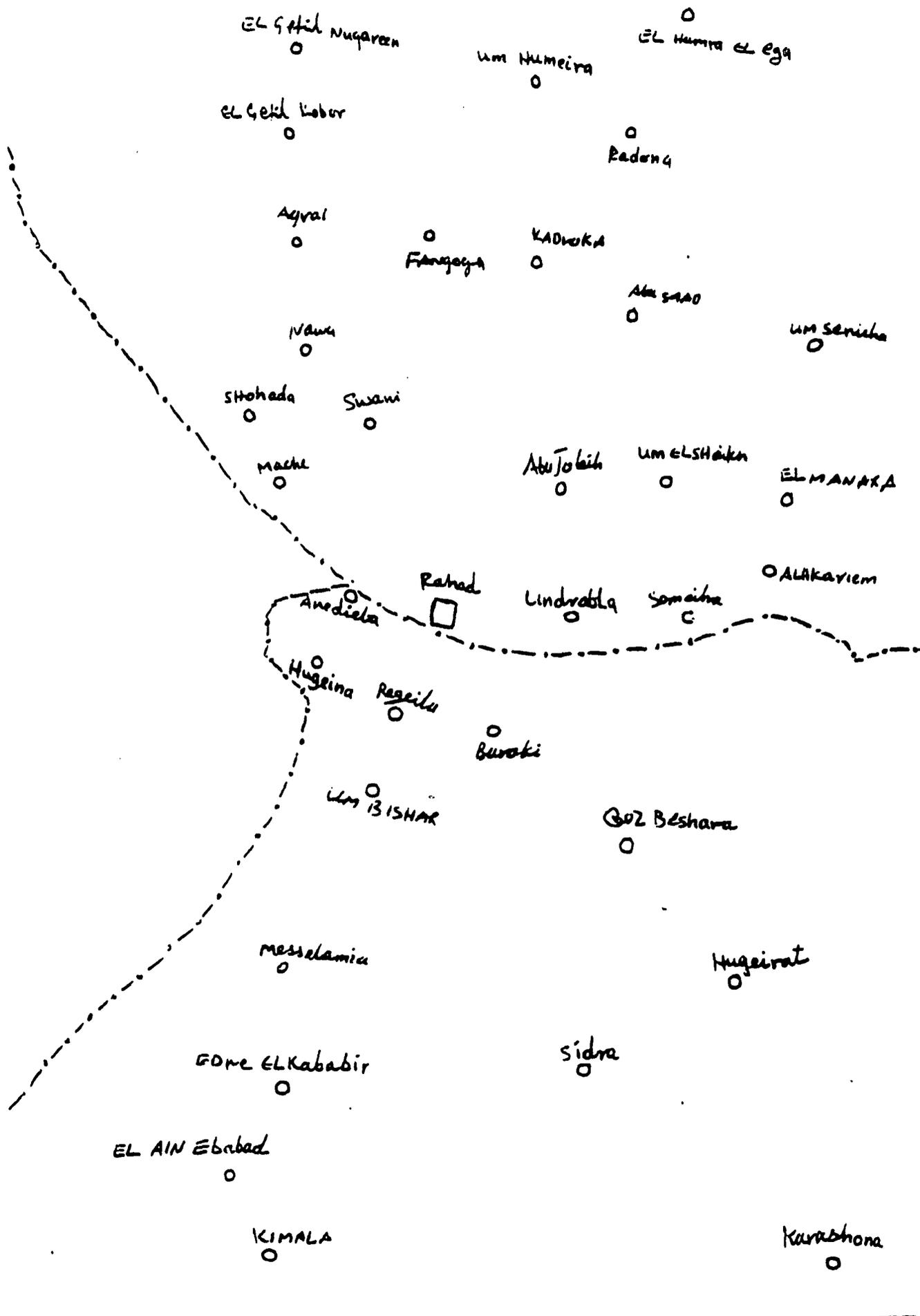
The MSCI team, along with MOH staff, visited all three pilot Health Areas (see maps on next pages) and held joint meetings with the PHC Councils at the beginning of the contract period. Thereafter, it was left to the individual RHSP and MSCI team members



- Key
- △ HOSPITAL
  - Health Center

- DISPENSARY
- PHCU

# Rahad Rural Area



Key      □ Hospital      - - - - Railway  
          ○ PHC



to visit these Health Areas when assistance was required. Management visits, such as finance and HIS, were always made with MOH counterparts in order to facilitate sustainability once the Project was completed.

The RHSP has been instrumental in increasing the reporting of health statistics from the districts. The most recent statistics show that 90 percent of health facilities in El Rahad are reporting statistics to the region; 65 percent in Dilling; and 50 percent in Bara. This is significantly higher than the percentages reported from non-RHSP districts. Other HIS activities included:

- o Printing revised data collection forms and record books,
- o Distribution of these new forms to district health facilities,
- o Retraining of all health workers in the RHSP pilot Health Areas on data collection,
- o Evaluation of trained health workers in Bara District,
- o Establishment of a small computer unit at the Training Unit including one desktop and two laptop computers, with computer training of four core statistics staff and 15 general MOH staff for at least four weeks, and
- o Integrating reports on regional PHC activities were generated.

Logistics is an integral part of any program and special attention was given to this component. Team members monitored cold chain support, contraceptive supplies and motor vehicle spare parts or other equipment as needed.

A network of retail drug outlets, called community pharmacies, was initiated by the RHSP in Kordofan in 1983. The purpose was to make essential drugs available and at a cost considerably below private sector pharmacies. The RHSP fully funded the pilot El Obeid Pharmacy. Local Councils in Kadugli and En Nahud shared in the cost of establishing pharmacies in their communities. In the following years, community pharmacies were established at Bara, Dilling, and Rahad for a total of six by the end of the 1988. During MSCI's tenure, plans were made to open a seventh facility at Um Ruwaba.

All the community pharmacies are operating at a substantial profit, although their financial records have never been made public. Satellite outlets are reported to operate at "break even" levels. The profit is circulated in a revolving fund to open more retail outlets. These profits do not take into account subsidization of drugs and salaries. In addition to their regular MOH salaries, government employees seconded to these units are also paid an incentive from pharmacy profits. It is generally agreed that this has increased productivity and service.

Drugs are purchased from three sources: MOH Central Medical Stores (CMS), directly from UNICEF, and the private market. The mark-up is 65 percent over cost from UNICEF and the private market, and 10% over CMS costs.

### 3. Constraints:

A persistent problem has been lack of counterparts. During the year the team was in El Obeid, the MOH never appointed a regional MCH/FP Director. This left a significant gap in terms of program action, institution building, and prospects for sustainability. A related issue was that even when a counterpart was clearly available, many of these key MOH staff had full-time jobs (sometimes also private practices) outside of the RHSP. This obviously limited the amount of attention they devoted to the program.

Supervision is another weak area in MOH management. At the regional level, MSCI staff initiated most supervisory visits. Few actual visits were made by district Medical Assistants and Health Visitors who are supposed to supervise rural health workers.

The RHSP financial management of the counterpart funds is weak. Delays in preparation of financial documents caused delays in funds released to the region. Activities were started late and some were cancelled due to cash flow problems. The accounting system of the RHSP needs a complete review to improve efficiency. MSCI's attempts at providing technical assistance were constantly resisted.

Coordination with other organizations is based on informal relationships rather than in an official organized manner. The regional directorate was prodded into organizing one coordinating meeting with NGOs during 1989. The national Ministry also showed little interest in coordinating NGO and donor activities.

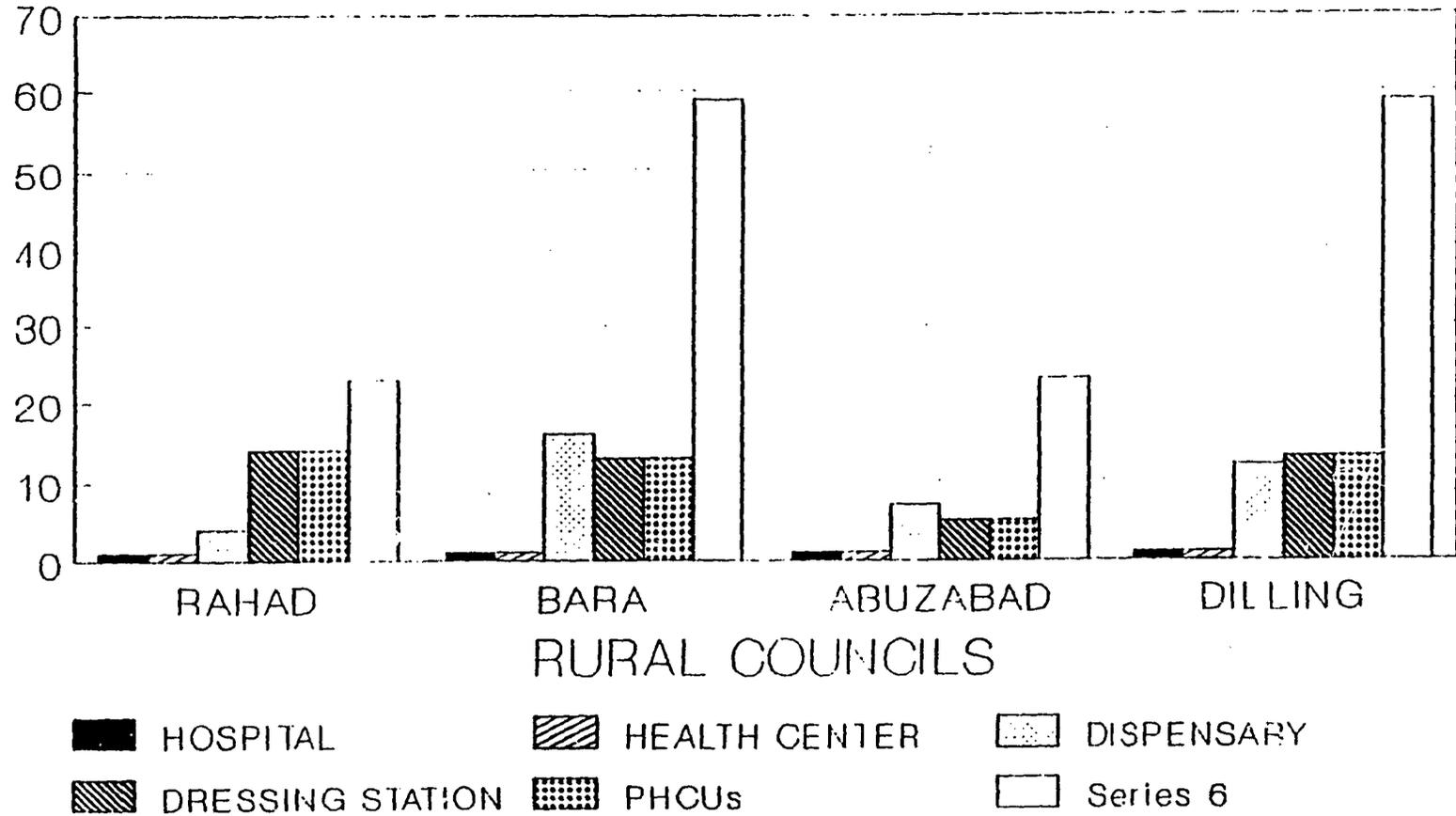
Health statistics are often unreliable and incomplete. It was observed in the RHSP pilot areas that births and deaths are registered, but not reported regularly in the region. Supplies of birth and death certificates are frequently unavailable to health facilities. Government resources are so limited that these simple forms cannot be routinely made available.

### 4. Recommendations:

Regular planned supervisory visits by all cadres of health personnel needs rethinking. Supervision should be included as a regular component of an activity when it is planned. Training certain cadres of health personnel for supervision should be seriously considered by the regional MOH. The establishment of the Assistant Health Visitor cadre to help supervise village midwives is a positive step in this direction.

# KORDOFAN REGION

## HEALTH FACILITIES



IN BARA, RAHAD, ABUZABAD, & DILLING



The RPIU would be strengthened by broadening its membership to include representatives of PVOs as well as bilateral and multilateral donors. This action would promote coordination.

Community Pharmacies should reduce its reliance on the MOH except for technical advice. This will increase community participation and allow the pharmacies to be truly community directed. Financial statements should be publicly released, through the RPIU or some other appropriate authority. Policy guidelines for their financial management should be set and adhered to at the regional and national levels.

It was observed that few mid-level staff had opportunities to make supervisory visits. A system should be developed so that nutritionists, statisticians, and midwifery tutors can accompany other MOH staff on field visits.

## **B. Training**

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The Project Paper for the RHSP included in-service training as one of its major areas of support for PHC components. When the RHSP started in Kordofan in 1984, some of the essential parts of PHC were not included in the curricula of the different health training institutes in the region and in the country as a whole. The neglected sectors were CDD/ORT, EPI, and MCH/FP. Several other training programs started in the region through the RHSP, most of them following the opening of the RHSP Training Unit in March 1987. It was evident that such a unit was necessary to coordinate, develop, and supervise all health training and education in the region.

The focus of training identified by the regional MOH and the RHSP was to support the integration of PHC components begun initially as vertical programs, EPI and CDD, and MCH/FP. Support services such as management, Health Information Systems (HIS) and logistics were also considered priorities. Support services were stressed as the specialized programs conducted most of the training themselves, except for CDD, which was fully supported by the RHSP.

### **1. Proposed Work Plan Training Activities:**

- Train health personnel on how to administer ORT to reduce mortality due to dehydration among children.
- Train health workers in VIP latrine construction and related health education and community mobilization needed for improved sanitation.
- Train health workers in basic EPI activities, and community mobilization related to EPI.

- Improve the skills of TBAs and provide them with the necessary information to perform their duties in a safe and hygienic manner. This includes proper ante-natal care and Child Survival components.
- Improve the skills of health workers in keeping proper records and preparing the required reports (monthly/annual) according to the national MOH policy and system.
- Increase the efficacy of management and supervision of health services in the region through training of managers and supervisors at regional and district levels.
- Conduct training of trainers for school teachers at regional health institutes in the key areas of health education, environmental health, program planning and curriculum development.

## 2. Activities Accomplished:

The activities which were achieved followed from the proposed work plan, including:

- o 127 health workers in North and South Kordofan were trained in CDD and how to administer ORT to reduce mortality due to dehydration among children. The curriculum was developed by a local team representing the different departments of the MOH and was tested in the community. The trainers were selected from the districts and were mostly Medical Assistants and Nursing Tutors. They attended a training of trainers program for one week on how to train and plan training sessions in the districts. The targets for this training were: MAs, CHWs, Nurses, Village Midwives, HVs, Nursing Tutors, and other health personnel.
- o A VIP construction workshop for 18 health workers and building technicians was held. The workshop consisted of lectures, discussions, group work presentations and, role play and also included practical construction work with community participation.
- o The RHSP supported several EPI training programs in Kordofan concentrating especially in the RHSP pilot Health Areas of Dilling, Bara, and El Rahad as well as Abu Zabad. These training sessions were of two kinds: basic training of one week for MAs, HVs, Nurses, CHWs, and Village Midwives; and a two-day training of trainers for HVs and Nursing Tutors. All of these followed the national EPI guidelines utilizing demonstration, role play and discussion. A three-day EPI regional workshop with 35 participants also took place.

TBA training was initiated in South Kordofan as a joint project between the MOH and UNICEF. Later, the RHSP worked with and developed several training sessions. The course was evaluated and the length of training was changed from three-weeks to two months and finally 80 days was seen as the optimum training period. The main PHC components are covered by the training as well as all the necessary midwifery skills. The curriculum administered was developed by a regional MOH/RHSP team.

The trainers were selected from HVs who had attended a training of trainers program. All the TBA trainers went to a required orientation on how to conduct TBA training courses, the reporting system and additional child survival skills. The trainer to student ratio was set at one tutor per six students. The students were chosen from local TBAs in villages where there was no trained midwife. Criteria for selection include TBAs who were interested in the training and who were between 30 and 50 years of age. An 80 day course then ensued utilizing a balance of lectures, demonstration, role play, and practice. Since the approval of the curriculum, four sessions have been conducted involving a total of 72 women.

Health information and reporting systems were found not to be properly functioning due to insufficient training of health workers, poor supervision, and lack of feedback at the district and regional levels. The RHSP and the regional MOH agreed that more training was needed for statistical clerks, registration clerks, MAs, Nurses, and CHWs. The nationally developed three-day curriculum was used with trainers from the MOH statistical department who had gone to a previous training of trainers course. Forty-two (42) health workers from Bara, Dilling, and El Rahad Health Areas have been trained.

The Adult Education Department also agreed to include health education as part of the curriculum for adult education classes. This led to the RHSP training 39 Adult Education Guides in health education. The topics covered included:

- o How to conduct health education,
- o Environmental health messages,
- o Control of endemic diseases,
- o Water and water related diseases, and
- o Planning and conducting health education.

Seventy-three (73) Medical Assistants and Health Visitors were given a 10-day integrated PHC training program by the RHSP training unit. In addition to this specialized training a 15 day leprosy training program was conducted for 28 health personnel. Further, a six-day malaria training program was also conducted for 28 health personnel. In addition, four health workers were sent to Khartoum and Gezira University for a special bilharzia control training program.

### 3. Constraints:

Most of the training programs planned for two budgeting periods were accomplished. Nevertheless, some things were not achieved due to funding shortages when the MFEP decided to withhold releases as indicated in the Management section above. Scarcity of space was also a problem when more than one training program was scheduled simultaneously; only one classroom was available for use at the Training Unit building.

Although progress has been made in this direction, coordination of MOH training activities is still less than optimal. This results partly from the territoriality of vertical programs, insufficient planning by the various MOH departments, and lack of clear policy guidelines on training. It was suggested that proposals for training should be presented three months in advance to better organize a training schedule, but this suggestion has not been generally followed.

### 4. Recommendations:

- o Train more teachers and Adult Education Guides.
- o Include community leaders in the main programs for health education training.
- o Expand sanitation training for all PHC workers, not just sanitary overseers.
- o Conduct more PHC training sessions for the District Health Educators.
- o Conduct PHC refresher courses for all health personnel who have not had a course for over two years.

## C. CHILD SURVIVAL

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### \* Expanded Program of Immunization

The RHSP has provided technical, logistical, and financial support to the regional EPI for nearly as long as it has existed in Kordofan. The EPI is recognized as one of the more effective strategies for reducing childhood morbidity and mortality.

#### 1. Proposed Work Plan Activities:

The RHSP has acted as an advisory resource and has provided supplemental funding to EPI activities in the following areas:

- o Support of mobile team outreach operations to vaccinate in rural areas where there are no health facilities,
- o Expansion of the cold chain to penetrate more peripheral areas,
- o Strengthening the supervisory capacity to monitor and support district level performance,
- o Design and conduct special purpose training courses for EPI personnel,
- o Increase community participation and sustainability through greater reliance on low cost, locally available means of vaccine and drug transportation, and
- o Foster efforts to enhance integration of EPI services within the overall PHC system.

## 2. Activities Accomplished:

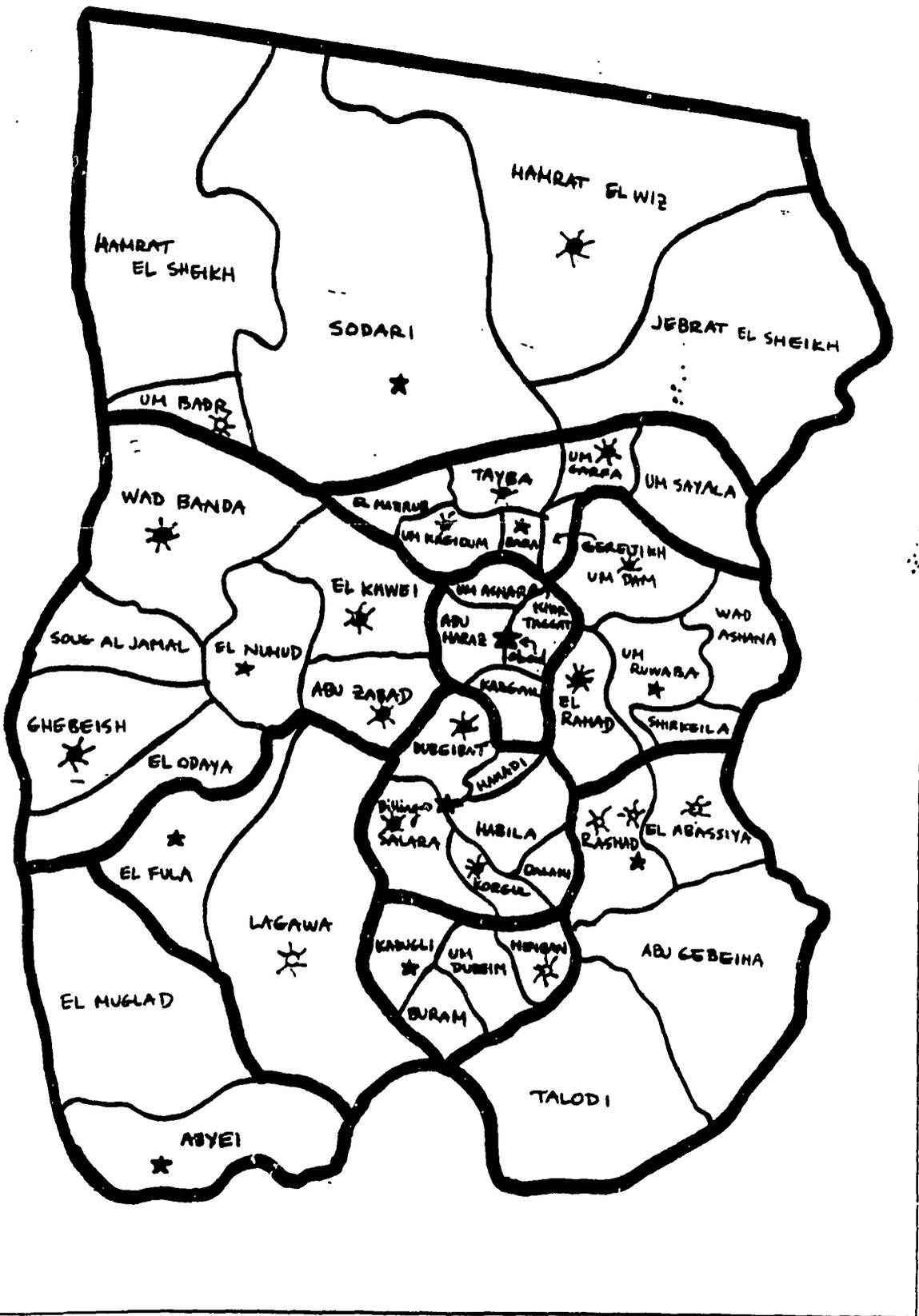
During MSCF's tenure, the RHSP funded numerous requests from EPI for support of vaccination outreach in the form of tires, fuel, spare parts, vehicle maintenance and staff per diems.

In February 1989, the national EPI program inaugurated a policy that health workers should vaccinate all women of child-bearing age (15 - 44 years) with two or more doses of Tetanus Toxoid (TT). The rationale is that under the previous policy of vaccinating women only during pregnancy, many at-risk women are missed because they never come in contact with a health worker for prenatal care.

Technical advice was aimed at contributing to developing detailed plans for delivering the TT immunization services as effectively as possible to all eligible women and mobilizing those women to seek their TT immunization. This project has now begun to be implemented in health centers, secondary and intermediate schools.

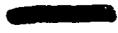
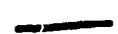
All immunization activities demand a reliably functioning cold chain that can ensure safe transport and storage of heat sensitive vaccines. During the past year, 10 solar refrigerators have been installed in five separate districts with RHSP support (see map next page). Another two broken solar refrigerators have been replaced and are being restored. It is expected by February 1990 that four more solar refrigerators will be in place.

Renovation of selected cold chain sites was also completed at El Rahad and Gebeish (En Nuhud District) and plans call for another site renovation at Dubeibat (Dilling District).



## KORDOFAN REGION

 ALREADY INSTALLED  
 TO BE INSTALLED BY END OF 1989

 DISTRICT CAPITAL  
 DISTRICT BORDER  
 RURAL COUNCIL BORDER

With collaboration from the RHSP, the EPI regional cold chain officer has developed maintenance guides and trouble shooting materials. They were translated into Arabic and then distributed. Daily monitoring forms have been developed, printed and distributed to solar unit supervisors. A supervisory plan of action and schedule was established and regular supervisory visits were made.

14 participants from EPI district level cold chain and sub-cold chain sites attended a three-day training workshop in generator maintenance and repair. This RHSP funded course was planned and led by the EPI regional cold chain officer, with input by the CARE senior mechanic trainer and MSCI technical assistance.

During the previous contractor's tenure, the RHSP developed the shanta (box) system as an innovative means to distribute vaccines, essential drugs, or other health supplies from the health center level to small rural Primarily Health Care Units (PHCUs). Filled at the health center, the shanta (a lockable metal box about the size of a two drawer file cabinet) travels by camel, souk lorry or other local forms of transport to reach its destination. Supervision and monitoring of the system is conducted at the health center by the EPI cold chain officer; at the village level it is the responsibility of the health worker at the PHC Unit usually a MA or CHW. This shanta system has continued to be supported by the RHSP and is believed to be sustainable in the long run; given economic and transport constraints facing the MOH.

### 3. Constraints:

Continued promotion of mobile teams has been somewhat incompatible with the MOH's expressed goal to reduce reliance on vehicle-dependent strategies and a shift to more fixed site services.

Few health workers are aware of the recent change in national policy to immunize all women of child bearing age, and as a result do not regularly offer TT vaccinations to all women. Discussions about implementation tend to center on ambitious plans to mount vaccination campaigns in secondary schools rather than health centers.

Even where a continuously operating refrigerator exists, most health workers have not yet offered vaccinations on a daily basis.

Community mobilization and participation efforts have not been given the same priority as technological concerns and equipment; both of which seem to occupy EPI officials more.

The shanta system has faltered partly because the most sought after items, curative drugs, were frequently unavailable. Some villages undoubtedly lost interest because their shantas did not arrive back with the desired drugs, while vaccines do not hold the same attraction. Moreover, the proposal to revise the reimbursement rates for use of private transport warrants consideration because transport costs have risen significantly.

#### 4. Recommendations:

- o Greater effort is required in community mobilization and education for promoting childhood vaccination and TT immunization for women.
- o More solar refrigerators should be installed. It is one of the most tangible products of the RHSP Child Survival component. The solar refrigerators represent an important amplification of the region's cold chain and can make immunization accessible to more mothers and children.
- o Place more effort to rejuvenate and expand the shanta system through more supervision and possible increase in reimbursement rates.
- o The move to fixed sites should be encouraged in Kordofan. Fixed sites make greater integration of Child Survival services possible, can offer lower cost and more sustainable services.

#### \* Control of Diarrheal Disease (CDD)

The CDD program focuses on promoting widespread understanding of diarrhoea prevention and management. This is done at both the community and clinical levels.

##### 1. Proposed Work Plan Activities:

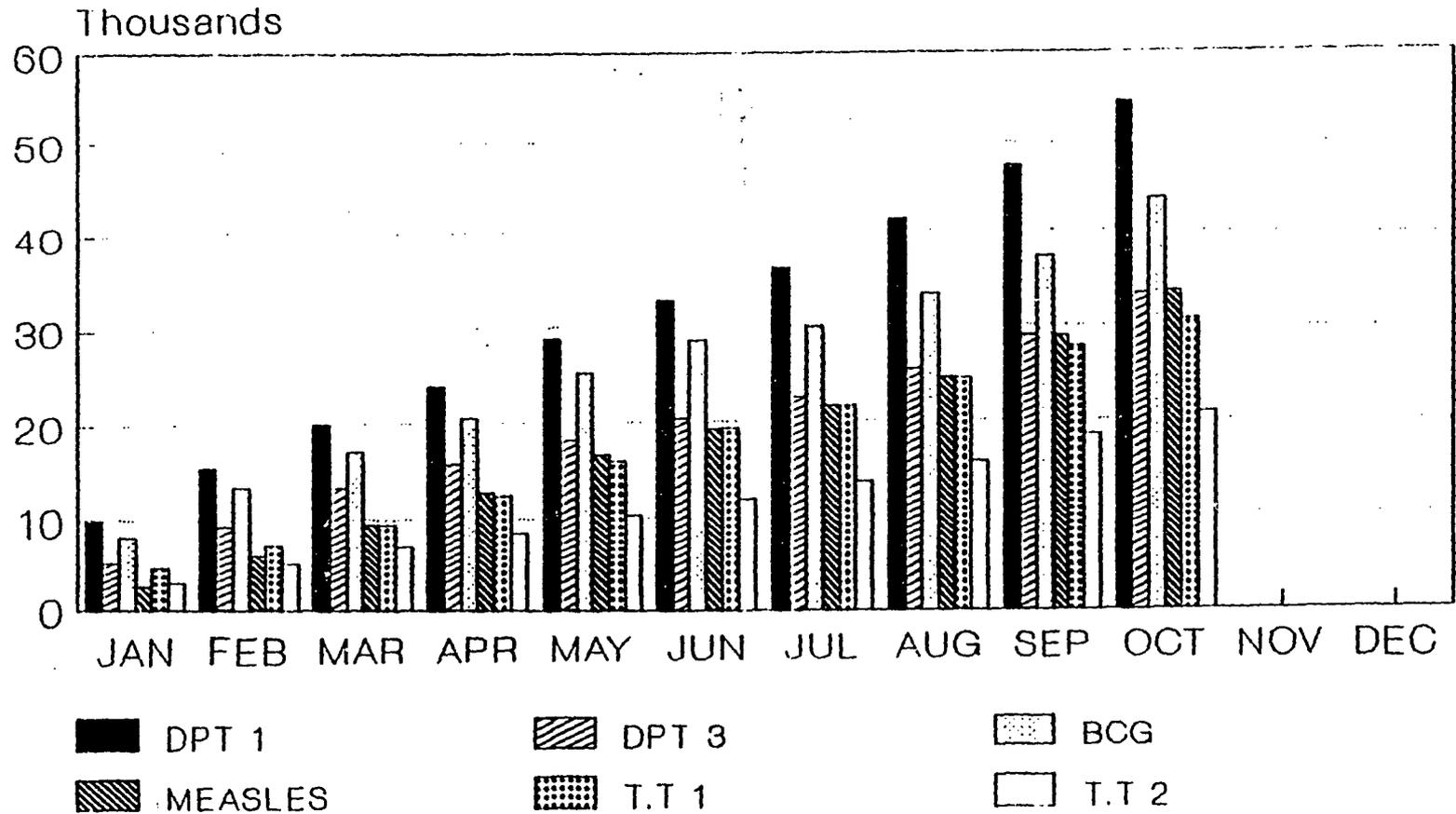
The prescribed mechanisms for the RHSP assistance to the CDD program were:

- o Supervision and monitoring of oral rehydration teaching and treatment centers known as ORT corners,
- o Opening of additional ORT corners,
- o Supervisory site visits to monitor and support CDD activities in rural health facilities, and
- o Community based training courses for PHC workers and mothers.

##### 2. Activities Accomplished:

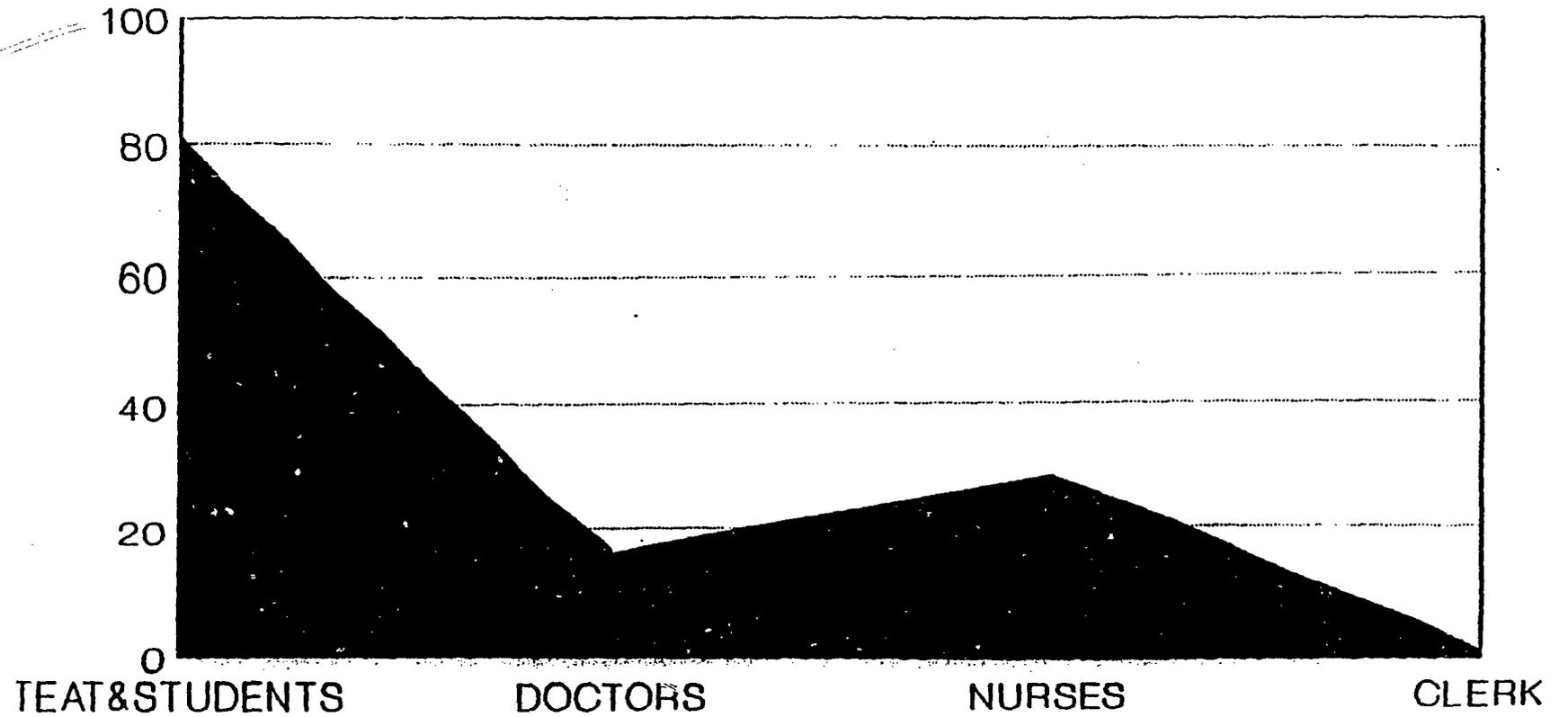
- o Six supervisory visits were made to the ORT corners located at Wad Elias Health Center (El Obeid), El Obeid Hospital and Bara Health Center. Following each visit written and/or verbal feedback to the ORT corner staff and the CDD coordinator were provided. All visits to rural health units for any purpose (over 20 visits) were used as opportunities to question and

# VACCINATION ACHIEVEMENT KORDOFAN REGION 1989



# RHSP TRAINING UNIT

## ORT/CDD FORM JAN-NOV 1989



supervise peripheral health workers with respect to their CDD treatment and education activities.

- o A new ORT corner has been under development at Er Rahad Health Center with RHSP financial support. A plan to open another ORT corner in Abu Zabad Health Area was dropped when Abu Zabad was deleted as an RHSP pilot area.
- o With RHSP support, the CDD senior trainer conducted one four-day supervisory follow-up trip in Abu Haraz Rural Council to assess the performance of health workers and mothers who had participated in a 1988 Phase II (community based) training.
- o The RHSP will finance the purchase from the national CDD program of 3,000 one liter ORS mixing jugs. The distribution and subsidized sale (LS5 each) at the district and sub-district level will generate funds to support ongoing CDD education and service activities. These are slated for distribution in February-March 1990.

3. Constraints:

Efforts at team building did not succeed as well as in other RHSP collaborations. This lack of attention by CDD resulted in less RHSP support.

There was little follow-up and supervision outside El Obeid. This led to fewer than expected training sessions and fewer ORT corners being established in rural areas. This also resulted in slower CDD progress in actively integrating their activities with other Child Survival programs.

4. Recommendations:

- o While continuing its efforts in El Obeid, CDD should place more attention on the rural areas than it has in the past.
- o More emphasis should be put on community based Phase II activities, especially training of mothers.
- o ORT corners should be expanded as an example of integrated Child Survival activities. The corners should become nutrition rehabilitation centers where a mother can be trained in all facets of Child Survival skills, especially ORT, weaning foods, importance of growth monitoring, and immunization.
- o Establish more ORT corners in the rural areas.
- o CDD activities should control and be integrated with VIP latrine construction and parasite control.

\* Nutrition

Nutrition had never been targeted as a specific area for RHSP support until MSCI took over technical advisorship. The rationale for this omission had been that UNICEF took the lead in sponsoring nutrition activities in Kordofan. It was apparent, however, that the Regional Nutrition Department lacked the managerial and planning capacity needed to be able to take advantage of the resources UNICEF had to offer.

1. Proposed Work Plan Activities:

The RHSP decided to provide assistance in the following areas:

- o Guidance to regional nutrition leadership in program planning and management techniques (e.g., assessment of resources, development of activities, timelines, and proposals),
- o Collaboration in the design and implementation of special research projects, including training for nutrition officers in research methods, and
- o Information-sharing through the collection, distribution and discussion of current nutrition research and programs.

2. Activities Accomplished:

- o Throughout the final year of the project, a number of pertinent research reports and other resources were identified, gathered and shared with the MOH and non-governmental organizations.
- o The RHSP has been integrally involved with the Nutritional Communication Project, an AID/W centrally funded multi-country project, in which Sudan is a target country. This was part of an in-depth qualitative study of infant nutrition in Sudan. The project's end-product was to be the development of nutrition education strategies and the design of messages that are more responsive to peoples' existing beliefs and practices, and hopefully, more effective. Full implementation was curtailed due to Section 513 restrictions.

3. Constraints:

Nutrition was basically a dormant program in Kordofan until the arrival of the MSCI contractor generated renewed interest in this critical area. The advisors actively encouraged the involvement of the nutrition department in operations research. It was hoped this would prove to be a catalyst for future action even though some basic nutrition activities, such as growth monitoring, vitamin A deficiency prevention, and simple nutrition education, were neglected. If the contract had not ended early, it was felt that moves in this direction would have been made.

4. **Recommendations:**

- o **Design nutrition education curricula for mothers and nutrition educators utilizing the results of the nutrition communication project. These should have accompanying demonstrations and simple low cost teaching aids.**
- o **Train more health workers in growth monitoring and integrated nutrition.**
- o **Start vitamin A deficiency prevention education to be combined with semi-annual vitamin A capsule distribution to children under 6 years of age and post-delivery lactating women in the drought prone areas. The vitamin A education should be combined with establishment of demonstration home gardens at as many health centers and schools as possible.**
- o **EPI should participate and aid in growth monitoring to better integrate Child Survival activities.**
- o **Expand ORT corners to be nutrition rehabilitation centers, a natural step since some ORT corners are already providing simple weaning food, hygiene and breast feeding advice.**

#### **D. Maternal And Child Health/Family Planning (MCH/FP)**

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Strengthening MCH/FP services, including the promotion of child spacing, has been a priority of the RHSP since the beginning of the project. Although reliable data is difficult to obtain, and accurate statistics are unavailable, it is well known that infant and maternal mortality are high. A high fertility rate, along with short spacing intervals, are contributory factors. Over 90 percent of deliveries in Kordofan are done at home, supervised mostly by untrained Traditional Birth Attendants (TBAs), giving rise to increased risks for both mother and infant. Most women receive inadequate pre- and post-natal care, if at all, and often do not have access to basic Primary Health Care services.

The overall objective of strengthening MCH/FP services in Kordofan through the RHSP has been carried out by concentrating on establishing baseline data from which to plan MCH/FP activities, by upgrading of curricula and training for the various cadres of health workers, improving information systems and data collection, and helping to establish an organizational body to guide the strategy for MCH/FP services.

##### **1. Proposed Work Activities:**

The activities assumed by the RHSP to increase MCH/FP status are:

- o Strengthening the Regional MCH/FP steering committee,
- o Initiation of TBA training,
- o Support of Midwifery training,
- o Conduct of a family planning knowledge, attitude and practice (KAP) survey, and
- o Contraceptive supply to the community pharmacies.

##### **2. Activities Accomplished:**

- o The Kordofan MCH/FP steering committee was established in October 1987. This committee, however, met only once before MSCCI arrived. Regular meetings resumed in March 1989. Members of the steering committee who routinely attend meetings include the Director General of Medical Services, and the Regional PHC Coordinator, the Senior Ob/Gyn, the national MCH/FP project representative, the Nursing and Midwifery Inspector, and the MSCCI Regional Coordinator, MCH/FP Advisor, and the Child Survival Coordinator.

- o The specific objectives of the steering committee include setting general policies, planning, implementing and supervising regional MCH/FP activities of all organizations in the region, including NGOs. The committee is responsible for follow-up of training activities and supervision of MCH/FP components of PHC programs. The Committee also helps with the establishment of district MCH/FP programs.
- o The MOH strategy to train TBAs stems from inadequate coverage by government trained Village Midwives (VMWs). The high cost of training VMWs could prohibit their numbers from increasing sufficiently to meet the demand. It is estimated that TBAs attend up to 90 percent of the deliveries in the rural areas, thus it is logical that improving their skills will improve delivery outcomes. They can be used as well to carry PHC messages to the rural areas.
- o In 1989, the 74 TBAs were trained at four different sites. The TBAs selected for training are generally well respected members of their communities. Their age usually averages in the 40s to 50s and most have been practicing for many years. The participants are selected mainly on the basis of need (no trained VMW nearby), proximity to a health facility, age, experience and willingness to undergo a long period of training. The course is 80 days concentrating on the practical experience of doing pre- and post-natal care, and supervised deliveries. PHC components of MCH were introduced into the new curriculum. The major topics of the course now covered include:
  - o TBAs' role in society,
  - o General hygiene,
  - o Use of TBA kit,
  - o Antinatal care,
  - o High risk referral,
  - o Sterilization,
  - o Normal delivery,
  - o Post-partum care, and
  - o Child Survival (EPI, CDD, nutrition, and FP).

The course is taught with a great deal of repetition and memorization by the TBAs. Hands-on practice is used whenever possible. Pelvic models and dolls are used for demonstration. Very few other visual aids are available. The TBAs, however, are very enthusiastic and learn quickly. Fourteen (14) HVs have been trained as TBA trainers. They have been through a one-week training of trainer's course as well as a three-day orientation to TBA training. No more than six TBAs are taught by each HV. Most courses have had 18 TBAs and three HV trainers. RHSP and MOH felt it was important to carry out an evaluation to validate the training and to point out areas of weakness. Since baseline data is not available, the qualitative focus group technique was used to look at results of the Hamadi training which took place in 1988. In mid-September, 1989, a

consultant from the Department of Community Medicine at the University of Khartoum came to Kordofan to conduct a focus group evaluation of post-trained TBAs and those currently being trained. She found the TBAs still very knowledgeable about what they had been taught during their training. Their delivery kits were all well-kept and in good condition.

Another important area for improved training is the VMW training program. There are four midwifery training schools in Kordofan which graduate approximately 160 students a year. The RHSP has been committed to supporting these schools through funding for furniture and equipment, teaching aids, and other material.

No major community-based survey investigating maternal mortality and its correlation has been done to date in Kordofan. The RHSP felt this was an important project as a basis to improve and expand MCH/FP services. A community based maternal morbidity and mortality survey was undertaken by the RHSP and the Community Medicine Department of the University of Khartoum using the sisterhood method piloted in Gambia, West Africa. (The sisterhood method records how many sisters of the primary informant died in childbirth). The field work for the survey was conducted in November-December 1989 in Bara District, North Kordofan. A team of nine interviewers and two supervisors spent 18 days in the field interviewing 1,260 households with questions designed to calculate estimated maternal mortality, and to look at family planning knowledge and use, birth history, prenatal care and infant mortality. In addition, new registration forms concerning vital events such as births, maternal deaths and under age 5 deaths were designed and distributed to all the villages in one rural council of Bara District.

The RHSP contracted with the Rural Extension and Development Program of Ahfad University for women to undertake a family planning KAP survey in the Kordofan Region. Three questionnaires were developed: one for women of reproductive age, one for male spouses and one for health workers. Interviews were conducted both in El Obeid and Bara Districts. From this pre-test, a single concise questionnaire was developed which can be used at a later date for a more comprehensive KAP survey.

Ensuring an adequate supply of contraceptives to meet current and growing demand is necessary to promote the expansion of family planning services. To achieve this goal, the RHSP has diligently tried to supply its community pharmacy network with contraceptives to ensure that they are available to women at a reasonable and affordable price. An initial shipment of supplies was also sent to Darfur. This initial stock will serve as a pilot activity to assess the efficacy of supplying contraceptives through the community pharmacy network. A prescription is required for dispensing the pills, and therefore, the success of this idea will depend to a large extent on the health providers.

### 3. Constraints:

There was no appointed full time Regional MOH MCH/FP coordinator and thus the MSCI MCH/FP Advisor had no real counterpart with which to work. At present the MCH/FP responsibilities are mainly handled by the Senior Ob/Gyn physician who, although very interested, is greatly overworked and cannot be depended upon to carry out the day-to-day functions necessary to have an effective regional MCH/FP program. The responsibility to call meetings and approve policies also falls mainly on the Ob/Gyn consultant. The steering committee is currently not taking a very active role in coordination of activities or supervision, and has yet to start organizing district MCH/FP workshops.

Progress in TBA training has probably been the most successful and most important contribution of the RHSP in the area of MCH/FP. Many difficulties and constraints still remain with regard to TBA training. It appears that although trained TBAs should have an elevated status in the community, there is a possibility that the community will now regard them as government agents and will stop rewarding their services; this was observed in Hamadi. There also may be competition, rather than cooperation, between VMWs and TBAs as each group may perceive the other as rivals for the same "business."

Supervision of TBAs after they have been trained is a crucial problem. They are not formally a part of the MOH, thus no real mechanism for supervision has been established. Ideally, all the trainees should come from a small geographic area where they can be supervised by a HV or MA. The TBAs should know where to go for advice and referrals, and how to replenish their supplies. Transportation is a great hinderance to supervision. Evaluation has also not been built into the program of TBA training. Therefore, supervision is essential if TBA training is to work effectively.

The curriculum used at the Kordofan Midwifery Schools was written in the 1920s and sorely needs revision, not only with regard to teaching methodologies, but also to include the PHC components of EPI, CDD, family planning and nutrition. The RHSP's original work plan called for bringing in a TDY consultant to help update the curriculum but, unfortunately, due to the various political and financial constraints in recent months, this became impossible.

Supplying the community pharmacies with contraceptives proved to be a controversial issue in Kordofan. There has been resistance from physicians, perhaps because of a possible adverse affect on the private market generally controlled by physicians. Unfortunately, no accompanying education activities were undertaken by the RHSP. The Sudan Family Planning Association is not very active in this regard in Kordofan, and made no serious attempts to solicit RHSP assistance for education activities. There also was not much interest shown on the part of the MOH to involve the RHSP in the promotion of family planning through the media.

Establishment of a model family planning clinic at the El Obeid Hospital never happened as planned. Since it would have entailed a substantial expenditure to purchase equipment, it should have been started very early in the year. Although it was discussed a great deal, the necessary commitment by regional MOH officials to begin the process was not in evidence.

4. Recommendations:
  - o Appointment of a competent, qualified full-time MCH/FP coordinator by the MOH.
  - o TBA training should be continued. The curriculum should be revised, including provisions for supervision and evaluation.
  - o A workable system for recording vital statistics and feedback to the Health Information System should be established based on the recent Maternal Morbidity and Mortality Survey.
  - o Expand family planning training for HVs and MAs.
  - o Evaluate the supply of contraceptives to the community pharmacy network.
  - o Family planning education for the community should be encouraged following examination of the results of a family planning KAP Survey.

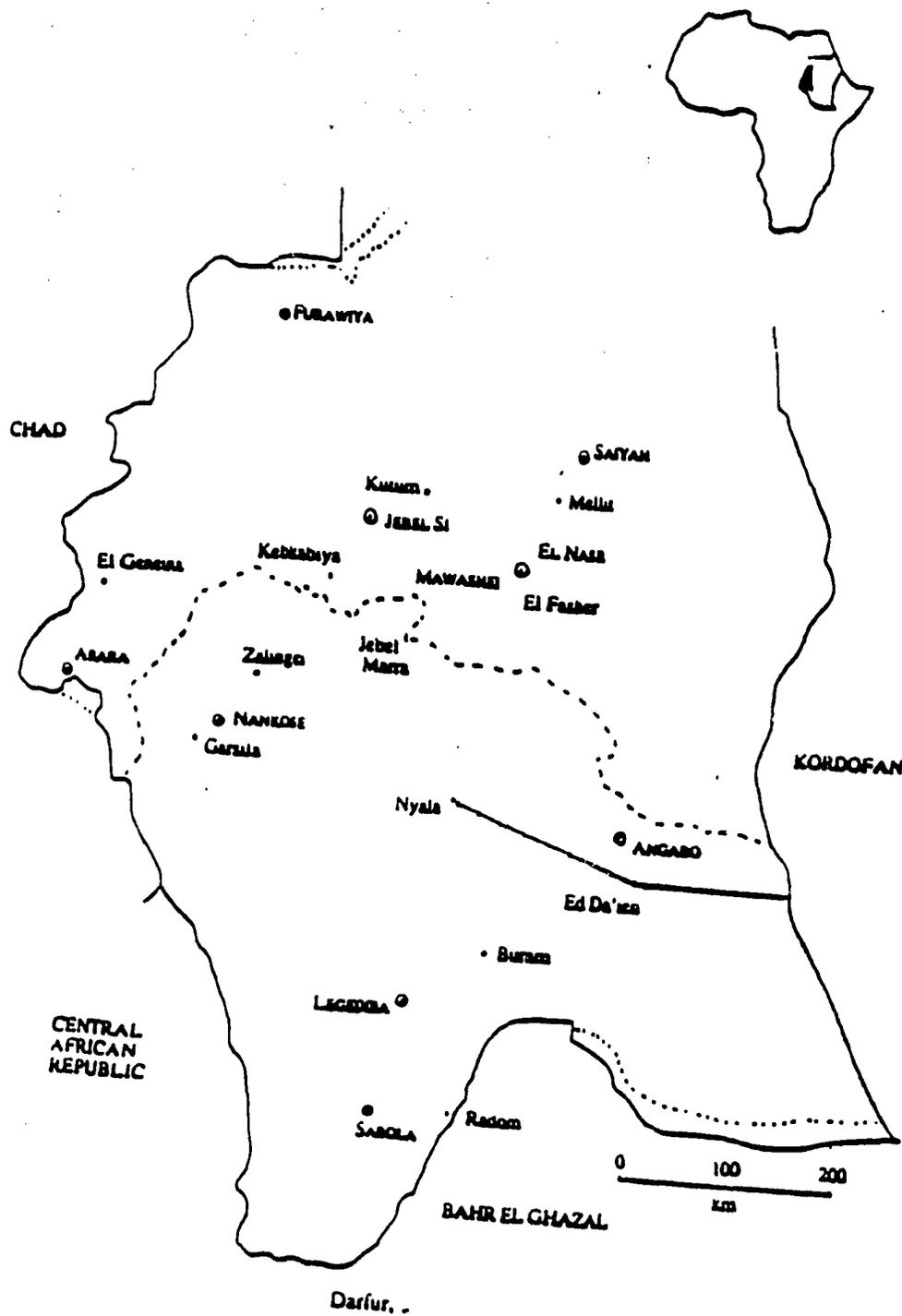
#### **E. Sanitation**

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Environmental sanitation has always been an important component of the RHSP. Emphasis has been given to sanitary waste disposal since this is a significant source of environmental contamination in rural villages. The RHSP has chosen to promote village sanitation through the construction of Ventilated Improved Pit (VIP) latrines. These are inexpensive and can be made from local materials; thus villagers can construct and maintain them easily. Project VIPs should be built as demonstration models for other community members to copy.

1. Proposed Work Plan Activities:
  - o Train PHC personnel in VIP latrine construction,
  - o Construct VIP latrines in identified villages in pilot Health Areas, and
  - o Print a VIP construction guide.
2. Activities Accomplished:

DARFUR REGION



7

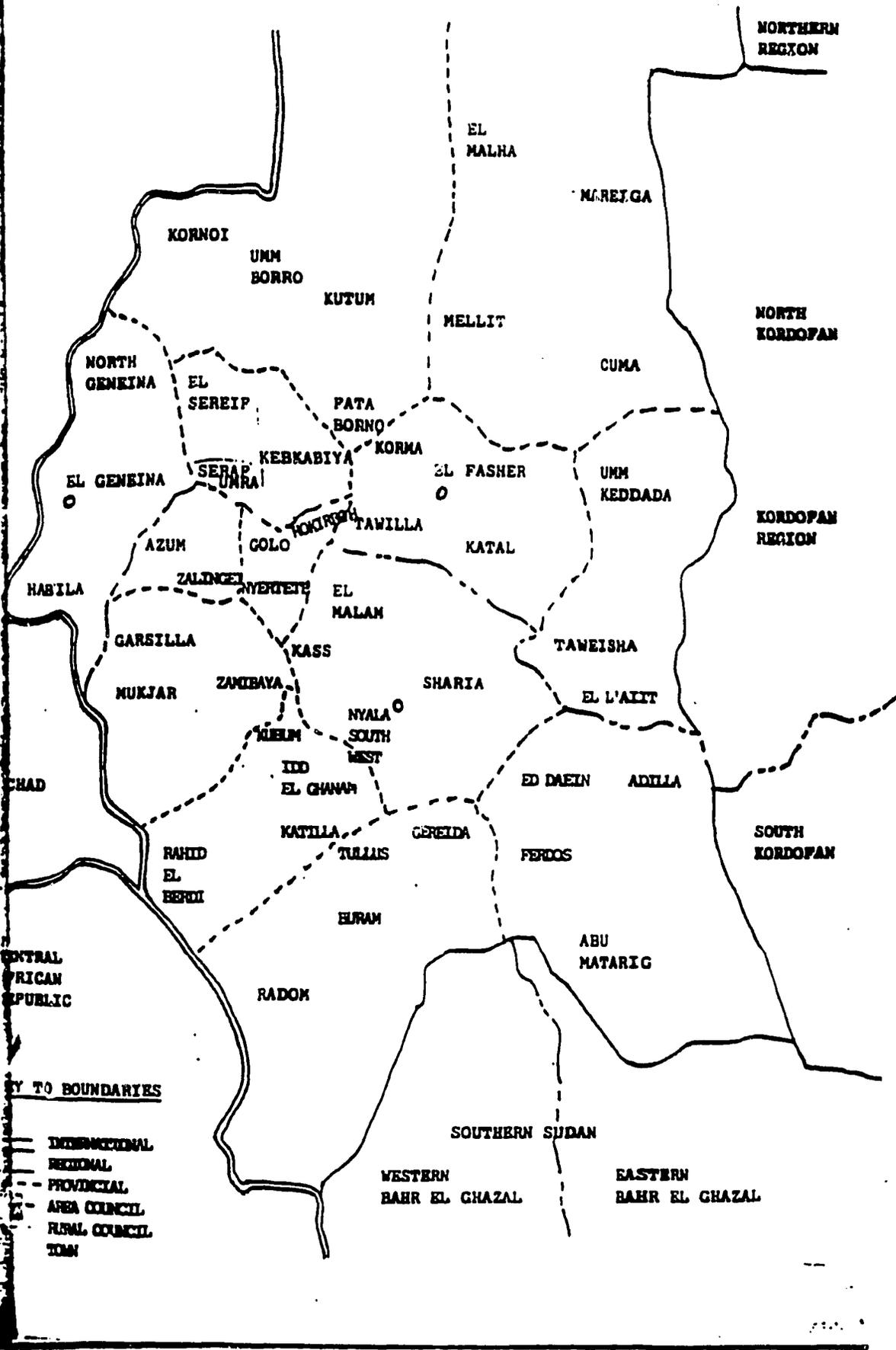
- o Four designs were agreed upon for VIP latrines. These involved simple construction techniques and relatively inexpensive materials. A cadre of para-professionals were trained in construction of these units (see Kordofan Training Section). In cooperation with UNICEF, a pilot demonstration project was inaugurated in 15 villages of the El Rahad Rural Council. To date 310 latrines have been constructed there.
- o A complementary activity was drafting of a manual on VIP construction. This was pretested among villagers in Kordofan and revised. One printing of the manual was done, and some copies of the manual shared with Darfur.

### 3. Constraints:

More VIPs could have been constructed if it were not for the rapid rise in the cost of the necessary building materials. There also were numerous times when these items were not available on the local markets at any price. Adding to this problem was the fact that the community was often unwilling or unable to bear their share of the construction costs. Many times this happened because some NGOs and other organizations built free VIPs in these areas.

### 4. Recommendations:

- o Train more community members in VIP construction so they can build their own and not have to depend on government finance and initiative.
- o Sanitation should have a safe clean water supply development component. This could be done by coordination and cooperation with the various government departments and NGOs concerned with water resources.
- o More community education related to sanitation is needed.



### 3. DARFUR RHSP PROGRAM

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Darfur region is located in the western part of the Republic of the Sudan bordering Egypt, Libya, Chad, and Central African Republic (see map next page). It is about the size of France, consisting of mostly arid desert in the north and gradually changing to savannah forest in the south. Most of the population of over 3.1 million live in a band across the region's center. Here the annual rainfall ranges between 100 and 600 mm. The vast majority of people are subsistence farmers who often also engage in small livestock trade, including camels, cattle, sheep, goats, and donkeys. Large herds of cattle and camels are herded on a semi-nomadic basis. It is estimated about 20% of the population are in fact nomads. Both farmers and pastoralists eat chiefly millet and sorghum. Animals are kept usually to sell for grain and other necessities; supplying milk and meat are only secondary.

The rainy season lasts from June to September, although this varies from year to year. This variance can create great havoc to crops and livestock in this region which is already overpopulated by grazing animals and people to be ecologically stable. The region is exposed to severe desertification, especially around the major town areas. This can be attributed to over-farming, over-grazing, and deforestation. Darfur suffered severe drought from 1983-86. The past crop year, 1989, has also been a substandard rainfall year in some areas. As a result, it is expected there will be localized food shortages in the coming year.

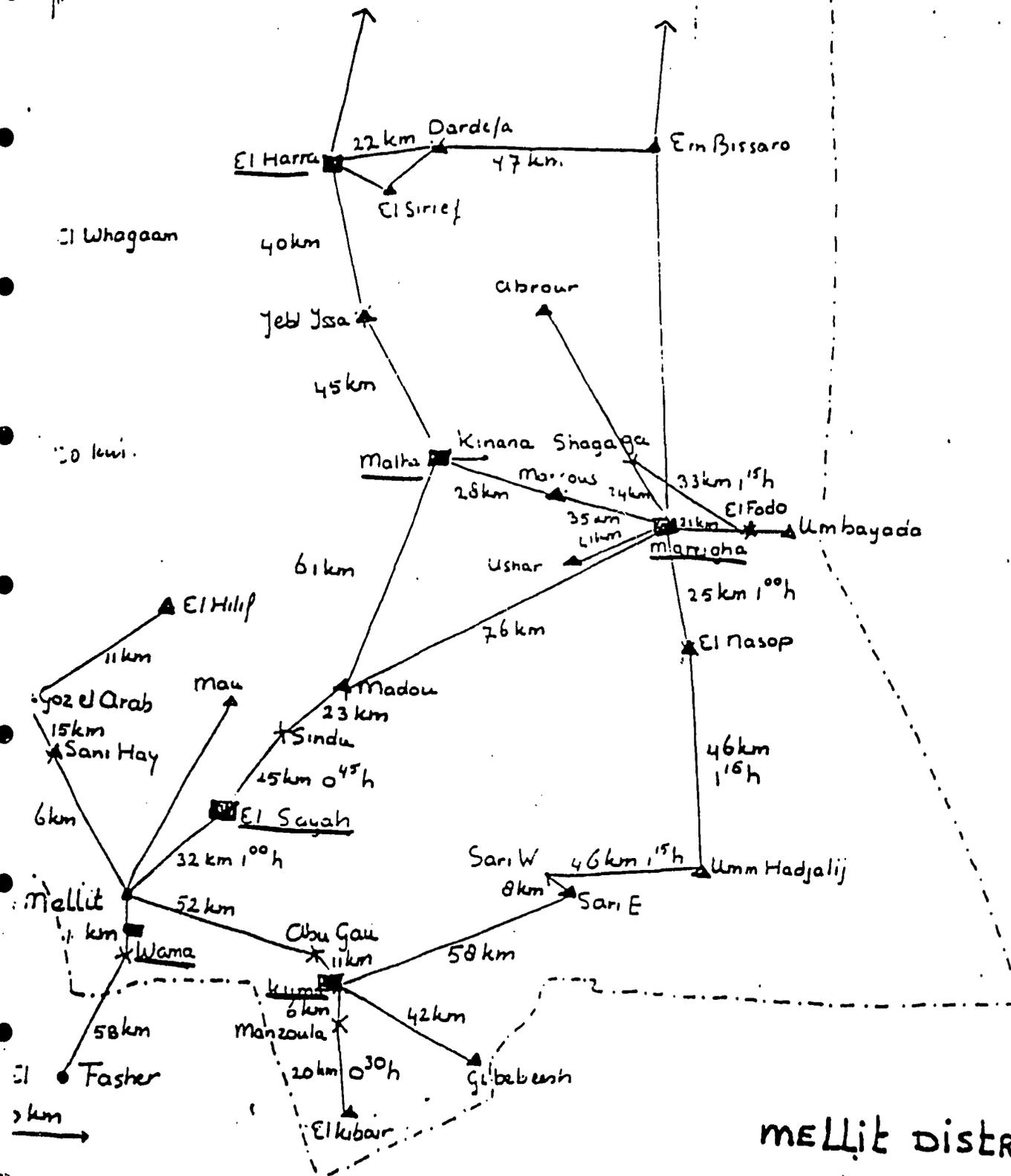
The RHSP was initiated in 1986 at Darfur, however, the Project really was not established in full force until May 1989. From April to September 1989, there was no permanent regional Director General for Medical Services. This further inhibited the implementation of RHSP's plans.

The RHSP activities in Darfur consist of the following program components:

- o Management
- o Training and Health Education
- o Child Survival Activities
  - \* Expanded Program of Immunization (EPI)
  - \* Control of Diarrhoeal Disease (CDD)
  - \* Nutrition and Growth Monitoring
- o Maternal Child Health and Family Planning (MCH/FP)
- o Sanitation

The RHSP activities are planned every six months. A work plan is prepared by a policy making body, the RPIU, whose membership is composed of all the heads of health sectors in the regional MOH and the MSCI technical advisors. The MSCI team is composed of a Regional Coordinator and Child Survival Advisor. Their main objective is to help strengthen the MOH capability to plan, implement, and establish sustainability of PHC activities with concentration in two pilot Health Areas in North Darfur province.

■ dispensary  
 ▲ PHC unit



Mellit District



## A. Management

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In order to better utilize the region's limited amount of resources and personnel, the RHSP has focused on the strengthening of the present regional MOH infrastructure and institution building as a priority. This necessitates the creation and support of a planning committee which will assume oversight responsibility for community participation, and supervision of the PHC program through the mechanism of regional planning units. Health Area Councils (PHC committees) should be established in selected pilot areas. These councils should be assisted to assume responsibility for planning, budgeting, and supervision of PHC activities within their communities. Another objective of the creation of PHC Councils is to bolster the MOH's capability to provide PHC services, particularly at the district and health area level, in a more comprehensive integrated manner.

### 1. Proposed Work Plan Activities:

An initial assessment of the managerial needs was done when MSCI took over in December 1988. This plan was then modified in the middle of the Project to reflect more modest, therefore more feasible, program activities. These activities are outlined as follows:

- o Assist with the development and functioning of a Regional Project Implementation Unit (RPIU). The RPIU to identify pilot Health Areas where RHSP activities will be concentrated by the end of the project,
- o Assist the RPIU to prepare a semi-annual regional report and budget, and accompanying program narrative, and forward them to MOH Khartoum,
- o Seek to increase community participation in PHC through Health Area Councils,
- o In collaboration with other donor agencies, help the MOH to strengthen suitable vehicle repair and logistics facilities,
- o In collaboration with the MOH and District Council officials, develop and implement activities to improve the availability of drugs through the creation of community oriented pharmacies and their branch outlets,
- o In collaboration with the RPIU, PHC committees, and village Health Committees, explore cost effective local transportation systems for village level PHC workers and project supplies (e.g., vaccines, contraceptives, ORS, and essential drugs), and
- o Institute an HIS unit develop forms for electronic data processing and appropriate equipment, software, and train staff to collect, process and report data.

Population estimates for Northern Darfur (1983 population census and adjusted figures for 1988).

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District	1983	1988
El Fasher	283,855	319,252
Umkeddada	117,725	132,410
Mellit	102,906	115,742
Kuttum	153,141	172,243
Kebkabiya	162,972	183,300
El Geneina	507,348	570,633
<b>T O T A L</b>	<b>1,327,947</b>	<b>1,493,589</b>

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## 2. Activities Accomplished

Even with the modification of the work plan, the Darfur RHSP could not fulfill all its proposed activities in the managerial sector. This is significant because it effected all other parts of the RHSP. There are several reasons for this problem, mainly the late start of actual implementation due to contractual delays and the difficulty in recruiting staff to work in the area. The vastness of the region, combined with inadequate transportation and communications, caused the cancellation of many meetings and supervisory trips. All of these were accentuated by inconsistent commitment from the MOH to alter the present managerial style. Some advances were achieved in spite of these constraints.

Although the RPIU was formed in 1988, it did not hold regular meetings for eight months. The MSCI team activated the RPIU in May 1989 and held 12 meetings between May and December 1989, besides three other emergency meetings. These meetings served to propose, then approve, new PHC activities and evaluate ongoing projects. Another important function was the drafting of regional reports on a semi-annual basis with accompanying narratives, work plans, and budgets.

The RPIU first discussed and then identified two pilot Health Areas, Mellit and Kuttum Districts. The selection criteria were: location of site; demonstrated need; political support; community interest; and a stable security situation. Mellit and Kuttum were selected because both are in the arid north within a four hour drive from El Fasher, the regional capital, and suffer from a dearth of health services. In addition, both experience drought and chronic food shortages. It was originally intended that one pilot Health Area should be from South Darfur, but security factors and fear of overextending project resources and transportation capabilities, made this idea nonviable.

After the pilot Health Areas were selected, the PHC Committees in the areas were established (see map next page). The committees were formed through community meetings in each of the districts. The PHC Council members included the District Administrative Officer and prominent community leaders, in addition to health personnel. At the same community meetings, Health Area work plans were developed. Once these committees and work plans were agreed upon, then RPIU supervisory trips were conducted at least once every month.

An essential component of the management sector was the development of the community pharmacy system which was inaugurated in the Kordofan Region. Large community pharmacies were established in El Fasher, under the previous contractor, and Nyala during MSCI's tenure. These were built on the premise that the public required greater access to essential drugs through cheaper and more dependable supplies. These pharmacies would be based on a community cost recovery and participation system where the modest price mark up ( see Kordofan Management section) would be used to sustain, then expand, the community pharmacies. The drug supply was reliable since most of it was from the Central Medical Stores and UNICEF. These assumptions proved to be correct as the public started utilizing the pharmacies at a high rate after their inception. The PHC

Councils in both Mellit and Kuttum perceived community pharmacies as a basic need and thus had more direct community involvement in the management of the new branch outlets. The policy committees for these pharmacies have been selected mostly from the community at large.

The RPIU, with the PHC councils, also had agreed to develop a new transport system using horses or donkeys with carts. These carts will serve in transporting essential drugs, enable health personnel to make supervisory visits and assist in the disposal of the community's garbage. Animals with carts are a more practical and sustainable alternative to the dependency on motor vehicles due to continued fuel and spare parts problems. They are also much cheaper and more cost effective.

A PHC management system cannot function without adequate statistics and data collection. An HIS unit with a micro-computer system with accompanying software was installed in El Fasher. This included a desk-top and two lap-top computers. The regional statistician underwent a one month computer training course in Khartoum. The training enabled him to train his staff besides improving his own skills. HIS training of trainers took place in El Fasher, Mellit and Kuttum to stress the importance of proper data collection. During this time, a new form for an ante-natal care and Tetanus Toxoid card were developed with assistance from MSCI team members. Since the MOH already possesses several statistical forms, they concentrated on developing forms not already in use.

### 3. Constraints:

Although considerable progress had been made in a short period to start and move the program forward, much more could have been done if some of the constraints were addressed. As mentioned in the chapter on Kordofan, the failure to fill vacant positions by the MOH sorely compromised the efficiency of the RHSP. The topless hierarchy without counterparts precipitated failure to implement activities even when mid-level personnel were competent and motivated to act. The present system neither encourages, nor tolerates, unauthorized initiative; authorization only comes from the top.

There was not sufficient supervision and follow-up directly related to the void in leadership. Although lack of transport and fuel shortages added to this problem, the MOH did not have proper direction to be flexible to use precious resources judiciously. Both of these problems may have been lessened if the community had been allowed to be more involved in the maintenance of the PHC system.

The Darfur region, and North Darfur Province in particular, have recently been plagued by insecurity caused by armed bandits and tribal disputes. These groups have disrupted services in the province with the conflicts sometimes spilling over into the chosen pilot Health Areas. This has made movement to, and within, the districts difficult. It was a situation where the RPIU and the MSCI team were unable to play any role in reversing the state of affairs.

Health Facilities in the 5 Districts of Northern Darfur by District and Rural Council.

District (Rural Council)	Hospital	Dispensary		PHC No	Unit	
		No	No Funct.		No	No Funct.
El Fasher (urban)	2	(5)	(5)	-	-	-
El Fasher R.C.	-	5	15	15	15	15
Korma R.C.	-	1	1	4	3	3
Tawilla R.C.	-	3	3	16	13	13
<b>Subtotal</b>	<b>1</b>	<b>11</b>	<b>11</b>	<b>44</b>	<b>38</b>	<b>38</b>
Kuttum R.C.	1	5+(1)	4+(1)	17	14	14
Umm Borro R.C.	-	2	2	6	4	4
Karnoi R.C.	-	2	2	6	4	4
Rohal R.C.(Nomad)	-	-	-	9	3	3
<b>Subtotal</b>	<b>1</b>	<b>9</b>	<b>8</b>	<b>38</b>	<b>25</b>	<b>25</b>
Mellit Rural Council	1	3	3	4	4	4
Kuma Rural Council	-	1	1	6	4	4
Malha Rural Council	-	3	2	6	5	5
Mareigha R. Council	-	1	1	7	5	5
<b>Subtotal</b>	<b>1</b>	<b>8</b>	<b>7</b>	<b>23</b>	<b>18</b>	<b>18</b>
Kebkabiya R.Council	1	1	0	22	17	17
Seref Umra. R. C.	-	1	1	4	4	4
Birka Seira R. C.	-	1	1	6	6	6
El Seref R. Council	-	1	1	5	5	5
<b>Subtotal</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>37</b>	<b>32</b>	<b>32</b>
Um Keddada R.Council	1	4	4	16	14	14
El Lait R. Council	1	5	5	15	14	14
<b>Subtotal</b>	<b>2</b>	<b>9</b>	<b>9</b>	<b>31</b>	<b>28</b>	<b>28</b>
<b>TOTAL</b>	<b>6</b>	<b>42</b>	<b>39</b>	<b>173</b>	<b>141</b>	<b>141</b>

Note: The figures in brackets represent health centers.

Vehicles do not last long due to the lack of proper roads compounded by the rough desert terrain. The vehicles, therefore, require constant maintenance. There are no vehicle maintenance facilities, however, as well as few spare parts. MOH members of RPIU insisted on the MOH establishing a separate RHSP facility in El Fasher, and rejected buying into a TASC/MTD facility in Nyala. As a result, the regional MOH is left without a facility in either location.

#### 4. Recommendations:

The project has been hindered by an over-reliance on the leadership of the MOH regional Director General. This can be remedied in part by including representatives from PHC Committees in the pilot Health Areas and more community members on the RPIU.

Technical advisors should be encouraged to initiate activities through rural and PHC councils directly at the same time as the RPIU. This gives the community, through their local organization, a chance to participate in decision-making about their health. It could influence the MOH at the district or regional level to respond favorably to rural community demands.

Community pharmacies should sever managerial ties with the MOH, except in the role as technical advisors. This allows the pharmacies autonomy because the community will then be responsible for all inventory and financial records.

#### B. Training

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Training is crucial for the RHSP in Darfur because it is perceived as a way to promote and maintain an effective PHC system. The training should focus mostly on trainers in order to maximize the time and resources of the technical advisors. The newly trained cadres then would have the multiplying effect of training others. Furthermore, the program can then be sustained since the MOH will be better qualified to conduct its own training after the contractor's departure.

RHSP should provide support to expand and develop formal and experiential training programs for PHC personnel and related services. Training of trainers at the different health training institutions should be improved. This training should stress an integrated approach towards the delivery of health services. Skills of service providers should be improved as well. School teachers and other community workers need to obtain more PHC and health education knowledge and skills. Finally, health education should result in increased public awareness and practice of beneficial health behaviors among the communities in the two pilot Health Areas and El Fasher District.

1. Proposed Work Plan Activities:

The objectives considered necessary for raising the standards and effectiveness of training by RHSP are:

- o Establishment of a regional PHC training center,
- o Training of trainers in different health training institutions in the region,
- o The conduct of Health Area Management (HAM) Training on the integrated approach to PHC service for the pilot Health Areas and other selected areas,
- o Training of senior and mid-level MOH staff from the region in PHC Management at Gezira University,
- o Training of school teachers from primary, intermediate and secondary schools in health education and PHC concepts in the pilot Health Areas,
- o The Conduct of mobile health education sessions in the rural areas using audio-visual materials and rallies,
- o Broadcasting health information messages on Radio Nyala in local languages, and
- o Production of a quarterly newsletter.

2. Activities Accomplished:

- o There were training of trainers sessions held for traditional birth attendants (TBAs), HIS, growth monitoring, and integrated nutrition. All training was prepared by senior health personnel with input from MSCI team members. Because much self-reliance was encouraged in curriculum design, budgeting and actual training, these courses took longer to organize than expected. The trainers had several false starts since few health workers had previously designed or carried out such projects without substantial aid from outside sources. Clearly, a "learning" period was required if the regional MOH hoped to conduct their own training in the future. This training was for MAs, VMWs, and Sanitary Overseers, Statisticians, and Nutrition Educators.
- o Health Area Management Training for key personnel in the pilot Health Areas was conducted by Gezira University trainers in February 1990. This program is jointly funded by MSF-Holland and MSF-Belgium who will continue financial support although their PHC projects in Darfur were

suspended for six months as of January 1990. The training will cover how to carry out an integrated approach to PHC. Those who will attend the courses are teams consisting of District Medical Officers, Senior Medical Assistants, Senior Health Visitors, and EPI Officers.

The RHSP funded two-week courses in ORT and health education and for mid-level personnel. These included two separate groups of trainees: 40 HVs, MAs, and other health personnel in El Fasher, and Mellit; and 32 MAs, HVs, CHWs, and Village Midwives in Kuttum District. This training served as an initial introduction to improving the education techniques of the health workers who have the opportunity to encourage health promotion every day in their dealings with patients and the community.

Health workers were not the sole target of health education training. 143 teachers received ORT, health education, and first aid training conducted at El Fasher. Often these teachers worked in areas with no dispensaries or health centers. Some teachers decided to start ORT Demonstration Corners on their own in their communities, as well as health education campaigns after receiving training. The same idea was used in the training of 18 non-literate El Fasher Hospital workers since they, in many cases, have more personal contact and peer influence with patients than official MOH health care providers.

Health education campaigns of four hours each using mass media, role play and other teaching techniques were done for the community in Mellit, El Fasher, El Laiet, and Um Keddada by a mobile health education team. These campaigns often were conducted sporadically due to the MOH shortages of fuel, transportation, and time.

An effort was also made to reach health workers in remote areas through publishing a quarterly news letter, "Road to Good Health", by MOH in collaboration with MSF-Holland and supported by the RHSP. This newsletter included articles about the main health problems encountered in the region, statistics, health education materials as well as answers to questions from local CHWs. The contributors were local health workers, senior and mid-level medical personnel, NGO and contractor team members in the area.

Finally, health education materials in Arabic and materials from other countries were obtained. These were distributed to those involved in training. It was hoped that these would stimulate the development of more appropriate health education materials, or adaptation of those used in other places.

### 3. Constraints:

The biggest obstacle to training was the absence of a health education and training unit in Darfur. As a result, there was no one appointed to serve as a training coordinator. Nevertheless, through the efforts of one dynamic individual, the training coordinator for the CDD program, health education was done at a rapid rate.

One good individual can start to build a system, but without proper direction he was unable to pass on his enthusiasm and energy to others. Since there was no one directing overall training, no one took the responsibility to take training out of the regional capital to rural areas. Many times the CDD training coordinator was willing and planned training for the rural areas, but failed to receive authorization, or no fuel or vehicle was made available. Fortunately, the RHSP was able to aid him some of these times.

As a result of the lack of a training unit, there was also a scarcity of trained health educators. The usual scenario was to give an already existing health worker the task of education without any instruction on how to communicate this information. Due to the lack of concentration on teaching techniques, the planners tended to rely on expensive mass media equipment rather than simple and innovative teaching aids made from local materials.

A critical blow to the development of improved health education/training aids was the suspension of US dollar funds. The expatriate members could have had a good impact by elaborating on the training materials provided, and ordered others from overseas, when relevant. Another financial problem was the delay in the flow of funds for the HAM and PHC management courses, making the dates for the courses too late for proper observation by the concerned team members.

Because of the security and fuel problems, little time was spent in South Darfur. In the final six-month plan, though, funds were allotted to the health education component for the EPI program there.

#### 4. Recommendations:

A training unit should be established. MSF-Holland had proposed to the regional MOH that they would build a new CHW School which could also serve as a training center for all health cadres. This caused the MOH to wait until this structure was completed, rather than taking action to make a training unit utilizing already existing facilities. Unexpectedly, MSF-Holland suspended operations, thus there still is no training unit. A training unit, however, with or without a new center, will enable training and health education to be done in a more organized, focused manner.

Health workers should have a seminar or other special training in communication skills and how to use and design simple low cost teaching aids.

More emphasis should be given to teachers and other community motivators to conduct health education. They usually have better access to the community at large. They also often prove to be better communicators than health personnel.

Health education/training should be brought more directly to the public to encourage more community participation. Almost all training is conducted for health workers or teachers with the hope they will pass on the knowledge. A parallel attempt should be made through non-formal means to mothers and functional literacy classes.

Children and older students should be motivated to design and build low cost appropriate teaching aids.

Education needs to be integrated in all PHC activities. Therefore, EPI and other Child Survival activities must have a mandatory education component to be performed at health centers or village souks.

## C. Child Survival Programs

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### \* Expanded Program of Immunization (EPI)

EPI can make a dramatic impact on reducing childhood mortality both in preventing the six childhood diseases and protect the child from the effects of diarrhea and malnutrition. The RHSP is committed to increasing the quantity and quality of EPI services, particularly in the pilot Health Areas. This should be done by increasing the immunization coverage rates for six vaccine preventable diseases for children, and immunization of women of childbearing age (15-45 years) with Tetanus Toxoid in North Darfur, especially in the two pilot Health Areas. EPI should also be encouraged to integrate its service with other Child Survival programs.

#### 1. Proposed Work Plan Activities:

It was decided RHSP would only serve as a supplemental funding source to fill in gaps of the existing EPI services since most of EPI's base operation costs are covered by UNICEF and other donors. Areas for concentration by the RHSP are:

- o Support for the EPI acceleration program in the pilot areas and some selected areas in the transport of vaccine, supply of fuel, and supplements per diem for outreach mobile teams in pilot Health Areas,
- o Support for the establishment of fixed immunization sites in the pilot Health Areas,
- o Training of PHC personnel in immunization services,
- o Provision of technical assistance and support for EPI activities as integrated PHC services,
- o Increase of the awareness of communities in the pilot areas about the importance of EPI, and

#### 2. Activities Accomplished:

- o The EPI acceleration program was re-activated in the two pilot Health Areas and El Fasher District. At the same time, EPI started integrating its service with growth monitoring in the El Fasher District. This has resulted in an increase in EPI coverage rates in the pilot areas as follows:

Mellit	December 1988		November 1989	
	DPT 3	11%	DPT 3	28%
	Measles	10%	Measles	20%
Kuttum	DPT 3	3%	DPT 3	4%
	BCG	13%	BCG	29%
	Measles	2%	Measles	5%

- Tetanus toxoid vaccination of women of child bearing age has been initiated in the pilot Health Areas and El Fasher. In addition to health centers, female students at the intermediate and secondary schools have been immunized so they will be protected before they get married.

### 3. Constraints:

EPI, more than any other department in the regional MOH, suffered from lack of supervision and monitoring of mobile teams. In addition, the neglect of crucial equipment such as generators, refrigerators, freezers and vehicles also caused frequent work stoppages. Concerted efforts were not made to develop proper cold chain facilities or a system that could be sustained in the rural areas. Because of North Darfur's continued reliance on mobile teams, rather than fixed sites, fuel became a critical factor which caused the rural areas to be underserved or completely neglected.

The recalcitrance on the part of the regional EPI operations office to move to fixed sites also was exhibited in a lack of cooperation in integrating with other Child Survival activities. This was manifested by EPI vehicles refusing to carry other health personnel and equipment to the pilot Health Areas. Despite plans from the regional MOH and Nutrition Department, EPI informed concerned parties that they could not combine their efforts with a prophylactic vitamin A distribution program.

In contrast to the situation in North Darfur, the South Darfur EPI operations officer usually made every effort to improve his service's success rate. For example, if a solar refrigerator broke down then a generator powered one was used; if that failed, then a kerosene refrigerator was used until repairs were made. Finally, if all else failed, then they went to cold boxes through a shanta system. There were also programs of health education for EPI conducted in South Darfur, something almost never done in the North.

### 4. Recommendations:

The national EPI office and UNICEF should seriously investigate the EPI operations in North Darfur. This does not mean a one day site visit to El Fasher, but a few weeks to a month of actual observing and then taking corrective actions to improve their work. To an expert, flaws and solutions will be apparent even when people will be trying to show their best side.

The mobile team approach should be deemphasized, except when necessary, such as in epidemics or for mass campaigns. The move to fixed sites should be implemented as soon as possible.

EPI efforts should be combined with other Child Survival activities such as growth monitoring and vitamin A capsule distribution. Now that an antenatal card has been developed, Tetanus Toxoid can be recorded and combined with visits to the health centers. Fixed sites will greatly enhance more integration of services.

EPI in the future should take advantage of market days and other gatherings to institute mass vaccination campaigns.

More groundwork should be done with community leaders before the EPI comes to a village to insure the greatest amount of coverage. It would serve well to have health education talks with rural council members and village sheiks (chiefs) so as to encourage a greater turn out and access to immunization.

A shanta cold box system, much like the one in Kordofan, should be explored and, if feasible, instituted in Darfur.

#### \* Control Of Diarrheal Disease (CDD)

Diarrhoeal Disease is a major cause of morbidity and mortality in Sudan, as in other developing countries. Yet both the disease and its effect can be prevented through the practice of better hygiene and sanitation and the simple ameliorative technology of oral rehydration therapy (ORT). The RHSP is committed to the widespread use of ORT in both villages and at health facilities. The Control of Diarrheal Disease (CDD) should become institutionalized as an official part of PHC services. This will, in turn, increase the awareness of medical staff and PHC personnel on the management of diarrhea cases using oral rehydration salts (ORS).

##### 1. Proposed Work Plan Activities:

The CDD unit was established at the onset of the RHSP activities in Darfur. Thus the RHSP has been instrumental in setting up the CDD program and supported all the activities in the Phase I of CDD. These included the following:

- o Training of all PHCWs in pilot Health Areas in the use of ORT,
- o Developing skills of PHC workers on methods and techniques of training mothers in ORT,
- o The conduct of refresher training courses on ORT integrated with other PHC components, e.g., EPI, MCH/FP and nutrition, and
- o Development of ORT demonstration corners in hospitals and health centers. These are model units to encourage mothers to participate in the program under guidance of carefully trained health professionals.

##### 2. Activities Accomplished:

The RHSP provided both funding, and whenever possible, technical assistance on ORT training. This has resulted in the training of trainers for 18 trainers from North and South Darfur. 372 PHC workers from the whole region, including the pilot Health Areas Mellit and Kuttum, and 154 school teachers were trained in ORT and health education.

The curricula were adapted from the national CDD curriculum and included aspects of identification, treatment, and prevention. Other areas affected by diarrheal disease such as nutrition, growth monitoring, breast feeding, immunizable diseases, sanitation, and social habits are discussed in these two-week courses.

Direct training of mothers has been inaugurated through an integrated MCH clinic in Mellit and is planned for the Kuttum District. The most important education tool for ORT is the creation of ORT demonstration corners in the six health centers in El Fasher, the Mellit and Kuttum health centers, and in the El Geneina and Nyala hospitals. These ORT corners are a place where children are rehydrated and observed by competent health personnel. During the rehydration phase, the mothers are taught how to prepare ORS packets and other recommended home fluids for ORT. They are also given instruction about hygiene, food preparation, breast feeding, weaning foods, and immunization. Some enterprising centers even provide family planning and child spacing information.

A paper was prepared by an MSCI team member that gave simple technical advice using local appropriate methods concerning common ORT questions. This included information about ORS, breast feeding, traditional medicine preparations as recommended home fluids, vomiting and ORS, feeding during and after episodes of diarrhoea, and the belief concerning teething causes diarrhea. This was distributed to health professionals in El Fasher and is also being considered by the national CDD program as a prototype instruction guide.

### 3. Constraints:

CDD has been active and successful in establishing ORT corners in El Fasher area and in conducting training there. There has not, however, been very much follow-up and supervision outside El Fasher, leading to inadequate supplies and storage facilities for ORS packets in the rural areas. This also raises the important question of ORS supply. It can be safely assumed there are only enough ORS packets to supply about 10% of the current demand.

Another problem with CDD is its vertical nature. It has not integrated its operations with other PHC activities in the region.

### 4. Recommendations:

- o While continuing its efforts in El Fasher, CDD needs to concentrate more on the rural areas than it has in the past.
- o CDD should now start moving into its Phase II activities, with greater emphasis on communication strategies which directly involve mothers and children.

- o **ORT corners should be expanded to be models of integrated Child Survival services. A good way of doing this is to make ORT corners also into nutrition rehabilitation centers where a mother could be trained in all facets of Child Survival skills, especially ORT, weaning foods, importance of growth monitoring, and immunization.**
- o **Establish more ORT corners in rural areas.**
- o **Integrate CDD activities with VIP latrine construction and parasite control.**
- o **Forge a strong link with the new regional nutrition unit. Both programs' success hinge on the involvement of the rural mothers.**

**\* Nutrition**

The Darfur region is constantly affected by drought and is prone to food shortages, causing a higher rate of malnutrition and vitamin deficiencies than other parts of Sudan. Unfortunately, these conditions are also made worse by poor feeding habits and food preparation techniques, thus leading children to increased diarrheal disease or unbalanced diets contributing to further malnutrition. Nutrition education and monitoring is essential for Darfur. All current nutrition and growth monitoring services should be expanded. The number of PHC workers trained in nutrition and growth monitoring should be increased. Education should be given to improve the feeding and weaning practices of mothers for their children. A campaign for vitamin A deficiency prevention should be implemented in the pilot Health Areas and eventually all of North Darfur since past surveys have indicated there is a high prevalence, particularly in drought years.

**1. Proposed Work Plan Activities:**

The basic tasks needed for advancement of nutrition in the region are the following:

- o **Develop supervisory tools for growth monitoring site visits,**
- o **Provide on-the-job training for Mellit and Kuttum PHC workers in growth monitoring,**
- o **Initiate growth monitoring activities in one or more additional areas,**
- o **Initiate education of mothers in child feeding and weaning practices in Mellit, Kuttum and El Fasher, and**
- o **Implement vitamin A capsule distribution for young children and lactating mothers, to be integrated with EPI, growth monitoring and nutrition education.**

## 2. Activities Accomplished:

One reason there has not been much interest in nutrition-related matters is that until October 1989, there was no regional nutrition unit. Up to this point, the only nutrition activity that was systematically performed was emergency food distribution by the League of Red Crescent/Red Cross, Save the Children-UK, and OXFAM during the last drought. OXFAM continues to do nutrition surveillance work under the auspices of the MOH. In actuality, however, they reported to, and collaborated with, the Darfur Government Agricultural Planning Unit. Based on OXFAM's experience they recommended another nutritionist be hired for the regional MOH. MSCI/RHSP agreed in principle to fund this position until the MOH could create a permanent slot. This position is still pending approval from the national level because of the current government hiring freeze.

A Nutrition Unit has been established through the stimulus of the RHSP. This unit will be concerned with reviewing nutrition curricula in primary and secondary schools, nutrition surveillance and early warning systems, integrated growth monitoring, operational research, treatment and rehabilitation of malnourished children, nutrition education, training and supervision. The idea for the unit sprang out of a temporary nutrition advisory committee consisting of contractor team members, the Senior Regional Nutritionist, OXFAM Nutrition Advisor and a representative of the nutrition education department in the Ministry of Education.

Once the Nutrition Unit was formed, a growth monitoring training session for 20 HVs was held over a six-day period in El Fasher. This training included a nutrition survey of the El Fasher health centers. Growth monitoring has now been instituted in the six health centers in El Fasher and in the Mellit MCH/FP clinic.

A training of trainers in integrated nutrition and Child Survival activities, including vitamin A capsules distribution, was conducted for 20 participants including teachers, HVs, nutrition educators, and SMAs from Kuttum, Mellit, Kabkabiya, and Um Kaddada Districts. As a practical exercise vitamin A capsule distribution programs were held for young children and post delivery lactating women at the six El Fasher health centers. This will be followed up with a mass prophylactic vitamin A capsule distribution program in Mellit, Kuttum and Um Kaddada Districts.

Initial preparation for a weaning food booklet for mothers' nutrition education is underway. This booklet will be based on both traditional Sudanese recipes and some from other African countries. Work has also been done on developing a chart of common garden and wild edible plants with significant vitamin A content. Both of these projects have been undertaken in collaboration with the MSCI team members and the senior nutritionist.

### 3. Constraints:

It is easy to understand that without any Nutrition Unit, there has not been sufficient interest or commitment to carry out even rudimentary nutrition related activities. Now that a unit has been established, the most critical problem will be shortage of qualified staff to help the senior nutritionist. She has strong motivation and a good technical grasp of the subject, as well as a keen understanding of the social factors concerning nutrition. Yet without any help, it will be difficult for her to act effectively. The shortage of nutrition related workers is extensive in the rural areas where they are needed the most.

The lack of interest in nutrition has forced the hospitals to go without sufficient supplies of food for malnourished children. It has also caused supplies of vitamin A capsules required for the rural areas to be delayed several months. When capsules finally arrived in El Fasher, fully 40% were already past the recommended expiration date.

### 4. Recommendations:

Persuade donors to temporarily fund nutrition positions until the government can hire more nutritionists permanently. Lobby for the necessary supplies of milk, oil and sugar and funds for local food purchases to rehabilitate malnourished children. This is not a frivolous request since food is specific treatment for malnutrition which is rife in Darfur. Without the ability to treat malnutrition effectively, all nutrition education loses credibility. Mothers of children who recovered from malnutrition often are the best teachers.

- o Continue to carry out semi-annual vitamin A capsule distribution programs and promote nutrition education through demonstration home gardens at as many health centers and schools as possible.
- o Coordinate MOH services more effectively with the MOE's nutrition education department. MOE growth monitoring should be extended to all children in their working sites and the results given to the MOH. In turn, the MOH should help with the growth monitoring, and nutrition/health education training.
- o EPI must participate and aid in growth monitoring to better integrate Child Survival services.
- o More nutrition education should be done for mothers focusing on weaning food preparation, food preservation, and the choice of foods with the maximum nutrition and cost benefit. These should have accompanying demonstrations and simple low cost teaching aids.

- o Extend ORT corners to accommodate nutrition rehabilitation as well. This would be a natural step since some ORT corners are providing simple weaning food, hygiene and breast feeding advice.

#### **D. Maternal and Child Health/Family Planning (MCH/FP)**

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Infant mortality in Darfur is perhaps higher than the national average of 132/1000. Darfur's ratio of trained midwives is only half of what it is in other provinces thus leading to the suspected high rates of maternal mortality and neonatal tetanus. Over population is a problem since Darfur's fragile ecosystem seems to have too few resources to support its present inhabitants, as evidenced by recent famines. All of this requires the rapid introduction of comprehensive family planning activities into the RHSP pilot health areas and health centers in El Fasher. These activities will help with increased child spacing and reduce unwanted pregnancies. To do this, a qualified and knowledgeable cadre of health professionals should be created to provide these family planning services in the areas of the RHSP's operation. A program should concurrently be started to support and upgrade pregnancy management and delivery skills and increase training opportunities of TBAs. Village midwife performance should also be improved under direct supervision of a new cadre of Assistant Health Visitors (AHVS).

##### **1. Proposed Work Plan Activities:**

The tasks assumed by the RHSP to increase MCH/FP status were:

- o Development of a comprehensive family planning strategy for the region within the context of MCH/FP,
- o Strengthening of family planning services in the two pilot Health Areas and El Fasher,
- o Training doctors and mid-level health workers on the concepts of Child Survival and methods of family planning,
- o Improvement of the content of midwifery skills of TBAs in the pilot Health Areas, and
- o Training of midwives in training and supervision.

## 2. Activities Accomplished:

- o It was quickly realized that MCH/FP has been a long neglected part of the regional MOH's plans. To address this, an MCH/FP technical advisory committee was formed from members of RHSP/MSCI, MSF-Holland and the MOH Midwifery School. It was thought that training would be the best point of entry for MCH/FP in Darfur.
- o Most of the emphasis was laid on TBA training. Until MSCI arrived, the regional MOH had not established training for TBAs although some NGOs had done it on their own in South Darfur and in El Geneina. The first tasks were to develop a TBA training curriculum and have a survey to identify TBAs; their knowledge, attitudes and practices. The latter was done in order to have a better idea of what subjects should be stressed during the subsequent training.
- o The curriculum took time to prepare. TBA courses from other places were evaluated and much discussion centered on the course length. Initially, a course similar to the Kordofan training of three months was desired. It was believed that this would not be financially sustainable once the RHSP withdrew support. Some committee members favored a two-week course, others a four-week one. It was finally decided to start a three-week course, with the topics covered corresponding to the Kordofan model.
- o Once the survey in Mellit was completed, and the curriculum approved, a training of trainers for TBA skills was held for six health visitors who would be leaders. Eleven (11) TBAs in Mellit were identified and training started in Mellit town. The course had a good exchange and interest from the TBAs and HVs. It was considered a success, although participants thought a four-week course would be better to allow a more practical "hands on" experience. A follow-on course for 20 TBAs then began in Kuttum.
- o Twenty-eight (28) Health Visitors in North Darfur (including the pilot Health Areas) have received training in family planning services. This family planning education is now being conducted in the health centers in El Fasher, Mellit, and Kuttum during antenatal care of pregnant mothers.
- o The RHSP has also continually provided financial support to the El Fasher Midwifery School. At the midwifery school, 34 village midwives from North Darfur had been trained in integrated PHC activities.

### 3. Constraints:

There is no full time regional MOH MCH/FP coordinator. This created a severe vacuum as far as planning and supervision were concerned. It resulted in the beginning of TBA training and other midwife training to be delayed several months. With no coordinator, there seemed to be no motivation on the part of the regional MOH to carry out family planning activities. Cultural factors and social pressures could also have been involved. As a result, family planning cannot be successfully done without supplies of contraceptives. The women's interest gained from child spacing/family planning education is lost if there are no methods to back up the motivation. A final problem was again the suspension of US dollar funds which caused scheduled MCH consultants from Egypt to cancel their review of the current midwifery curriculum.

### 4. Recommendations:

- o Appoint a full time MCH/FP Coordinator to fill the slot in the regional MOH organizational chart.
- o Extend TBA training to additional rural areas and fix the course length to at least four weeks in order to provide adequate time for practical training.
- o Guarantee a reliable supply of contraceptives distributed both through the health centers and the community pharmacies.
- o Invest in family planning knowledge, attitude and practice surveys in order to gauge the present demand for child spacing and what areas to focus on through education.
- o The Assistant Health Visitors cadre should be established to provide more supervision to Village Midwives.
- o Model MCH/FP units, proposed for existing health centers, should be established to set the environment for integrated child survival activities.

## E. Sanitation

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Adequate sanitation facilities are essential for the prevention of diarrheal diseases, parasites and other water-washed or related diseases. The RHSP should promote village sanitation through appropriate low cost technology such as the Ventilated Improved Pit (VIP) latrine. Sustainability can be enhanced through the creation of a cadre of PHC personnel skilled in VIP construction. VIPs built should serve as demonstration models for other community members to build themselves. This process should be evaluated and duplicated if successful.

1. **Proposed Work Plan Activities:**
  - o Train PHC personnel in VIP latrines construction,
  - o Construct VIP latrines in identified villages in pilot Health Areas, and
  - o Print a VIP construction guide.
2. **Activities Accomplished:**
  - o 40 VIP latrines have been constructed in El Fasher, three in Mellit, and six in Kuttum Districts. An additional eight were completed in Nyala, South Darfur. All of these required at least 35% subsidization of the costs, of local materials, and all labor contributed by the community,
  - o 40 construction workers were trained in VIP construction, and
  - o 40 health workers, 20 each from North and South Darfur, were trained in VIP latrine construction.
3. **Constraints:**

VIP construction was affected by the rapid rise in the cost of construction materials in the local markets. This was also compounded by the repeated shortages of necessary construction materials. These were neither available on the local market, nor could they be hastily shipped from Khartoum. A VIP construction guide was never developed, thus depriving the workers of a useful reference.

Manipulation of the construction teams, by the owners of houses and the local authorities, has resulted in the construction of some more expensive Aqua-Seal latrines in Kuttum and Mellit with RHSP meeting all the construction costs. This caused the budget to be insufficient to construct some of the planned VIP latrines in these areas.

4. **Recommendations:**
  - o Darfur should use the new VIP construction guide developed in Kordofan which includes four types of latrine ranging in expense for construction using local materials.
  - o Donkey or horse cart waste deposal systems should be started and their effectiveness studied.
  - o Sanitation should have a safe clean water supply development component. This can be encouraged by fostering cooperation with government departments and NGOs concerned with water resources.

- o Train more community members in VIP construction so they can build their own, and not have to rely on government construction.

#### **4. LOGISTICS**

Prior to 1989, logistics activities were confined primarily to the Kordofan region. Under the previous contractor, the Logistics Advisor was stationed in El Obeid and made occasional trips to Darfur. Technical assistance at that time encompassed establishment of the Community Pharmacies, the shanta system, and the construction of the regional MOH vehicle maintenance facility. When the OAI tenure with the RHSP ended, it was anticipated by the Kordofan MOH officials that MSCI would follow the same working arrangement.

The current contractor, MSCI, discussed with the MOH and USAID/Sudan changing the duty post of the Logistics Advisor from El Obeid to Khartoum. All concurred that this change would improve technical assistance to both Kordofan and Darfur regions (a second logistical advisor for Darfur, mentioned in the Project Paper, was not included in the contract). The job description of the Logistics Advisor was changed to include MOH logistical support, technical assistance, and team support. This represented the priorities of supporting Kordofan and Darfur programmatically, as well as MSCI team members, in those field locations.

##### **A. MOH Logistics Support**

The contract stipulated that MSCI would procure and distribute up to \$250,000 of commodities. In addition, approximately \$127,000 of commodities, purchased by OAI, arrived and were distributed by MSCI. To implement this component, MSCI:

- o procured \$119,000 and LS 113,000 of commodities including computer equipment, vehicle spare parts, household furnishings, and office supplies;
- o cleared into Sudan and trans-shipped dollar-purchased commodities;
- o purchased locally available commodities and shipped them to the field sites, Kordofan and Darfur; and
- o established an inventory of all non-expendable property.

A total of \$247,000 of commodities, MSCI and OAI purchased, were handled in this manner.

##### **B. Technical Assistance**

To continue the work initiated by OAI in Kordofan, and expand it to Darfur, MSCI provided assistance in developing logistical systems within the framework of the MOH. This included:

- Assisting vertical programs (e.g., EPI, addressing specific logistical issues),
- Exploring, with other donors, establishment of vehicle repair facilities in the two regions, and
- Establishing computerized inventory systems.

#### 1. R/MOH Vehicle Repair Facilities

Under OAI auspices, a vehicle maintenance facility was initiated in El Obeid in 1986; UNICEF provided the spare parts and tools. RHSP counterpart funds paid for much of the construction. When MSCCI was contracted to support the program, a repair facility with a storeroom, fuel pumps, and underground storage tanks was in place. A management system, including trained personnel, tools, and spare parts, however, had not been established. MSCCI investigated the possibility of collaborating with the Dutch supported Truck Aid Service Center (TASC) on jointly supporting vehicle repair facilities in El Obeid and El Fasher.

TASC works on a counterpart basis with the Mechanical Transport Department (MTD). They have successfully established a mechanic training and repair facility in Khartoum. With encouragement from UNDP/ILO, TASC explored the possibility of establishing MTD training and repair facilities in Kordofan and Darfur. Originally scheduled to begin in September 1989, the timeline was repeatedly pushed back and, at the end of MSCCI's contract, donor interest in this activity appeared to have waned.

MSCCI attempted to interest the MOH regional directorates in Kordofan and Darfur in combining resources to establish one comprehensive facility that the RHSP, and other MOH vehicles, could access. USAID/Sudan expressed interest in this approach. The Kordofan RPIU demonstrated interest by earmarking LS 400,000 for the activity.

A stumbling block, though never resolved, was administrative control over the repair facility. TASC works with MTD on a counterpart basis to create MTD facilities. The MOH (and other Government ministries) actively resist dealing with MTD. The regional MOH directorates clearly wanted an MOH facility or, at a minimum, an MOH controlled facility. Despite MSCCI's best and extensive efforts, agreement on multi-donor funding of the repair facilities was not completed.

#### 2. EPI Cold Chain

MSCCI devoted considerable attention to enhancing logistics of the vertical project EPI, specifically, strengthening the cold chain. OAI brought in 18 solar powered refrigerators for Kordofan. MSCCI prompted EPI to install these units, which had been left in the original cartons, and assisted EPI technicians with the logistics of getting to field sites. By the end of the contract, EPI had installed 11 units in Kordofan. MSCCI made follow-up site visits and reviewed with operators their understanding of procedures and compliance with maintaining correct temperatures.

Another area of attention was maintenance of EPI generators. During one site visit in North Darfur it was noted that only four of 13 cold chain generators were operating. MSCI staff, jointly with CARE, conducted one generator maintenance training session for EPI staff in Kordofan. Early termination of the contract eclipsed plans for additional training sessions in Kordofan and Darfur.

### 3. Health Information System

As noted in Chapters 2 and 3, MSCI assisted in creating computer units in Kordofan and Darfur. These units also supported logistics activities.

Inventories of non-expendable property (NEP) were created and maintained at these facilities. In Darfur, a drug stock control system was developed for the regional MOH warehouse. This system has the potential to provide immediate information on supplies in stock, consumption rates, and drug expiration dates. Further staff training is required to bring this system on-line and would have been done if the contract had not ended early.

### C. Team Support

With three offices and a seven-person expatriate team, (five located outside the capital), support for team members was a significant task. This included providing household equipment, personal mail, and commissary purchases. In every instance, support to Darfur was more difficult than Kordofan. USAID/Sudan provided housing for the two advisors in Khartoum. However, MSCI was responsible for housing for the five field personnel. Many household items (e.g., hot water heaters), had to be purchased in Khartoum and shipped to the field.

## 5. FINANCES

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The RHSP is supported by both dollars and Sudanese pounds. Dollars were used for expatriate salaries, international travel, short-term consultants, overseas training of Sudanese, and the purchase of commodities. Appendix C details dollars budgeted and expended by MSCI during their contract period. Appendix D details MSCI Trust Fund expenditures for the Project.

### A. Local Currency

#### 1. Counterpart

USAID generates Title I and Title II counterpart funds to support program activities of RHSP (Sudan is a near excess currency country). The counterpart is placed in the account of the Ministry of Finance and Economic Planning (MFEP). Individual projects submit budget requests to MFEP semiannually. Ongoing programs are required to present financial statements and narrative progress reports on the preceding six months. Unspent funds from the previous half year are deducted from the new request. The USAID and MSCI staff participated in these discussions and decision-making on forward funding.

The national MOH administers its own RHSP budget, forwards funds to the two regional programs, and monitors expenditures. Funds are spent under the direction of the Kordofan and Darfur Directors General, Medical Services and the RPIUs. Reports are sent back to the MOH and forwarded to the MFEP at the time of the semi-annual budget request.

Accounting for counterpart local currency has been weak throughout the life of RHSP. The MOH has not exerted vigorous oversight of regional RHSP expenditures. USAID, for its part, feels that responsibility for counterpart expenditures lies with the Government of Sudan. No systematic monitoring or routine auditing was conducted. The contractors, OAI and MSCI, were proscribed by USAID from monitoring counterpart expenditures. Senior officials of MOH were most satisfied with this arrangement and carefully guarded their prerogative to control and account for local currency without contractor oversight. Some informal consultation occurred, at the request of MOH, particularly when financial statements did not balance. This involved technical input, however, not judgmental review of types or levels of expenditure.

In the second half of 1989, MFEP approved the new RHSP budget, but withheld funding releases until the MOH, on behalf of RHSP, belatedly submitted complete financial statements for the previous six months. The MFEP also initiated an audit of the program, results of which were not made public by the end of the contract period. The MOH, furthermore, made only partial transfers of released funds to the two regions to prompt timely/or adequate submission of monthly statements. As noted in Chapters 2 and 3, the funding delay disrupted program implementation. These actions constituted the most vigorous financial monitoring ever implemented by the MFEP of the RHSP.

## 2. Trust Funds

USAID earmarked Trust Funds, under the control of the contractor, to support the program. These funds covered the local currency expenditures of expatriates including housing, in-country travel, and minimal program costs to augment RHSP program expenditures. This included periodic purchase of fuel when RHSP ran out, survey research, and incentive payments to MOH staff assigned to work with RHSP.

### B. Expenditures

#### 1. Trust Funds

The contract initially provided LS 3 million for MSCI. Of this amount, USAID retained LS 1 million to support the contract, primarily housing for two expatriates in Khartoum and lodging costs of short term consultants. MSCI presented a revised local currency budget, and in March 1989, USAID amended the contract to add an additional LS 1 million. These funds proved sufficient to meet contractor expenditures through February 28, 1990 (see Appendix D).

## 2. Dollars

MSCI considerably underspent the dollar portion of the contract. This is attributable to four main reasons.

Foremost was the early termination of the contract period. Field staff were originally scheduled to remain in Sudan until June of 1990, with a contract closing date of August. With the contract required to close at the end of February, this significantly reduced dollar expenditures.

Secondly, after the announcement that Section 513 restrictions were in effect, USAID placed a freeze on dollar expenditures, other than salaries. This lasted approximately two months, September-October, 1989. It was just at this time that MSCI planned to send some Sudanese for U.S. training. When the freeze was lifted, it was too late to enroll these MOH officials in fall training programs. A further stipulation was that all training had to be completed, and the candidates returned to Sudan, by the end of February. This precluded enrolling any candidates in training programs in the new year. Subsequently, no training, outside of Sudan, was accomplished under the contract.

Another impact of the freeze was the elimination of the use of U.S. consultants. MSCI and the MOH had identified short-term consultants to support the program. These plans were also cancelled and no short-term consultant costs were charged to the contract. A salutary effect of this restriction on expatriate consultants was that team members identified professionals within Sudan to provide short-term skilled technical assistance to the program, specifically, the family planning KAP survey and the maternal morbidity and mortality survey, both in Kordofan. Other activities, such as establishment of sentinel sites for health monitoring, were dropped from the program.

Thirdly, dollar expenditures were also less for full-time advisors than budgeted. This was the result of staff turnover reducing the person months of salary charged to the project. After the second Regional Coordinator in Darfur left, the program recruited a Sudanese physician for the position reducing dollar costs even further.

Finally, shortening the contract length also resulted in a small reduction in the expenditures for commodities. The team was unwilling to order commodities for the sake of spending the funds. An initial list of commodities that appeared to directly support the program was drawn up. When the 513 restrictions were announced, MSCI opted to fill only this list.

## C. Audit

The initial contractor, OAI, left no turnover notes on the project. Further, OAI removed all financial records to its offices in Washington. Early in the project, MSCI commissioned a management review and financial audit of contractor procedures and funds. The management review was most constructive in guiding MSCI to implement the program, within the regulations of USAID and the Government of Sudan.

The audit established a base-line for funds and NEP taken over by MSCI from OAI. In December 1989, a follow-up audit found that MSCI had implemented all significant management recommendations made and that the financial records were accurate and in balance. Copies of these reports were made available to USAID and MOH.

## 6. CONCLUSIONS AND RECOMMENDATIONS

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The MSCI team has made recommendations in four areas: management, training, MOH - contractor working relationships, and evaluation.

### A. Management

#### 1. RPIUs

The RPIU is viewed as a very positive management model for implementing PHC at the regional level. It is congruent with the national emphasis on decentralizing line ministry program implementation (e.g., regionalization). The MOH should consider expanding the model to other regional directorates in Sudan.

In Kordofan and Darfur, the MSCI project team believes that the RPIUs should become the coordinating authorities for all PHC activities, not just the RHSP. This will require encouraging donor agencies, and other NGOs, to participate in the policy deliberations and coordinate their activities with overall regional plans.

#### 2. Program Scope

The breadth of health problems in Sudan is very wide. There are clearly insufficient resources to meet the health needs of the population. PHC programs should be tightly focused; this will require making difficult decisions on what to retain and what to leave out of specific programs. As an example, the sanitation component of RHSP focuses on privies. These should be built in conjunction with projects to make water available. A program component like this should receive more inputs than provided by the RHSP or be deleted from the program mix.

#### 3. Logistics

There is a significant need to establish reliable repair facilities for USAID and other donor provided vehicles to the MOH. This is a task which is too large for any one project. A consortium of donors will have to address this gap if efficient use is to be made of donor provided vehicles.

For its part, the MOH must realize that its strength is in PHC, not vehicle repair. Establishing such facilities should probably involve other government ministries.

#### 4. Finances

USAID/Sudan has put considerable resources into the RHSP in the six year period, 1984 - 1990. This includes both dollar costs and Title I and Title II-generated local currency funds. Management and oversight of counterpart expenditures has been weak. This has inhibited the implementation of the ambitious PHC plans of the RHSP.

A majority of MSCI team members believe that the contractor should have direct authority over expenditures of project counterpart funds. They feel this could have been the most important technical assistance provided to the project.

An example of softness in financial accountability relates to the community pharmacy network. Drugs are sold, so the potential for sustainability exists. There has been, however, no direct reporting back to the RHSP on the use of funds, particularly income generated. As a result, no assessment of self-sufficiency could be made regarding these retail outlets.

#### B. Training

Training appears to the MSCI team as the best long-term investment that can be made to promote PHC in Sudan. The Kordofan Training Unit is a model for the type of appropriate facility that should be established in the regions. It is completely operated by Sudanese and managerially capable of utilizing resources from multiple donors.

The Darfur RHSP also demonstrates that training does not have to await the construction of a building. Competent staff with sufficient support are the critical ingredients.

#### C. MOH - Contractor Relationships

##### 1. Counterparts

A significant inhibition to productivity was the absence of key counterparts. The more dramatic example was the failure of the MOH to appoint a Director General for Medical Services in Darfur or a unit director for MCH/Family Planning in either region. The team believes that donors, such as USAID, should require that key counterparts be in place before contract specialists come to Sudan.

##### 2. Vertical Programs

The RHSP, by design, is an integrated approach to PHC. It is required to interact with a variety of vertical programs. The role of the RHSP, and particularly the expatriate advisors in this interface, should be given careful attention.

Most vertical program staff viewed the RHSP as a conduit for extra resources -- fuel, spare tires, and per diem, to name a few. This clearly underutilizes the contribution that MSCI specialists can, and should have made, to these programs. In the future, the RHSP should resist being cast as a fill-in for budget shortfall and play the role of technical advisor assisting the vertical programs to integrate their activities with other components of PHC.

#### **D. Evaluation**

There is an inherent conflict between "getting the job done" and allocating scarce resources to evaluating what works and what does not. Heavy emphasis was given in the RHSP to implementing work plans, e.g., accomplishing tasks. Some, but perhaps insufficient, attention was given to identifying more efficient approaches in the context of Sudan. Since the RHSP is a pilot project, more emphasis should have been given to documenting successes so these could serve as prototypes for national implementation.

**APPENDIX A**

**Key Contacts**

APPENDIX A

KEY CONTACTS

National MOH

H.E. Prof. Mohamed Shakir Elsarrag	Minister
Dr. Kheiry Abdel Rahman	First Under Secretary
Dr. Abdel Hamid Elsayed	Director General, PHC/RHSP
Dr. Amal Abu Bakr	Director, MCH/FP
Dr. Eltayeb Gariballah	Director, EPI
Haj Mohie Eldin Ibrahim	Special Assistant, Dir. Gen. PHC/RHSP
Dr. Hilary Okani	Acting Director, CDD
Dr. Kamal Ahmed Mohamed	Director, Nutrition

Kordofan MOH

Dr. Mirghani Suliman	Director General, Health Services
Dr. Amal Dardiry	CDD Coordinator
Dr. Ali Hassan Omer	Director of Health Services, South Kordofan
Mr. Abdel Rahman Babiker	EPI Regional Operations Officer
Dr. Abdel Bagi Ahmed	Medical Inspector,
Sit Anna Awad	Regional Midwifery Inspector Dilling Hospital
Mr. Azzam Hassan Dean	Medical Inspector, Dilling District
Dr. Aziza Abdel Azizi	Director, Community Pharmacy, El Obeid
Mr. Gozouli Ishaq	Regional Asst. Director, Statistics
Sit Hawaya Fadl Elmoula	Health Visitor, Bara District

58

Dr. Justin Ambago	Medical Inspector, Dilling District
Dr. Mohamed Elfadil	Medical Inspector, Bara District
Dr. Babiker Hamid Babiker	Pharmacist, Community Pharmacy, El Rahad
Mr. Bashir Ibrahim El Dau	EPI Supervisor, El Rahad Health Area
Dr. Elhaj Malik	MCH/FP Consultant, MOH
Dr. Elkheir Eltayeb	Senior Pediatrician, El Obeid Hospital
Mr. Eltahir Adam Mohamed	Senior Medical Assistant, El Rahad
Dr. Hamid Gad Elmoula Mohamed	Medical Officer, Bara Hospital
Dr. Haroun Eltayeb	Medical Officer, El Rahad Hospital
Mr. Hamid Omer	Senior Medical Assistant, Bara
Sit Hawa	Health Visitor, Bara.
Dr. Justin	Medical officer, Dilling Hospital
Dr. Mustafa Abu Bakr Omer	Director of Health Services, North Kordofan
Mr. Muggamer Abdel Rahman	MOH Logistician
Mr. Mohamed El Mahdi	EPI District Operation Officer, Dilling
Dr. Mchaemd El Fatih	Medical Inspector, Bara Hospital
Ms. Nafisa Omer	MCH/FP Officer, Kordofan
Miss Salma Eltayeb	Senior Nutrition Officer
Mr. Salah Eldin Elagib	EPI Cold Chain Officer
Mr. Yousif Ibrahim Yousif	Pharmacist, Dilling Hospital and Community Pharmacy

Darfur MOH

Dr. Rasheed Abdel Rahim	Former Director General for Health Service (thru April '89)
Dr. Hashim Mohamed Ali Ziada	Director General Health Services (Sept.-Dec.'89)
Dr. Amro Mohamed Abbas	Acting Director General for Health Services
Dr. Abadallah Saleh	Deputy Director General for Health Services
Dr. Ahmed Abdel Rahman Ahmed	CDD Coordinator
Mr. Abakar Ibrahim Gifoun	EPI District Operations Officer, Kuttum District-Member PHC Committee
Mr. Ahmed Amara	District Senior Medical Assistant.
Mr. Ali Salih Mohamed	EPI District Operation Officer.
Ms. Batul Idris	Health Visitro, Mellit District.
Mr. Bedawi Mohamed Belila	Sanitary Overseer, Mellit District - Member
Mr. El Tahir Eisherif Mustafa	Senior Medical Assistant, Kuttum District - Member PHC Committee
Mrs. El Toma Ahmed Mukhtar	Regional Inspector of Midwifery
Mrs. Fatma Mohamed Ibrahim El Sharif	Regional Nutritionist
Mr. Hassan El Ahanaf	Statistician Dept.
Ms. Hawa Osman Isaag	Health Visitor, Kuttum District - Member
Dr. Kajemsok Abdallah Moi	S.M.O. Millet District Hospital and Medical Inspector.

Mr. Mohamed Abdalla Shaibu	Sanitary Overseer, Kuttum District - Member PHC Committee
Mr. Mohamed Ahmed Angal	Regional Senior Medical Assistant
Mr. Mohamed Elhaj Assil	EPI Operations Officer
Mr. Mohamed Aljak Amrani	Deputy Director for Environmental Health and Sanitation
Dr. Mohamed Issail Mohamed	Assistant Director General for Health Services, Darfur
Mr. Mohamed Kheir Saleh Mohammadein	Chief Administrative Officer, Kuttum District-Chairman PHC Committee
Mr. Mr. Mohie Eldin Omer Abdel Latif	Chief Executive Officer, Millet
Mr. Suliman El Hag Jidu	Assistant Senior Medical Assistant, Kuttum District - Member PHC Committee
Dr. Suliman Hassan Adam	S. M. O. Kuttum Hospital and Medical Inspector Kuttum District-Secretary PHC Committee
Three members from the community	
- Mr. Mohamed Musa Mustafa	Community Member, Mellit Health Committee
- Mr. Eisa Abdalla	Community Member, Mellit Health Community
- Ms. Asha Hamid	Community Member, Mellit Health Committee

University of Khartoum, Faculty of Medicine

Dr. Abdel Rahman Eltom	Chairman, Department of Community Medicine
Mr. Mohamed Mahmoud Ali	Dept. of Community Medicine

Dr. Mohamed El Fatih Ali

Dept. of Community  
Medicine

Dr. Rughia Abu Elgasia

Dept. of Community  
Medicine

Dr. Pharouq Abdel Aziz

Director, Training Center

Dr. Sawsan Mustafa Abdel Kareem

Dept. of Community  
Medicine

62

**APPENDIX B**

**Revised Scope of Work**

63

## APPENDIX B

### SCOPE OF WORK

(Revised: SEPT. 14, 1981)

#### SECTION C - WORK STATEMENT

##### C.1: General

The contractor shall provide technical assistance to the Rural Health Support Project (RHSP) as directed by the United States Agency for International Development Mission to Sudan (USAID, Sudan) Project Officer. The contractor will provide technical assistance to the Government of Sudan (GOS) through the Ministry of Health (MOH) in the following areas:

(a) Strengthening the planning, budgeting, management, supervision and evaluation capabilities of the Primary Health Care (PHC) system, specifically the Rural Health Support Project (RHSP).

(b) Institutionalizing and strengthening the delivery of Maternal and Child Health/Family Planning (MCH/FPP) services through the PHC system, particularly Oral Rehydration Therapy (ORT), immunization (EPI), MCH/Family Planning, nutrition and sanitation activities. This is to be done in the two western regions of Kordofan and Darfur working through the mechanism of RHSP.

##### C.2: Specific Responsibilities

(a) STRENGTHENING THE PLANNING, BUDGETING, MANAGEMENT, SUPERVISION AND EVALUATION CAPABILITIES OF THE PRIMARY HEALTH CARE (PHC) SYSTEM.

(1) -- Create and support planning committees at the regional level that will assume oversight responsibility for community participation and responsibility for PHC programs through the mechanism of local Health Area Councils.

-- Develop Health Area Councils (Primary Health Care Committees) in selected pilot Health Areas and assist them to become responsible for the planning, budgeting, and oversight of PHC activities within their communities. This includes covering some of the recurrent costs of PHC services (in cash or in-kind)

-- Move towards providing PHC services, particularly at the district and Health Area level, in a comprehensive integrated model (even though many MOH interventions are "vertical" programs).

##### (2) Activities of the Contractor

(i)

-- In Darfur, the Contractor will assist with the development and functioning of a Regional project

64

Implementation Unit (R.PIU). This committee will identify two pilot Health Areas where RHSP activities will be concentrated until EOP.

-- In Kordofan, the Contractor will play an active role in stimulating the already created R.PIU to oversee the implementation of PHC in the region including:

- (a) Presenting semi-annual budgets for RHSP,
- (b) Demonstrating and documenting significant progress towards delivery of integrated PHC service in the three pilot areas.
- (c) Contractor will demonstrate improvement in quantity and quality of supervisory visits to health facilities in three pilot health areas.

(ii)

-- The Contractor will assist regional and national staff to prepare semi-annual budgets and accompanying program narratives:

- (a) Darfur and Kordofan contract staff will assist their respective R.PIUs to prepare regional reports and forward them to MOH/Khartoum.
- (b) Khartoum staff will assist the DG/PHC to consolidate a total RHSP budget and narrative and present written and oral reports to the Ministry of Finance and Economic Planning (MFEP).

(iii)

-- The Contractor will seek to increase community participation in PHC. In collaboration with central and regional MOH staff, the Contractor will initiate and test cost sharing activities in at least two areas. The Contractor may wish to hold workshops to share experiences in cost sharing activities.

(iv)

-- The Contractor, in collaboration with other donors, will assist the MOH to strengthen suitable vehicle repair facilities and logistic management capability for transport for RHSP and other MOH vehicles in Kordofan and Darfur at regional repair facilities.

(v)

-- In collaboration with MOH officials, develop and implement the following activities to improve availability of drugs through the creation of community oriented pharmacies and their branch outlets.

(vi)

-- In collaboration with R.PIUs, PHC committees, and village health committees, the Contractor will explore cost

65

effective local transportation systems for village-level PHC workers and project supplies, e.g., vaccines, contraceptives, ORS and essential drugs.

(vii)

-- The Contractor will assist the regional Directors of Health Services to develop regional training plans. This will include strengthening the capacity of regional training institutes to train PHC staff locally in both Kordofan and Darfur.

(viii)

-- The Contractor will institute a pilot Health Information System (H.I.S.) in Kordofan. Forms will be developed for electronic data processing (EDP) and appropriate equipment, software, and trained staff put in place. A review will be made to determine the feasibility of establishing a similar system in Darfur.

(ix)

-- The Contractor will develop mechanisms for evaluating program progress and outputs. These will include, but not be limited to, surveys, special studies, analysis of H.I.S. data, and assessments by external review teams.

(B) INSTITUTIONALIZING AND STRENGTHENING THE DELIVERY OF CHILD SURVIVAL SERVICES THROUGH THE PRIMARY HEALTH CARE SYSTEM PARTICULARLY ORAL REHYDRATION THERAPY (ORT), IMMUNIZATION (EPI), MATERNAL AND CHILD HEALTH/FAMILY PLANNING (MCH/FP), NUTRITION, AND SANITATION.

(1) Objectives

-- To increase the quantity and quality of PHC services, particularly in the pilot rural health areas of Kordofan and Darfur.

2. Activities of the Contractor

(i)

-- The curricula of MOH midwifery and TBA training institutions will be reviewed. If deemed appropriate, revisions in curricula will be made to both (external consultants may be appropriate for this task). Schools of midwifery and training programs for TBAs in Kordofan and Darfur will serve as sites for introducing the new curricula.

(ii)

-- The Contractor will upgrade and increase training opportunities for midwives and TBAs. In Kordofan, a minimum of four training sessions for TBAs will be completed by EOP. In El Fasher the Contractor will explore instituting TBA and other health provider training in Darfur.

62

iii)  
-- In Kordofan assistance will be provided to EPI in the installation, maintenance and evaluation of sixteen (16) solar powered refrigerators. The Contractor will support and strengthen delivery of EPI services by promoting use of MOH fixed facilities for this service. At EOP the Contractor must demonstrate a significant increase in use of fixed facilities in delivery of EPI services in Kordofan. In Darfur, emphasis will be given to increasing the immunization coverage rates, particularly in North Darfur.

(iv)  
-- The system of community pharmacies, already inaugurated, will be expanded to include two additional facilities and two branch outlets.

(v)  
-- Assistance will be provided to the CDD program to establish ORT 'corners' in hospitals and health centers. These will be model units to encourage mothers to participate in the program under the guidance of carefully trained health professionals.

(vi)  
-- The Contractor, through the Regis of RHSP, will promote village sanitation, demonstration and evaluation of the construction of Ventilated Improved Pit (VIP) latrines. Instructional material will be developed in conjunction with this activity and identification of least cost models using locally appropriate and available materials will be investigated.

(vii)  
-- The Contractor will support the development of initiatives in nutrition including improved weaning practices, growth monitoring, and nutrition education, and specific interventions, e.g., Iodine, Vitamin A, etc.

(viii)  
-- The Contractor will initiate such other activities that are consistent with developing the institutional capacity of regional directorates of health to deliver PHC services in Kordofan and Darfur.

**APPENDIX C**

**Trust Fund Expenditures in Support of  
Rural Health Support Project**

APPENDIX C

TRUST FUND EXPENDITURES IN SUPPORT OF RURAL HEALTH SUPPORT PROJECT

FEB.89-JAN.31,90

CATEGORY	BUDGETTED FEB.1,89/FEB.28/90	EXPENDED FEB.89/JAN.31,90
Salaries and Wages (Including MOH/RHSP Incentive Payments)	1,210,000.00	976,678.00
Allowances	300,000.00	59,013.00
Per Diem	500,000.00	429,547.00
Rental Charges	180,000.00	177,900.00
Travel & Transport	380,000.00	342,425.00
Audit Fees	135,000.00	132,590.00
Other Direct Costs	1,695,000.00	485,463.00
<b>TOTAL</b>	<b>4,400,000.00</b>	<b>2,603,616.00</b>

\* M.S.C.I estimates that LS 40,000.00 will be billed for expenses prior to Feb.28, 1990, but invoiced after that date.

69