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Child Survival Strategy for Sudan

USAID/Khartoum
November 1987

Resources for Child Health Project

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CHILD SURVIVAL STRATEGY FOR SUDAN

USAID/Khartoum

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LIST OF ACRONYMS

ADRA	Adventist Development and Relief Agency
AMREF	African Medical Relief Foundation
CDD	Control of Diarrheal Disease
CHW	Community Health Worker
EPI	Expanded Program of Immunization
GOS	Government of Sudan
FEWS	Famine Early Warning System
HIID	Harvard Institute for International Development
JNSP	Joint Nutrition Support Program
MCH/FP	Maternal Child Health/Family Planning
MDC	Management Development Centre
MOH	Ministry of Health
NGO	Non-Governmental Organisation
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PHC	Primary Health Care
PHCU	Primary Health Care Unit
PPPS	Population Policy Program Support
PRICHOR	Primary Health Care Operations Research
PRITECH	Technology for Primary Health Care
PVO	Private Voluntary Organisation
REACH	Resources for Child Health
RHSP	Rural Health Support Project
SCF	Save the Children Federation
SERISS	Sudan Emergency Relief Information Surveillance System
TBA	Traditional Birth Attendant
UNFPA	United Nation Fund for Population Activities
UNICEF	United Nation Childrens Fund
USAID	United States Agency for International Development
WHO/EMRO	World Health Organisation/Eastern Mediterranean Regional Office
WV	World Vision

I. INTRODUCTION

Sudan, the largest country in Africa, is one of the most diverse in terms of climate, environment and cultures. It links the Islamic Arab world with central African cultures more influenced by Christianity. This diversity, although of great potential, is also a major constraint to development. Repetitive droughts and famines, an exhausting civil war, and the great influx of refugees from neighboring countries have drained its meager resources and have led to a disastrous economic situation with subsequent political crises. Sudan is facing a critical time when major decisions and readjustments have to be made in all sectors, and health is no exception. This is a time when assistance is welcomed and can have a major impact.

Over the years, AID has brought assistance to Sudan, involving large amounts of economic and development assistance. AID played a major role during and after the 1983-1985 drought, bringing massive food aid and supporting large relief programs.

Sudan is one of the eight African child survival emphasis countries. The selection of these countries has been based on the magnitude of the health problem, the commitment of the government to child survival activities, its absorptive capacity and the presence of an AID continuing assistance program. Sudan responds to these criteria in many ways. Most of all, there is a need to support its current efforts to develop a national PHC program aimed at the underserved. The Sudan National Health Plan issued in 1975, shaping the PHC program, preceded the Alma Ata Declaration. It has since increased its emphasis on key child survival activities such as EPI and CDD.

The objective of this child survival strategy has been to identify areas in which to work that would provide the greatest impact not only in terms of the reduction in morbidity and mortality rates, but also in terms of sustainability. This paper builds on the commitment and specific programs which the government supports, and attempts to provide a strategy that links the discrete areas of child survival activities with one another.

II. SCOPE OF THE PROBLEM

Sudan is the largest African country with an area of 2.5 million km². Its current population (based on the 1983 census) is estimated to be around 23.5 million, of which 74% live in Northern Sudan. Population density is low, at an average of 8 persons per km², with significant regional variation. An estimated 21% to 30% are considered urban, 59% to 68% settled rural and 11% nomadic. Due to a high fertility rate of about 6.7, the population is young; 45% are under 15 years of age and children under one year of age number slightly over 950,000. Sudan's population is growing at about 2.9% annually. Due to a major influx of rural people, the urban population is increasing more rapidly, at an estimated rate of 6 to 8%. Population projections suggest that the population will increase by roughly 55-65% from its current size, to 35 million, within the next 15 years and will more than double over the next 30 years. Life expectancy at birth is 49 years and the overall infant mortality rate is approximately 140/1000 live birth.

Surrounded by several countries hit by civil wars and drought, there has been a great influx of refugees to Sudan. About 1.3 million are registered (0.8m Ethiopian, 0.3m Ugandan, 0.2m Chadian), however, over 10% of the total population may be refugees due to the 1983-1985 drought and the on-going civil war in the south. The prospect of a new famine in Ethiopia and the severe rain deficit observed this year in the western and southern part of the country leads one to believe that the problem of displaced and destitute populations will remain in the coming years.

The adult literacy rate is 31% (53% urban and 25% rural). Nevertheless, impressive gains have been made in the provision of primary education in the last ten years. Primary school enrollment ratios have improved from 25% in 1969 to 55% in 1985.

There is no recent comprehensive data on the causes of morbidity and mortality in children in Sudan. The data that does exist indicates that diarrhea, acute respiratory infection (ARI), measles and fever are the leading causes of morbidity and mortality of children under five. According to a survey conducted in North Sudan in October 1986 by SERISS, morbidity patterns of children, based on a 14 day recall period, showed that 40% of children less than five years of age, were reported to have had diarrhea, 18% vomiting, 1% measles, 46% ARI, 49% fever and 2% night blindness. Anthropometric measurements, which were taken in conjunction with this survey, showed that the overall rate of malnourished children (<80% of weight/height) was 15.8% with considerable variations from area to area.

Other data collected by SERISS indicates seasonal variations in the nutritional status of children as well as for diseases according to the environment. Measles is found to be more prevalent during the dry season, as is ARI. In the North, Malaria shows a marked increase during the rainy season and an increase in transmission during the following months.

Although no data is available on well known killers such as measles, neonatal tetanus and malaria, recent surveys have revealed the importance of diarrhea. In the mortality/morbidity surveys conducted in Khartoum North by the staff of CDD, in September, 1986, the two week diarrhea incidence rate for children under five in urban areas was 13/100 and for those in the rural areas of Khartoum the rate was 17.1/100. The diarrhea associated mortality was 24.6/1000 and 25.2/1000 respectively. In a similar survey conducted by CDD in South Kordofan in December of 1986, the two week diarrhea incidence rate was 16.1/100 and the diarrhea associated mortality rate was 54.5/1000.

Acute Respiratory Infections (ARI) are recognized as one of the leading causes of morbidity and mortality in Sudan. In 1982, a total of 2.6 million were admitted to hospitals and 1.62 million cases were due to ARI. A survey of admissions to Omdurman Teaching Hospital showed that 45% of all admissions to the childrens wards were related to ARI. Thirty percent of all deaths in children under five years of age were attributed to ARI and diarrheal diseases accounted for 20%.

Due to the lack of a comprehensive and reliable data collection system in the Sudan, only estimates can be made of the impact on the morbidity and mortality from the six childhood immunizable diseases. UNICEF estimates that the total morbidity from the six vaccine preventable diseases is 1,200,000 cases per year, and of these cases 50,000 result in infant and child deaths.

High fertility also contributes to high infant and child mortality through reducing the interval between births. Data from the 1978/79 Sudan Fertility Survey (SFS) indicates that the risk of death for infants born during intervals of less than 24 months is 1.6 times greater than for those children born at the end of a 24-47 month birth interval. Based on this data, it has been estimated that if all intervals less than 24 months long were extended to 24-47 months, about 19% of the infant deaths could be averted.

Finally, endemic diseases are increasingly prevalent in Sudan due to the lack of resources available to control programs. Schistosomiasis is spreading due to an increase in irrigated areas of the Gezira and around the Blue and White Nile. In certain areas, prevalence levels of over 70% are being recorded for this disease. Over the last two decades, intestinal schistosomiasis has nearly replaced the less severe urinary infection. The resurgence of leishmaniasis, particularly in the Northern province and around Khartoum, poses an additional problem. It must be considered as a side effect caused by the breakdown of malaria DDT vector control operations which were also effective in controlling sand flies, the leishmania vector. In an area south of the Rahad Project, Kala Azar, visceral leishmaniasis ranks third as a cause of morbidity (13.6%) and second, after malaria, in mortality (15%). Trypanosomiasis or sleeping sickness again is becoming a major problem in the south, but due to the civil war, no accurate reporting is available. Although no data is available on the prevalence of Tuberculosis, it also can be expected to be on the rise due to the impoverishment of large sections of the population, rapid urbanization, and the radical changes in the lifestyle of destitute nomads and refugees.

Of all the diseases endemic in the Sudan, malaria is considered to be the most common and clearly constitutes a major public health problem. *P. falciparum*, the most common form, is a major cause of morbidity and mortality. It is most prevalent in the southern humid zones and more seasonal in the north, with a peak incidence during the rainy season and the following months. Surveys done in villages north of Khartoum suggest a synergism between malaria and malnutrition in under-five children. Lack of funds and insecticides have severely hampered mosquito control programs except in the Blue Nile project in the Central Region. As a result, malaria is on the rise. Khartoum, which was malaria free, is once again malarious. The spread of vectors resistant to DDT and to malathion and the suspected emergence of chloroquine resistant strains of plasmodium in the south is a cause of great concern.

III. GOVERNMENT POLICY AND PROGRAM

Sudan's national primary health care (PHC) program has been in existence for over a decade. It has promoted a number of activities including: the control of common endemic and epidemic diseases; maternal and child health services; immunization of children; health education; and water and sanitation improvement. Unfortunately, the critical financial crisis over the last years has led to growing underfinancing of the health sector. Government health expenditures as a proportion of the GDP have decreased from 2% in 1971 to a mere 0.6% in 1986. Health expenditures as a share of total government expenditures decreased from 9% in 1971 to 3.9% in 1986, resulting in an estimated US \$0.85 spent per capita in 1986-1987. Consequently, the financing of operating costs has been practically non-existent and the bulk of available resources has been used to pay personnel salaries which in real terms have decreased. The current overall expenditure for health care in Sudan is estimated at approximately LS 380 million per year (\$86 million), with private sector expenditures at some LS 300 million, or 80% of the total.

The general deterioration of the public provision of health services generated a rapid growth of the private sector, in particular, in the urban areas. In Khartoum, the number of private hospitals increased from a mere 3 in 1983 to 15 in 1987. Private and parastatal firms have become important sources of health care revenue. In the past five years, the amount of reimbursable medical expenses paid has increased by 65%. Local communities have been able to support part of the operating costs and have financed the construction of new facilities. User fees are being introduced in hospitals and outpatient facilities. In the central region, the regional authorities instituted health taxes on cinemas and on bus fares to help meet the operational costs of local health facilities. A successful network of popular pharmacies, selling drugs at subsidized prices, was generated, allowing a greater drug availability without destroying the parallel private pharmacies. There is less documented evidence of similar alternative cost recovery activities in rural areas.

In view of the present situation, the MOH has recently taken the first steps to focus on urgent needs, such as ensuring drug supply, maintaining selected health facilities, improving planning and budgeting procedures, controlling the expansion of the system, and preventing and controlling major diseases. The rehabilitation of hospitals and other health facilities is felt to be one of the most urgent needs. The new four year plan, currently being formulated, will promote upgrading the quality of health services and increasing the coverage and utilization of these services. A new model of delivering comprehensive health services centered around rural hospitals is being proposed. This plan has not yet been released and is expected to be further developed.

A. Structure and Organization of Health Services

Before the Regional Government Act of 1980, the Ministry of Health (MOH) was responsible for planning, implementing and delivering services throughout the country. Since then, the MOH's responsibility has been limited to overall policy development, health research, manpower development, legislation, inter-regional management (drug supply) and

management of national referral and teaching hospitals. Under this 1980 act, the regional health directors have been given considerable authority and autonomy from the central Ministry of Health for the planning and implementation of health activities in their regions. They, in fact, report directly to the regional governor and not to the central Ministry of Health. With the exception of their salaries, which are provided by the MOH, the Ministry of Finance and Plan and the regions themselves provide the yearly operating budget for health services in the regions. However, the effectiveness of the regional health authorities has been severely constrained by the limited tax base for health financing at the regional level, shortages of trained health administrators, insufficient supply and poor logistics throughout the system.

At the central level, in Khartoum, the Ministry of Health is composed of ten General Directorates (see Appendix II). Each directorate is subdivided into several directorates, sections or units. One of the most important is the Directorate General of Primary Health Care. It encompasses seven directors: CDD, EPI, Health Education, Maternal and Child Health, Nutrition, Primary Health Care and School Health. Family planning activities and a certain number of donor initiated projects also come under this directorate, like the Joint Nutrition Support Program (JNSP)

The control of malaria, schistosomiasis and other endemic diseases are under the authority of the General Director of Preventive and Social Medicine. These are mainly vertical programs inherited from the time when eradication strategies were implemented. The malaria control program in particular, utilizes a cadre of specialized personnel at all levels of the health care system. A similar group of operations officers exists for water and sanitation activities. These quasi parallel systems of personnel in charge of specific activities, also observed with vaccinators, have not promoted the integration of these activities at the local levels and have prevented them from becoming an integral part of the PHC system.

The health care infrastructure is divided into four administrative levels. At each level there are authorities in charge of coordinating health services and implementing the health activities. At the regional level, the Regional Health Director is assisted by a number of community physicians and is responsible for the activities implemented in the region. A similar, but simplified, structure exists at lower levels. The following presents a summary of this structure.

PRIMARY HEALTH CARE INFRASTRUCTURE

REGION (including Khartoum)	Urban Hospitals Health Centers
PROVINCE	Hospital Health Centers
DISTRICT	Hospitals Health Centers Dispensary
URBAN/RURAL COUNCIL	Rural Hospital Dispensary
VILLAGE	Dispensary Primary Health Care Unit Dressing Station Village Midwife

Over the last ten years, Sudan has implemented an extensive PHC program aimed at improving the accessibility of health services to the population. This was accomplished by introducing the scheme of PHC Units and CHW's. This program however, has not been able to be sustained due to lack of government funds.

B. Existing Child Survival Activities

1. Immunization

Although the Sudan Expanded Program on Immunization started in 1976, and a national EPI Plan of Action was produced in 1980, up until 1985 the estimated national coverage (i.e., children under age one year fully immunized against the six EPI target diseases) was 3%.

Since 1985, significant amounts of external resources have been allocated to the program and national coverage for children under one year of age is reported to have increased to 11% in 1986. The increase, in large part, has been due to the use of a campaign approach in the Khartoum region, which increased this regions coverage from 22% to 52% in three months. This coverage, however, is not believed to have been maintained.

The success of this campaign generated considerable interest and commitment in political circles and by the end of 1985 a declaration was made by the Council of Ministers entitled "Agreement to the Implementation of the National Accelerated Program for Children."

UNICEF, through major financial support/pledges from the Italian government and AID, has provided the major impetus to the acceleration of EPI activities. With the technical and financial support provided through UNICEF, vaccination coverage for the period of January-June 1987, reported from district immunizing points and based on immunizations performed as recorded at the district and peripheral level, indicates the following performance:

Vaccines	All Sudan	66 Reporting Districts
BCG	20.19%	34.4%
DPT1/OPV1	20.3%	34.6%
DPT3/OPV3	11.54%	20.1%
Measles	8.50%	14.6%
TT1	8.00%	13.7%
TT2	5.00%	8.5%

These figures are national figures. They include regions which are deeply affected by armed conflict in the south of Sudan. On the basis of the performance of immunizations given from January - August 1987, and the actions which have been taken to strengthen the program, it is estimated that by the end of 1987 full immunization coverage, based on lowest antigen coverage, in the three EPI regions, Northern, National Capitol, and Middle will reach at least 35%.

Because of the inability to provide continuous health care services to the population in the Southern Region, which constitutes 25% of the population, the regional target objectives established to reflect this situation are as follows:

Year	Target
1987	25%
1988	55%
1989	70%

The same rates of coverage of pregnant women with two doses of tetanus toxoid are to be achieved in these areas.

The program, in principal, appears to be well planned. The basic national approach, as described in the UNICEF 1987-1989 Child Survival Plans of Operation, is based on the key principals of integration, development of regional programs and establishment of provincial and district operations.

Vaccination strategies for urban areas, rural areas with sedentary populations, and those with nomadic populations have been covered in this plan. The planned program activities stress:

- * establishment of professional management teams at the national and regional level
- * development of an operational cold chain transportation system

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- * integration of immunization services at primary health care units with other services
- * development of a management and health information system and comprehensive program of monitoring, evaluation and supervision.

Since August of 1987, three (3) technical assistants have been assigned to the EPI by UNICEF, and one (1) manager for EPI is located at UNICEF. While EPI is one of seven directorates within the direction of Primary Health Care, it is a distinctly vertical program at all levels, more so than other directorates.

Approximately 70% of its resources come from external assistance and 30% from the MOH, primarily in the form of salary and vehicle maintenance services and a proportion of fuel costs. Currently, the level of donor funding appears almost matched to the level of activities.

A detailed plan of operations has been developed at the national level, and regional and district plans are being developed with the assistance of the central team. The 1988 national plans of operations address the material, transport, IEC, monitoring and evaluation, and staff support (i.e., incentives) aspects of the program. At this time, little emphasis is being placed on the integration of these activities with other components of PHC, and on management training.

2. Control of Diarrheal Diseases

The first initiative to attack the diarrheal disease problem on a national level was taken in 1983. In September, 1985, after numerous activities were started by various projects, the Department for the National Control of Diarrheal Disease (CDD) Program was established under the Directorate General of PHC.

In the short time that this program has existed, remarkable achievements have been made in the planning and execution of the first phase of this project. A well developed plan of action, both at the national and at the regional, level has been established for the year. The quality and quantity of training is impressive as are the types of planning and supervisory guidelines and health education materials that have been developed. All this has been done with few staff at the central level working in cramped quarters and with a small budget primarily from WHO and AID's local currency account.

A national workshop on the control of diarrheal diseases was held in Khartoum in January 1986, involving both national and regional staff. During this workshop general guidelines for future CDD activities in the country were developed.

The Plan of Action, established for 1986-1988, gives priority to the reduction of mortality due to diarrhea through improved case management emphasizing oral rehydration therapy and proper feeding. The target of this plan is to reduce mortality due to diarrhea by 13% in children under

five by the end of 1988. The major activities of the CDD program have been in the areas of training, surveillance and monitoring, research, health education, and planning.

To date, close to 2000 mid-level health workers have attended the National ORT 14-day training course. Training of ORT Trainers courses (6 days) were conducted in three regions in February and March, 1987, increasing the total number of ORT trainers to 127 distributed among 6 regions. A reference booklet for mid-level health workers was issued in February 1987, and is given to all health workers after completion of the ORT training course. The national ORT training curriculum has been adopted by all the paramedical schools in the country. The training stresses case management of diarrhea and also emphasizes the importance of proper nutrition and continued breastfeeding. In March, 1987, the ORT Demonstration and Training Center in Omdurman Hospital was opened and the first ORT course for medical officers successfully took place. The National CDD medical officer and the medical officer responsible for the daily running of the Omdurman ORT Demonstration and Training Unit have also attended the PHC management course (3 weeks) given at Gezira University. Two of the staff members from the National Department and one sanitary overseer participated in a course on the technique of testing health education material. The training has been most successful and has motivated medical directors in charge of health centers to establish ORT corners in their centers.

Nine sentinel surveillance sites have been identified, three in Darfur Edien district, three in Northern Kordofan and three in Khartoum. A reporting form containing information on diarrheal diseases and the 6 immunizable diseases and vaccination status has been field tested and a review of the form was made during the October, 1987, National CDD workshop. The ORT demonstration and training center is collecting comprehensive information in its outpatient department and this information is being computer programmed for analysis. A supervisory checklist has also been developed.

Research has been conducted on the morbidity, mortality and treatment of diarrhea in South Kordofan and North Khartoum. Further research is being conducted on supervision of CDD and EPI activities. Also, several undergraduate research studies on diarrheal diseases are being undertaken as part of the students community medicine assignments. Technical assistance has been given to surveys and small research studies conducted by NGO's.

Health education and communication activities have consisted of developing a flip chart on "What to do when Your Child has Diarrhea" and a small booklet telling the same story has been printed. An additional 10,000 copies have been printed of two breast feeding posters originally developed and printed at the end of 1986. Social mobilization activities are being developed in collaboration with UNICEF.

CDD regional planning workshops have taken place and regional CDD plans have been developed following the printed guidelines developed by the national CDD team. CDD regional directors have been appointed.

The strategy for the use of ORS relies on the use of packets. Emphasis is also placed on mothers giving extra fluids such as breast milk, tabaldi, weak tea, juices, and water as soon as the diarrhea starts. Feeding during episodes of diarrhea is also stressed. UNICEF has been the major supplier of ORS. An agreement has been reached with the Pharmacy Division that only 1 liter packets, made according to the WHO formula, will be allowed into the country. Several meetings have been held with pharmaceutical companies interested in local ORS production. These locally produced packets will be distributed through private pharmacies.

3. Nutrition

Food relief programs are still active. Currently there are 490,000 refugees being assisted by the UNHCR through the Refugee and Rehabilitation Commission. Numerous NGOs are continuing their efforts to implement relief programs throughout the country, in particular, the western regions.

The MOH's 1977-1984 National Health Program goal was to attain a 50% reduction in malnutrition through promotive, preventive, and curative strategies. Education, through mass media and primary health care workers, growth monitoring and referrals were the activities to be implemented. So far, little has been done and nutrition activities like growth monitoring are not integrated and certainly not being enforced as a support tool for MCH activities. In the draft 1988-91 health plan, the target goal is a "reduction of incidence of malnutrition and anemia from 33.8 to 20 per 100,000 population" through the provision of supplementary feeding to children in PHC facilities and in schools, and nutrition education of school children and the public. However, no comprehensive strategy has been developed by the Nutrition Division at the MOH level.

UNICEF has provided assistance to nutrition programs since 1960. This assistance has included the establishment of school gardens, training of school-feeding supervisors, and the development of nutrition guides for teachers. Comprehensive approaches to nutrition issues are being made through the Italian financed UNICEF/WHO Joint Nutrition Support Program (JNSP) in certain regions. Currently growth monitoring activities are carried out by CHW's in 234 villages in South and North Kordofan and in the Eastern Region. A recent evaluation asked for a halt to its expansion and recommended that emphasis be placed on reinforcing supervision and integrating nutrition with other PHC activities. DANIDA is investigating Goiter and Iodine Supplementation.

NGOs are actively involved in nutrition projects, integrating them with income generating activities or food for work schemes. Due to the initial emergency situation which generated the arrival of numerous NGOs, the communication constraints and the independence of local or regional agreements, very little control, planning and coordination is able to be done at the MOH level. Consequently no clear picture of the overall activities can be drawn.

4. Child Spacing

Sudan had no official population policy until the election of the present government. In mid-1986, the Prime Minister stated his interest in population issues. This led to the formation of a multidisciplinary task force of Sudanese professionals to develop recommendations for a national population policy. These recommendations were presented at the Third National Population Conference in mid-October 1987. The task force recommended the provision of family planning services and information for all Sudanese couples and the expansion of MCH programs, promotion of child survival and safe motherhood initiatives.

Although by world standards family planning in Sudan is low, the use of family planning has risen to an estimated 7% to 9%. Family planning is particularly low in rural Sudan. Demand is concentrated in the cities where contraceptive prevalence may now exceed 20%. Rapid urbanization also speeds the transformation of rural behavior. Therefore, meeting urban demand may be the most efficient and inexpensive way to provide for current needs.

Until the recent political support of family planning, no large scale public program had been implemented. Public and PVO programs provide contraceptives for about 15% of the current number of users. The larger donor effort, the UNFPA MCH/FP project, has trained health personnel at various levels throughout the country, but this has not been able to provide effective family planning service delivery.

The commercial private sector has been providing 80 to 90 percent of all oral contraceptives in Sudan. However, pharmaceutical distributors have difficulty obtaining foreign exchange to import oral contraceptives because they are not considered an essential drug by the GOS. As a result, supplies appear to be dwindling and prices rising. A substantial proportion of all contraceptives sold are brought in the country through the informal sector. Estimates indicate that there are more than 200,000 current users who obtain their supplies from the commercial private sector.

5. Malaria Control

The control of endemic diseases, malaria in particular, is the responsibility of the Division of Preventive and Social Medicine. Malaria agents, microscopists and other health personnel are trained in Sennar. Malaria control is carried out by personnel located at regional, provincial and district levels. They assist local councils and health authorities and conduct spraying and other malaria control activities. The current strategy is based on vector control by residual spraying, larval control and making chloroquine available at the different levels of health services. Presumptive treatment for all cases of fever is being done by CHWs. A five-year plan has been established but no specific targets have been set.

6. Acute Respiratory Infections

A national control program was designed and a policy statement issued by the Minister of Health on September 5, 1987. The program as designed emphasizes close collaboration with the other PHC departments, in particular, EPI and CDD, and the implementation of activities focusing on training, health education, continuous supply of essential drugs, evaluation and monitoring, supervision, and research and development.

7. Acquired Immune Deficiency (AIDS)

The government has confirmed 14 cases of AIDS and has held a national conference on this issue.

C. Current Progress and Constraints

The PHC program in the Sudan has been evaluated several times and the evaluations have revealed mixed results. Among the achievements: the PHC approach is better understood and accepted than previously; community awareness and involvement has improved; demand for services and extent of coverage is greater; and special disease control programs are beginning to recognize the need for preventive and promotive aspects of health care. In recent years, the PHC directorate has made progress in defining and implementing programs in the child survival interventions. National policies and plans for EPI, CDD, and ARI activities have been developed. Courses in PHC have been established at the University of Gezira, information concerning PHC activities has been integrated into the curriculum of midwives and, on request, the Management Development Center in Khartoum provides short-term courses in the planning of primary health care activities for regional personnel. Individual courses on EPI and CDD for personnel involved in those activities have also been conducted.

Sudan has recently signed an agreement with UNICEF for supporting the development of child survival activities for the years 1987-1991. The major emphasis of this support focuses on immunizations and control of diarrheal diseases based on an essential drug program. This plan states that the first priority for investment in the basic survival of infants will be through the immunization program. The program intends to concentrate rather than spread resources across a wide spectrum of projects. However, integration of all activities is stated as a policy that will be pursued.

These recent advances, in particular the acceleration of EPI activities, are not without their problems, and Sudan faces some significant constraints in the development of a comprehensive and sustainable PHC program.

1. Constraints

The constraints facing the achievement of attaining the goal of reducing the infant mortality rate from 140 to 120 per 1000 live births, as stated in the current draft of the four year plan, can be categorized into three general areas:

- o General Constraints
- o Institutional Constraints
- o Donor Constraints

a. General Constraints

The sheer size of Sudan, coupled with its lack of a basic transportation and communications infrastructure makes the delivery and supervision of any type of services difficult. Other constraints faced are:

- lack of adequate financial resources which affect the ability to provide the quantity and quality of health services needed;
- the war which has affected the ability to provide adequate health care services to the population living in the south and has contributed to an influx of displaced persons;
- ever increasing periods of drought; this has led to widespread famine which has resulted in massive amounts of relief assistance which, while well intended, has had a negative impact on the economic and social structure of the country and in the long run has not diminished the rates of malnutrition, nor other health problems;
- the departure of skilled personnel due to the poor salaries and working conditions;
- the increased urbanization caused by the above factors;
- the difficulties in providing care to the nomads, especially with the changes they have had to make in their lifestyles due to the drought and war.

b. Institutional Constraints

While the above mentioned constraints will remain for some time and are ones for which programs will have to be adjusted, the constraints mentioned in this category are those which are primarily affected by poor management and planning and, therefore, may be more amenable to change.

Among these are:

*** Regional versus Centralized Administration**

It is the opinion of the Minister of Health that the decentralization effort, undertaken in accordance with the regional government act of 1980, has resulted in the loss of all contact with the regional health authorities and in the inability to perform the functions of planning, implementation and evaluation of services. Budgeting and financial control of expenditures has also deteriorated. It was remarked, however, in the review of PHC conducted in January, 1987, that the weaknesses consequent to the decentralization process might not be due to the concept of its acts, but due to the implementation practices involved in it, including the role played by the MOH. Coordination is not clearly defined, and responsibilities are similarly not well defined, not only with regard to the regions but even within the Ministry of Health.

*** Organization of the Ministry of Health**

The MOH is subdivided into ten (10) general directorates of which the General Directorate for PHC appears to be the most powerful. This directorate houses the major CS activities and, therefore, is the recipient of major financial support from external donors. Some general directorates seem redundant (e.g., International Relations) or duplicative and could be merged (pharmacy and medical supplies, medical specialties and curative medicine). But, above all, an effective planning and monitoring body with the necessary authority and resources to integrate and coordinate the activities of the various services and to set global strategies, does not exist. An in-depth review of the MOH organigram should be encouraged which should hopefully lead to a better distribution of resources and responsibilities.

*** Drug Distribution and Supply**

The availability and supply of drugs to health centers, dispensaries, dressing stations and primary health care units, has been limited and very uneven. To some extent the limitations on the availability of drugs is due to the lack of hard currency and the restrictions that all drugs must be registered. Other factors affecting their availability are a poorly managed central supply depot, an inadequate and slow distribution system, and poor advanced planning on the part of health personnel.

*** Recurrent Costs**

At present, the government is having difficulty paying the salaries of its health personnel, and providing for fuel and the supply of medical and non-medical materials. To some extent local community groups have helped and small scale cost recovery schemes have been implemented. As the government's financial system does not look to improve in the near future, financial management of the meager resources that are available will have to be improved and a more systemized method of cost recovery will have to be initiated.

*** Information Systems**

Reliable and valid data on the health care status of the Sudanese is virtually non-existent. Where data exists, such as in nutrition, it is not being used to guide the development of food and nutrition programs. Without this vital information about disease trends and incidence, and service outputs or program effectiveness, it is almost impossible to plan and implement successful programs. While a nutrition surveillance program exists and EPI and ORT are developing their own information systems and have individually conducted surveys to assess coverage of vaccinations and knowledge of ORT use, this data is mainly fed back to each direction in charge of the activities. No overall disease surveillance and data collection system has been developed, albeit the existence of a central directorate for statistics. The data that is currently collected passes through many hands before it reaches the central level, and is often incomplete and filled with errors. A Demographic and Health Survey (DHS) conducted by IRD/Westinghouse is being planned. This survey should lead to more reliable information as to the health care status of the Sudanese.

*** Verticalization of PHC Programs**

Within the division of PHC no formalized mechanism for coordination between the various directors has been established. The result has been that each PHC program director has developed, mostly in isolation from the other directors, their own plans of operation and sets of activities. This has resulted in a verticalization of activities both within the directorate of PHC and at the regional and district levels. In a country where financial, human and material resources are scarce, each program needs to share their resources as much as possible with each other. This necessarily entails planning together to ensure that activities (i.e., supervision, drug distribution, data collection, training, social marketing, etc.) are done in coordination and not in conflict or duplication of each other as is now the case. This lack of integrated planning may give rise to a multitude of specialized people and a reinforcement of vertical programs much like those that existed for smallpox and measles.

*** Management**

Management capabilities seem to be developed primarily through a process of learning by doing and/or conventional methods. Currently, management and monitoring mechanisms do not exist at all levels, and for those that do, they are aimed at specific sub-activities (i.e., managing the cold chain, monitoring EPI performance). The management capacity is lacking in terms of how to: budget and allocate finances; distribute personnel; develop detailed program plans; make decisions which are based on a whole system and not one activity; write clear and focused job descriptions; create effective team cooperation; collect and analyze data for program planning; and coordinate donor and NGO activities in support of MOH programs.

c. Donor Constraints

Without their realizing it, donors may be affecting the ability of the country to absorb the programs that they are financing, to sustain them, and to integrate the externally funded projects and activities into their system. Large inputs of money into specific programs like EPI may be affecting the coordination of this activity with other PHC activities. Donors may also be affecting the priority areas that the government decides to emphasize. Providing salary incentives may in the long run prove more harmful than good. Finally, the lack of coordination between donors and NGO's, and donors and the MOH, leads to the creation of several systems within a system.

IV. CURRENT AID SUPPORT TO CHILD SURVIVAL

Over the recent past years, the USAID Mission in Sudan has actively endorsed the Child Survival strategy and embarked on several programs aimed at reducing childhood morbidity and mortality.

A. Current Strategy

The primary strategy of the Mission's health programs is to support the efforts of the GOS to achieve the high coverage goals for Child Survival Programs, particularly for those activities emphasising EPI and ORT. Support has been provided through the following:

- Initiation of policy dialogues with the GOS to develop a Child Survival strategy and to initiate two national CS programs for EPI and CDD.
- Active promotion of donor collaboration and coordination in order to marshal effective support to the GOS.
- Playing a leading role in promoting the development of cost-recovery mechanisms for health services.
- Supporting Child Survival activities both at the regional and national level, using various financing mechanisms and building on the expertise of NGOs, UNICEF and the local private sector.

B. The Rural Health Support Project (RHSP)

The initial project strategy focused on the improvement of PHC and MCH/FP services through the provision of selected training, planning, logistics and construction activities in the Kordofan, Darfur, and Southern Regions. Since its initial design in 1980, the disastrous effects of the 1983-1985 drought and the serious deterioration of the economic situation, has led the RHSP to reconsider its strategy and to concentrate its efforts on the following:

- development of an ORT program based on the training of CHWs in ORT and case management, community health education, and mobilization

- development of EPI programs supporting MOH efforts in Western and Southern Sudan
- development and strengthening of family planning through upgrading MCH/FP services
- increasing the availability of low-cost drugs by establishing Community Pharmacies; using revolving fund mechanisms; and improving drug procurement and transport capability
- improvement of the managerial capacity of local health personnel by providing training; assisting MOH supervision efforts; and developing appropriate methodologies
- supporting the training of TBAs
- improvement of water supply and sanitation
- promotion of health education of the public

Due to its wide range of activities the RHSP has gained valuable field experience in the provision of Child Survival services. This experience, if it is to be replicated or be of use in the development of national level activities, should be documented. This is particularly the case for MCH/FP activities, the development of cost-recovery schemes for drug supply and the integration of EPI and CDD into the existent PHC services. Because of AID's lengthy support to the development/strengthening of health activities in these three regions, it is appropriate to use these regions as sites for pilot testing new Child Survival activities and conducting operational research studies. Specific pilot/research activities which the RHSP is currently doing or considering are: testing the feasibility of cost-sharing and income generation schemes; monitoring of technical activities; training of management personnel; and developing a management information system aimed at increasing the local health authorities' capacity to manage efficiently their limited resources. This will provide valuable experience before the anticipated creation of a national information system based at the MOH.

C. The Health Constraints To Rural Production Project (HCRP)

This bilateral investment concentrates on the provision of services in the Gezira for the control of schistosomiasis. It is one component of the Blue Nile Project which has conducted a number of operational research activities and tested original strategies for the control of schistosomiasis and malaria. Gezira is the region of Sudan where malaria has been controlled most successfully. A subsequent reduction of the burden of the disease on childhood mortality and on the working capacity of adults has been noted.

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D. Family Planning

The Mission's current population strategy is to concentrate on the progressive extension of family planning services through private and public clinics. In support of this strategy, several programs have been generated in different fields:

- The Mission has been actively engaged in policy dialogue and supported the Sudanese population committee in the development of the Third National Population Conference in mid-October 1987. USAID is currently participating in the efforts to finalize the population policy and define the strategy. Both centrally funded support and the PPPS will contribute to the development of Family Planning activities now that central level political commitment has been given;
- Operational research and innovative models for the delivery of MCH/FP services have been conducted by Columbia University;
- Technical support has been provided to accelerate the analysis of the 1983 census and negotiations are underway for conducting an up-to-date demographic and health survey;
- Several local initiatives have been supported over the last years. The Sudan Fertility Control Association is operating three successful projects in Khartoum. The National Commodities Distribution Project is trying to establish a nationwide contraceptive distribution system. In Kordofan and Darfur the RHSP is considering initiating MCH/FP services which are being extended progressively;
- Taking advantage of the general acceptance of the MCH/FP clinics, further support will be provided to centrally funded and bilateral family planning projects. Based on the experience gained by the RHSP, FP clinic activities will be expanded nationally as part of the Population Policy Program Support Project (PPPS) scheduled for FY 1989. The National Commodity Distribution Project will receive continuing support.

E. Expanded Program on Immunization (EPI)

AID has committed 2 million US dollars to the UNICEF program for EPI for fiscal year 1987/88. Other AID-funded projects which support the implementation of EPI activities are: the Rural Health Support Project in selected areas of Kordofan and Darfur, and Equatoria in collaboration with AMREF; the Child Survival activities of CARE and Save the Children Federation in Northern Kordofan and Darfur and ADRA, which is just beginning its activities in the Central Region.

F. Control of Diarrheal Diseases

AID has provided the major source of financial support to this program through its local currency account. Part of the ~~2 million dollars~~ it has committed to UNICEF is to be used to support this program. Some of the first experiences in ORT have been provided through the RHSP. Collaboration with the Child Survival funded activities of CARE, Save the Children, ADRA and World Vision has contributed to the development of this program in the regions.

G. Nutrition

To date, the major emphasis of the Mission strategy has been on providing emergency feeding programs for those affected by the drought and the war. Three main areas of activities can be identified: supplementary feeding; surveillance and monitoring; and applied research.

1. Emergency feeding programs have been carried out mainly by NGOs benefiting from central grants and PL 480, or locally procured foods. As the situation improved, NGOs, through mission counterpart local currency funds, have progressively moved into activities more closely related to those carried out by the health services. For example, ADRA works closely with the MOH in providing supplementary feeding and nutrition education in 50 MOH clinics in Khartoum as part of other MCH activities.
2. In 1986 the nutrition surveillance program SERISS initiated four rounds of surveys which targeted approximately 15,000 households in the six northern regions. These surveys were conducted at quarterly intervals. Valuable base line data has been collected and analyzed at the MOH Nutrition Division. This data has been used in targeting food aid in 1986 at the close of the drought era. A national conference will be held in December to: review the analyzed results of the SERISS survey; to formulate a national nutrition policy; and to consider regional and district plans of action for nutrition services.
3. USAID also supports the Food Research Centre's efforts to develop and process a 40% sorghum enriched wheat bread in order to reduce Sudan's growing wheat import dependency. The first testing turned out quite successful. An infant weaning food based on local cereals is currently being developed. Private sector interest in its production and distribution is expected as the demand in urban settings is quite high.

Recently, two projects have been implemented to reduce vitamin A deficiency and to conduct applied research on its effect on mortality. Helen Keller will work in Darfur, and The Harvard Institute for International Development (HIID) will be in the Khartoum and Gezira Regions.

H. Child Survival and Health Care Financing

One of USAID/Sudan's main concerns has been the increase in recurrent costs caused by the initiation of new health programs and the maintenance of existing ones. Because of this concern, USAID has been engaged in promoting the development of cost-recovery mechanisms through pilot testing of income-generating activities. One of the mandates of RHSP has been to explore cost-recovery mechanisms. Although no large scheme for reimbursement or fee-for-service system has been developed, useful experience has been gained in creating community pharmacies in Kordofan in an attempt to improve the sustainability of the local drug supply.

Since August 1985, the Mission has pursued actively the issue of recurrent costs for Child Survival with the Minister of Health. The Minister expressed strong interest in working with USAID to expand cost-recovery/reimbursement mechanisms for those clients capable of paying. He was also inclined to appropriate a proportion of the overall revenue which might be generated by such a cost-recovery system to support child survival activities on a priority basis.

In 1987, a WHO/AID grant agreement was drafted supporting the development and implementation by WHO of a rehabilitation program in three health districts/areas in the Northern, Eastern and Central Regions of the Sudan, and the implementation of operations research studies on health financing issues. It was anticipated that at the end of Phase I of the project the following outputs would be completed: the implementation of an operational research program which evaluates the feasibility of introducing a series of self-help and health financing/reimbursement mechanisms; a systematic analysis of health care financing issues; an estimation of health facility expenditures; an analysis and estimation of personal health care expenditures for various socio-economic classes and ethnic groups; a determination of priority revenue generation services; plans and budgets for the rehabilitation of health services; and the development of mechanisms to improve the effectiveness of cost-recovery systems. A draft tripartite agreement was presented by WHO/EMRO. This draft did not satisfy project requirements of the Mission and was not accepted. It will be revised to take care of cost recovery issues and resubmitted to the Mission for consideration by January 1988.

Due to the need for further clarifications on the scope of work and the delay in the provision of a detailed plan of activities by WHO, the Mission postponed the FY 1987 obligation for these Child Survival funds and reprogrammed these US \$450,000 to the UNICEF Child Survival Project.

I. PVOs and Private Sector

Several American PVOs have played a major role in helping the Sudan's efforts to alleviate the dramatic effects of the 1983-85 drought. Initially involved in food relief programs in certain geographical areas, the PVO's have progressively provided more comprehensive health and nutrition services and placed increasing emphasis on rehabilitation and development. Centrally funded PVOs (CARE/SCF/WV) have focused more on Child Survival activities linking them with innovative cost-recovery approaches. ADRA implemented a large urban supplementary feeding program

in Khartoum and is now moving to the Northern Region. In Khartoum, pilot initiatives have been conducted in the field of MCH/FP.

The Mission intends to continue to support PVO projects which highlight program management and financial sustainability. In view of declining crop production in 1987, the prospect of famine in Ethiopia and food shortage in Western and Southern Sudan, it is anticipated that PVOs may continue to play an important role in the coming years.

V. OTHER DONOR ACTIVITIES

Numerous donors and NGO's are active in child survival in the Sudan. For the most part, the donor agencies recently have been channeling their funds through UNICEF. A brief description of the Child Survival activities of the major donors follows.

A. UNICEF

Over the past decade UNICEF has provided assistance in many child survival related areas. It has been, and continues to be, involved in: water projects; training of TBA's; provision of basic drugs; assisting children in difficult circumstances; educational teacher training; and the JNSP. UNICEF has also supported ADRA's activities in Juba.

UNICEF has developed a Child Survival Strategy Plan of Operations for 1987-1991. This ambitious plan comprises activities in EPI, CDD, Nutrition and many of the previously mentioned subjects. UNICEF's plan is estimated to cost 68 million dollars, of which 15.5 million will be provided by UNICEF and the rest (53.5 million) is expected to be financed by other international donors. The Italian government has committed/pledged a major part of this external assistance.

UNICEF is currently concentrating on channeling this assistance to EPI. They are supplying vehicles, vaccination materials and cold chain equipment, sponsoring training courses, and providing technical assistance in the areas of disease surveillance and monitoring, program planning and management, and social mobilization. They have provided funds for salary supplements to personnel involved in EPI. Some assistance has also been given to CDD in the form of ORS packets and advice on the local production of ORS. A summary of their program objectives is found in appendix IV.

B. WHO

WHO has been involved with MCH programs for the past ten years. It is currently providing some financial and technical support to EPI, CDD, and ARI. It is providing two technical assistants for cold chain management and maintenance. Along with the technical assistant it provides to work with the Director of CDD, WHO has allocated \$80,000 for FY 87/88 for training and applied research. It also supports the JNSP and the Blue Nile Project in Gezira.

Since the visit of the Director General of WHO, Dr. H. Mahler, WHO has been assisting the MOH to develop a list of rehabilitative needs for rural and urban health facilities. Over the past year and a half, WHO and the AID Mission have jointly explored with the Ministry of Health the possibility of conducting operational research on cost recovery/reimbursement mechanisms.

C. World Bank

The World Bank has drafted a health sector report; however, due to the bank's reorganization, this report has not been issued. In spite of this, the bank has decided to proceed directly to program planning. The first area the bank will focus on is collaborating with the MOH in the finalizing of their draft four year health plan. A team is to arrive in November to assist in this process. The bank is also interested in testing a pilot scheme for health care financing focusing on the macro issues and concentrating on the central level and in the development of family planning activities.

VI. RECOMMENDATIONS FOR CHILD SURVIVAL STRATEGY IN SUDAN

The following section contains recommendations for USAID's child survival strategy in the Sudan. The section begins with defining the three key elements on which the mission strategy is based and describes the four areas the mission will emphasize. Detailed recommendations for each of the child survival activities (i.e. immunizations, diarrheal diseases, nutrition, etc.) are presented in section B. The recommendations are presented in short and long-term strategies. The short-term strategies are those which should be initiated during the current funding period, that is, prior to FY 89. The long-term strategies are those which will commence after this period of time.

A. Priorities and Emphasis

Three key elements underpin the child survival strategy. These are:

- o Sustainability
- o Integration of services and institutionalization:
- o Management

Considering the current status of the program, present donor support, and USAID staffing, USAID will support:

- o Ongoing Child Survival projects managed by UNICEF;
- o Cost recovery and health care financing activities possibly managed by WHO;
- o Bilateral and centrally funded mission activities on child spacing/population planning; and
- o Ongoing AID central and bilateral funded health activities which address major child survival interventions.

It should be noted that management is and will continue to be an area whose development the mission will support in all of the above mentioned activities. Existing mission projects (eg. Rural Health Support Project and the Sudan Emergency and Recovery Information and Surveillance System), have placed a high priority on management development. Central and regional MOH personnel are being trained in planning, data analysis, budgeting and management of project activities. The mission strategy will continue along these lines for the promotion, development and strengthening of the management capacity of the health care system.

Finally, as other donors and NGOs support child survival activities, the mission will promote and encourage activities which lead towards close collaboration between donors and the development of complementarity between programs.

1. Continue Support to UNICEF

As is currently the case, UNICEF would continue to receive funding for child survival activities from USAID. However, the agreement with UNICEF would be rewritten to indicate that a certain proportion of committed funds have been set aside to support activities that emphasize development of managerial skills, encourage integration of services, and are cost effective.

Through the grant agreement that is written with UNICEF, USAID would ensure that its support is focused on:

- EPI and CDD, with possible future involvement in other Child Survival activities presented in UNICEF's Master Plan of Operations for 1987-1991.

While the current agreement is essentially a cash transfer providing, for the most part, commodity support, future agreements will focus on supporting activities of these two main interventions which will:

- Link together the different discrete child survival activities and enhance their complementarity: such as combining CDD and nutrition, both of which need strong educational components, social mobilization and social marketing activities; and development of a health information system.
- Promote the integration of EPI and CDD and other discrete CS activities into health care services, such as improving the management training of health personnel at all levels; establishing funding mechanisms promoting more regional participation and responsibility in the planning and implementation of programs.

- Lead to sustainable health services by exploring areas of possible private sector involvement ; by encouraging more community responsibility in support of child survival activities at the village level; and by reinforcing the drug distribution system through improved management.
- Emphasize the development of a Management Information System; linking the collection of information of health care and child survival activities to allow a comprehensive overview of problems and monitor the progress of programs. At the regional level, the RHSP has gained valuable experience which should be used in the development of a more global model.
- Supports management training activities of a wide range of health personnel in order to improve their capacity to plan, set targeting strategies, effectively implement programs and make the most of limited resources.

2. Supporting Cost Recovery/Health Care Financing activities through WHO

USAID/SUDAN intends to support WHO in developing a project that will study and test health care financing and cost recovery mechanisms. The results of such studies and pilot interventions are expected to provide guidelines for the development of a longer term project.

3. Child Spacing/Population Program Support

USAID is providing support to several ongoing centrally-funded projects which focus on family planning services delivery (see appendix VI). In addition to these projects AID will proceed in the development of the Population Program Support Project scheduled for FY 1989 which will emphasize the development of Child Spacing/Family Planning service delivery in the private sector.

4. Further support to on-going AID Projects

As shown in Appendix VI, USAID is currently funding or has plans to fund many projects which emphasize Child Survival Activities among these are: RHSP, SERISS, and other projects which address management training; Vitamin A deficiency; infant food development; and malaria.

B. Detailed Recommendations

1. Immunization

Immunization activities have been given full political support and along with CDD are the two areas of Primary Health Care (PHC) that the government is stressing and that have been very successful. EPI is viewed

by UNICEF as the main engine through which the national primary health care system will be indefinitely established. UNICEF intends to provide around \$30 million in support of this activity over the next five years. The specific objective of this program is to achieve 70% immunization coverage for infants below one year of age against diphtheria, pertussis, tetanus, polio and tuberculosis. Also, 70% of pregnant mothers will receive two doses of tetanus toxoid. However, few concrete plans or clearly defined strategies exist as to how this activity will be integrated into the other activities of PHC and how the government will be able to sustain it once the financial and technical support is withdrawn. As USAID is one of the major donors, it is critical that USAID ensure that its funds contribute to a sustainable less vertical program which will be integrated into the other components of PHC. Actions that USAID should take immediately are the following:

Short Term:

- Establish an interagency coordinating committee to jointly plan, budget, implement, monitor and evaluate tripartite CS programs. This committee would be able to identify a meaningful role that each agency can best play in supporting the National CS program. In this way USAID would be able to better determine the amount and type of resources they should provide in support of EPI.
- Identify programs for the mission to selectively "buy-in" to support activities that are of special interest and/or concern to the mission and which provide support to UNICEF activities (eg. HEALTHCOM).
 - Develop a list of performance based criteria against which to measure the impact of the use of AID funds by UNICEF and to determine the future amounts of monies that AID may provide to UNICEF. These criteria should emphasize sustainability of services and include: developing cost recovery mechanisms; involving more regional, provincial and rural personnel in the designing and implementing of activities; developing a system to ensure the continuation of training and refresher courses for all personnel; identifying and training responsible personnel at all levels in the maintenance of equipment; increasing social mobilization; and strengthening the management capabilities of personnel at all levels through attendance at training courses offered at Gezira University, the Management Development Center, or the Education Development Center at the University of Khartoum.

In the long term AID should concentrate on ensuring that the program will be sustainable by the government, will reflect its absorptive capacity and will be integrated into the other components of PHC. This can be done by:

Long term:

- Enhancing the absorptive capacity of the government by concentrating on operationalizing delivery strategies that are more cost-effective than the use of mobile teams; slowing down the pace of the program and focusing on improving the operations in areas where there is a major concentration of the target population;
- Focusing on the integration of the various child survival activities through defining a strategy for the integration of EPI at the various levels of health services; developing job descriptions that integrate EPI into the workers' activities; designing a comprehensive data collection system which contains information on all PHC activities; developing a comprehensive plan for social mobilization that bridges all PHC activities; implementing a PHC workshop for the purpose of bridging links between the divisions of PHC and with the regions through the discussion of each divisions progress and constraints.

2. Control of Diarrheal Diseases

WHO is the primary coordinating mechanism for external assistance to this program. USAID supports the program directly with local currency funds and may provide additional local currency funding directly to WHO or UNICEF. The specific targets of this program are to increase access to oral rehydration salts (ORS) by 60%, and ORS use to 40% by 1990. The dollar and local currency funding that the mission may provide to UNICEF/WHO might be used to support:

Short Term:

- The development of social mobilization activities aimed at reaching an audience in addition to health workers and clients such as pharmacists, physicians, school teachers, village and religious leaders etc.
- The creation of a data collection system linked with other child survival activities at the regional and central level.
- Operational research and developmental activities initiated by WHO or UNICEF such as: testing of the knowledge and practice of ORT by health workers and clients; surveillance and monitoring; and the development of a supervisory and management information system.

- Small studies on potential cost-recovery mechanisms. One type of research activity may be to test on a small scale a charge for ORS packets and the effect that various marketing strategies have on its use. This might be easily done through the RHSP and Save the Children.

Long term:

- Once current production of ORS has started review the mechanism of distributing it through the appropriate private sector channels and Peoples Pharmacies, in terms of how funds can be recovered not only for continued production but for other CDD related activities such as nutrition.
- Promote long term private sector involvement in the promotion and distribution of ORT.
- Achieve full integration of CDD activities in the PHC system.
- Provide assistance in the area of financial management. This will be critical if any cost recovery systems are established.
- Promote social marketing of ORT.
- Promote breastfeeding and proper nutritional feeding of children during and after episodes of diarrhea using the growth chart as a support tool.

3. Nutrition

To promote the expansion and the sustainability of nutrition activities in Sudan, there is an urgent need to strengthen the regional and central capacity to develop appropriate strategies and plans of action both in emergency and normal situations. It should be a joint exercise between the MOH, regional representatives, donors and NGOs who have gained considerable experience in this field, to develop a common set of targeted activities with replicable approaches aimed at being incorporated in a global national nutrition program. The GOS and the donors also need to have more nutrition information to be able to identify rapidly zones at risk and to enhance their planning capability for agriculture inputs.

The base-line data provided by SERISS will be used for policy development and for the planning and evaluation of nutrition activities. The mission's nutrition strategy will continue to emphasize intersectoral coordination in all nutrition activities.

a. Support of Nutrition Monitoring and Planning Activities

USAID will support the efforts to build Sudan's capacity to monitor the food and nutrition situation and develop its response capacity in an integrated way. Current efforts to create a National Food and Nutrition Council (NFNC) combining intersectoral expertise will be supported. SERISS nutrition surveillance would become part of it and should become a more early-warning and response oriented instrument for decision-makers with strong regional emphasis.

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Short term:

- Support GOS efforts to create NFNC. Technical support could be provided through IQC mechanisms to help define the global strategy, the responsibilities and the agenda of this new institution.
- Redefine SERISS objectives and refocus its activities and data collection system, giving more importance to regional data management and use for decision making.
- Support the initiation and establishment of growth monitoring in sentinel sites.

Long term:

- Initiate nutrition surveys by regional authorities for specific objectives, e.g. food aid targeting, and the monitoring of the nutritional status of under five children;
- Promote the development of regional plans of action to address major nutritional problems;
- Provide technical support in data management and resource assessment techniques (remote sensing, survey methods)
- Support the NFNC as coordinator of donors' food aid and relief programs.

b. Support of nutrition activities

The Nutrition Division at the MOH needs to be strengthened to become a strong technical advisory body, both to develop appropriate strategies and guidelines in emergency situations to advise the NFNC and in the development of integrated nutrition activities in Health services with special emphasis on PHC units and Health Centers. These activities should stress growth monitoring, breast feeding promotion, malnutrition management and nutrition education. Operational research should be part of regular nutrition activities.

Short term:

- AID will support the UNICEF strategy as described in their Child Survival Plan of Operations including more emergency oriented activities.
- Support on-going activities like vitamin A distribution and operational research, aimed at preventing blindness while emphasising the need of their rapid integration within the PHC activities.

Long term:

- Promote intersectoral coordination and integration of nutrition with other child survival activities in particular CDD, by developing global strategies, training courses and educational programs.
- c. Support the Food Research Center's efforts to develop weaning food, stressing the involvement of the private sector in processing and distribution.

4. Child Spacing

The Mission's primary population strategy is to concentrate on the progressive extension of family planning services through private and public clinics. Taking advantage of the general acceptance of the MCH/FP clinics, RHSP will expand FP clinic services in Darfur and Kordofan. Based on the experience gained by the RHSP, FP activities will be expanded nationally as part of a bilateral population project, the Population Policy Program Support (PPPS) scheduled for FY 1989. The National Commodity Distribution Project as well as the Model Family Planning Clinic will receive ongoing support. Until the PPPS starts, a short term strategy should concentrate in three areas:

Short term:

- Population Policy Support to the NPC: it is critical that efforts towards government approval for a national policy and plan of action be supported. Technical assistance could be provided by the OPTIONS Project and RAPID III which would also promote the creation of a formal structure for planning and coordinating population activities.
- Research, data collection and analysis: a National Demographic and Health Survey should be supported to provide badly needed data on fertility, maternal and child morbidity and mortality. This survey, conducted under the guidance of IRD/Westinghouse, should be done in the near future as it will provide the baseline data needed for the PPPS. Operation research is also planned. Particular attention should be given to testing the feasibility and cost implications of private sector factory-based family planning services.
- Support for private sector family planning service delivery: until the new private sector FP project includes them, continuing support will be provided to PVOs and other private FP services.

Long term:

- As a long term strategy, starting FY 89, with the PPPS project, AID will concentrate on private sector FP, including contraceptive social marketing through commercial channels, and support and improvement of managerial capacity of PVO's. The focus on private sector is dictated by the considerable AID

experience in this sector, the present ongoing activities in FP with NGOs, and the forthcoming large efforts of UNFPA and the World Bank to strengthen the Ministry of Health capacity in FP. Much emphasis will be put on developing cost-recovery mechanisms.

5. Child Survival and Health Care Financing

The overall goal of the Mission is to assist the GOS in integrating Child Survival activities within the existing health system and enhance its capacity to achieve cost recovery/reimbursement systems for health services and Child Survival. AID will assist the GOS in defining the appropriate strategy from which to build a sustainable health care financing system.

In order to achieve such long term goals, it is intended that the mission will support:

Short term:

- Efforts of the World Health Organization (WHO) to develop a project that will study, develop and test health care financing and cost recovery mechanisms. The project will be developed, in the coming months within the context of the GOS/WHO district health systems development project which emphasizes health systems management with special focus on community participation and resource mobilization, and intersectoral action.
- Conduct and test pilot activities in defined geographical areas taking advantage of past successful income generating activities. The Central Region cost-recovery initiatives could provide a promising source of innovative strategies. Similarly, the experience gained by the RHSP in community pharmacies should be used and could provide a starting point for further development.
- Support the national rehabilitation program of health facilities using local currency funds and take advantage of this opportunity to provide support to improve the effectiveness of their services. AID could provide technical and training assistance to improve the management and functioning of rehabilitated health facilities.
- Continue the ongoing policy dialogue and assist the GOS in creating a multisectoral task force to develop a policy and strategy. AID could initiate an in-depth review of the existing financial and administrative structures of the public health care financing system and explore the possible mechanisms to be developed for the institutionalization of a cost-recovery system at national and regional levels. Technical assistance should be provided and coordination with other donors, the World Bank in particular should be sought.

Long term:

This phase of operational research, pilot program testing, in-depth analysis of current and future cost recovery system development, which is expected to cover FY 88 and 89, could lead to long term technical and financial support to the GOS to build up appropriate national and regional strategies in health care financing which could ensure the sustainability of Child Survival services. This could generate a health sector financing project.

C. RECOMMENDATIONS FOR ADDITIONAL ACTIVITIES

Financial and staff support permitting, the following activities will receive consideration by USAID/Sudan for inclusion in their Child survival portfolio:

1. Malaria and Other Endemic Diseases

In order to decrease malaria related deaths in children, the control program needs to be strengthened in several ways. Baseline data on the impact of malaria on childhood morbidity and mortality are badly needed; the absence of a surveillance network hampers the development of a more reactive and flexible control strategy based at the PHC unit level. Apart from the area covered by the Blue Nile project, very little is done to reduce the endemicity of schistosomiasis.

Considering the lack of baseline information defining the magnitude of the problem and its major involvement in other sectors, the mission will not consider malaria as an area of major concentration although it will support:

Short term:

- Malaria control activities, in particular case management, done by PHW's within the UNICEF framework.
- Providing short term technical assistance to assess the importance of the malarial problem which could lead to the organization of a workshop aimed at defining new malaria control strategies.
- Selective operations research activities for the control of malaria and schistosomiasis.

2. Acute Respiratory Infections (ARI)

As this is one area of Child Survival that is in its developmental stages with no significant commitments on the part of other donors, USAID may wish to consider providing some support during the developmental stages of this activity.

3. Acquired Immune Deficiency Syndrome (AIDS)

The problem of AIDS in Sudan is currently being addressed through technical assistance provided by WHO. The mission will continue to offer assistance to the Ministry of Health through centrally funded project resources.

4. Management

As previously stated, management is viewed as an essential ingredient to improve the capacity of health care personnel to supervise and deliver Child Survival services and the Child Survival Strategy has emphasized this element. Many ongoing USAID/Sudan projects have focused on the development of management skills. The University of Gezira, with the assistance of Columbia University has developed short courses, training physicians in PHC services, one aspect being management. Management training is a main component to RHSP and this project has benefited from the courses offered by the Management Development Center (MDC) on several occasions. MDC recognizes the need to develop management courses for health personnel. Consequently, it has taken steps in this direction by sending one of their staff for PhD studies at Dublin University in Health Administration and Management.

In view of a growing awareness by the MOH and by the Ministry of Finance and Plan officials of the major importance of management training and the forthcoming opportunities for operational research and pilot testing activities in health financing, utilization of health services, planning of resources and personnel allocation, local expertise will be in demand in the short and long term.

Many operational research activities will be undertaken in particular in the area of health care financing. This is a necessary step to the development of cost-recovery mechanisms. It is essential that local expertise be developed in order to insure that research capacity will be available in the future.

UNICEF and others have recognized the development of management skills of health personnel as an important part of the build up of child survival services and because this field has not benefited from much support so far, AID has a unique opportunity to develop this needed service. This responds also to the AID concern to promote sustainable child survival services.

As a first step, a short term consultant should come to review the institutions and USAID projects which provide training in management in Sudan. The consultant should assess the capacity of these projects and institutions to meet the needs of the MOH.

A possible long term venture between selected Sudanese institutions with an American contractor could be promoted to assist in the development of management courses. Having this in-country capacity will enable the follow-up of previous course trainees and help to develop courses more targeted to local needs.

VII. STAFFING

The various options and recommendations that have been presented for the short and long term have been developed keeping in mind the current and future possible staffing patterns of the USAID/HPN office. Without a doubt increased staffing will be needed if any CS activities are to receive extensive financial support from AID/Washington. While the mechanism of channeling funds in support of CS activities through UNICEF has been developed for the purposes of coordination, continuity and relieving the administrative and management burden on an under staffed division makes sense, the lack of monitoring and accountability to date as to how these funds are being used is questionable. As the major theme of this strategy is one of sustainability, integration and absorption, to ensure that the finances USAID provides to UNICEF are used in such a way as to promote these objectives, it is recommended that the following configuration of staffing patterns in addition to that which already exists, be considered.

For AID administrative and reporting purposes it is advisable to have a person who is somewhat familiar with AID procedures and policies. AN IDI person might be most suitable to this job. This persons time could be divided between managing the AID requirement of both the RHSP project and the CS activities/ project. This would allow the acting HPN to pay more attention to the newly emerging activities in the population sector.

Consideration should also be given to placing a Technical Advisor for Child Survival (TACS) at the mission for the purposes of:

- overseeing the use of AID funds provided to UNICEF (i.e. that they are being used for the purposes detailed in a grant agreement);
- providing the necessary linkage between other AID funded projects which have CS components built into them (e.g., RHSP, PVO's);
- actively participating in technical committee meetings that are organized by the PHC directors;
- ensuring necessary follow-up to any short or medium term TA provided to UNICEF by AID;
- monitoring the development of AID's inputs in terms of both progress and process indicators;
- revising as necessary the UNICEF/USAID grant agreement based on the above results;
- coordinating AID CS activities with other donors; and
- monitoring operations research activities done under the auspices of child survival.

Finally, if a long term project in health care financing and management is to be developed and research activities in the areas of malaria and other endemic diseases are to be conducted, the above staffing will need to be supplemented by a Health Officer.

APPENDIX I: List of People Interviewed

APPENDIX I

PEOPLE INTERVIEWED

USAID:

Mr. Fredrick Gilbert, Deputy Director of Mission
Mr. Sid Chernenkoff, Economic Development Project Officer
Mr. Edward Birgells, Chief Project Officer
Dr. Anita Mackey, General Development Officer
Ms. Paula Bryan, Acting Health Officer
Dr. Ali Biely, Health Advisor
Ms. Lyn Keyes, Project Officer
Dr. Victor Barbiero, S&T/H/AID/Washington
Mr. Richard Margolius, FEWS Project

MINISTRY OF HEALTH:

Dr. Mohamd Y. El Awad, Under Secretary of Health
Dr. Abdul Hameed El Sayed, Director General PHC
Dr. Omer El Bagir, Director General Planning and Finance
Dr. Khiery Abdul Rahman, Director Statistics and Research
Dr. Awad Sir El Khatim, Director EPI
Dr. Magda M.A. Ali, Director CDD
Dr. Mohamad M. Baldo, Director MCH
Dr. Kamal A. Mohamad, Director Nutrition
Dr. Izz El Din Abdul Mutaleb Mukhtar, Dep. Director Nat. Malaria
Ms. Alawia El Amin, Deputy Director, Nutrition Division
Dr. Ahmad M.A. Arabi, D.G. Health National Capital Commission
Dr. Farouk Ahmed El Khitam, D.G. H. Services Khartoum North District
Dr. Huda Hassan, El Shabia Health Center

MINISTRY OF FINANCE AND PLAN:

Mr. Hassan Abdel Salam, Assistant Under Secretary for Services
Ms. Najwa El Gaddy, Head of Health Services Section

UNICEF:

Ms. Jane Campbell, Deputy Director
Dr. M. Mboro, Director Health Division

WHO:

Dr. Jamil Kahn, Country Representative

WORLD BANK:

Mr. Ibrahim Mohamad Ali, Program Officer

PRIVATE VOLUNTARY ORGANIZATIONS:

Mr. Stephen Wallace, Assistant Director, CARE
Mr. Edward Rasor, Director, Save the Children
Ms. Wendy Wakeman, Assistant Director, Save the Children

RURAL HEALTH SUPPORT PROJECT:

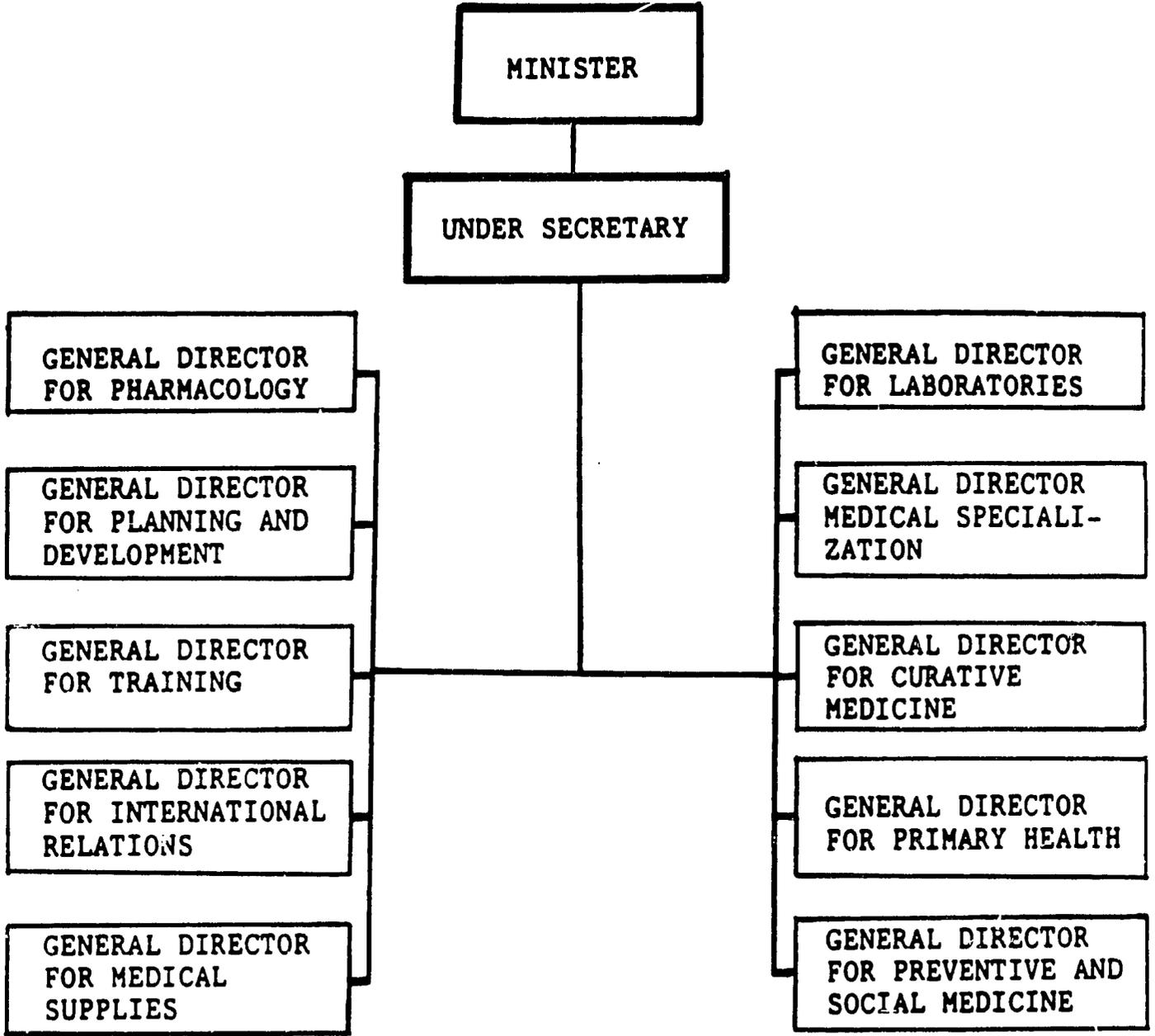
Mr. Jim Toliver, COP
Mr. Noel Brown, Project Manager El Obeid

MANAGEMENT DEVELOPMENT CENTRE:

Mr. Ali Musa, Director Health Administration and Management

APPENDIX II: MOH Organigram

MOH/SW ORGANIGRAM



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APPENDIX III: Bibliography

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- Save the Children Federation, Child Survival Program Annual Report. September 1987.
- CARE Sudan. Child Survival Project II Annual Report. October, 1987.

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APPENDIX IV: UNICEF Child Survival Objectives

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ARTICLE FOUR

4. PROGRAMME OBJECTIVES

- 4.1 The Government of Sudan seeks and strives for the progressive improvement of the quality of life and general welfare of all its citizens. High priority is given to the development of human resources.
- 4.2 Various national objectives have been set in different aspects of social welfare. Specific objectives addressed by this programme are:

To achieve 70 percent immunization coverage of all children below one year of age by 1989. The same rate of coverage of pregnant women with two doses of tetanus toxoid is to be achieved. A coverage rate of 90 percent for both infants and pregnant women is to be maintained from 1990 on.

To reduce the infant mortality rate below 80 per thousand live births and to reduce child mortality rate to less than 30 per thousand.

To reduce mortality due to diarrhoeal diseases by increasing the availability of oral rehydration salts to a level of 60 percent of the population by 1990. The actual utilization of oral rehydration salts will be increased to a level of 40 percent of all cases of severe diarrhoeal by that date.

To reduce incidence of diarrhoeal diseases by improving the supply of potable water, domestic sanitation and personal hygiene.

To reduce infant and child mortality due to malaria and acute respiratory diseases by improved diagnosis, case management and essential drug supply.

To improve the nutritional status of children by promoting household food security and sound feeding practices.

To control Vitamin A deficiency in children and anaemia in pregnant women, and reduce iodine deficiency by distributing dietary supplements.

To promote and improve the quality of education and incorporate child survival and development messages in school curricula.

To support the reunification of vagrant children with their families and promote training and apprenticeship programmes for them.

To encourage birth spacing through adequate information activities and ensure the largest possible participation of communities and strengthen in particular the awareness and motivation of women in relation to development and well being of their children.

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APPENDIX V: UNICEF/CS Budget

ACCELERATED CS/EPI BUDGET
Planned Requirements & Matching Donor Pledges/Contributions
(1987-1991)
(in US dollars)

<u>YEAR:</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>TOTAL</u>
<u>BUDGET:</u>	-	7,900,000	8,900,000	6,200,000	5,000,000	5,000,000	33,000,000
<u>DONORS:</u>							
Italy (FAI)	3,903,287*	2,750,000*	8,450,000	1,500,000	-	-	16,605,287
(Int'l Proc.)	(2,947,287)	(750,000)					
(Prog. Supp.)	(953,000)	(2,000,000)					
Canada (CIDA)	1,314,238*	1,036,956*	362,318*	253,623*	-	-	3,517,135
USAID**	-	1,042,000*	1,865,000	2,095,000	2,195,000	1,440,000	8,637,000
Live Aid	900,000*	-	-	-	-	-	900,000
Netherlands	204,554*	-	-	-	-	-	204,554
Italy Comm.	-	27,434*	-	-	-	-	27,434
Japan Comm.	-	29,761*	150,000	-	-	-	179,761
US Comm.	-	10,857*	-	-	-	-	10,857
SCF UK	-	408,163*	-	-	-	-	408,163
<u>TOTAL:***</u>	<u>6,824,079</u>	<u>5,355,171</u>	<u>10,827,318</u>	<u>3,848,623</u>	<u>2,195,000</u>	<u>1,440,000</u>	<u>30,490,191</u>

ADDITIONAL FUNDS REQUIRED: (2,509,809)

* Funds received (300 Form issued; agreement signed; or confirmed by telex).

** USAID contribution for EPI is part of total contribution to Child Survival (EPI, CDD & Social Mobilization).

*** Annual totals of donor contributions should not be compared to annual budget to determine annual balance; deficit in requirements since unspent funds are carried over to the following year.

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APPENDIX VI: USAID Health, Population & Nutrition Budget

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USAID/SUDAN
OFFICE OF HEALTH, POPULATION AND NUTRITION
BILATERAL PROJECTS
STATUS/JANUARY 1988

PROJECT TITLE	PROJECT NO.	CONTRACTOR (C) AND/OR GRANTEE(G)	FUNDING PERIOD		ESTIMATED LOP FUNDING	COMMENTS
			INITIAL	PACD		
Rural Health Support	650-0030		FY80	FY89	\$18,063,000	
Northern Component		One America, Inc. (C) Ministry of Health	FY80	FY88		One America and ANREF Contracts extended through March 31, 1988
Southern Component		ANREF (C) Ministry of Health	FY80	FY88		
Child Survival	650-0513	UNICEF (G)	FY87	FY88	\$ 2,000,000	
Health Constraints to Rural Production	650-0073	Ministry of Health/ Blue Nile Health Project (G)	FY82	FY4/88	\$ 2,122,000	PACD was extended only for completion of Commodity procurement.

Recently Terminated Projects with Outstanding Actions:

Model Family Planning Project	650-0063	Sudan Fertility Control Association (SFCA)	FY82	FY87	\$ 806,000	PACR to be completed; project terminated June 30, 1987. Deobligated amount: \$990,000. CONT audit found unauthorized construction using USAID funds; SFCS to be billed for repayment.
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BEST AVAILABLE DOCUMENT

USAID/SUDAN
OFFICE OF HEALTH, POPULATION AND NUTRITION
BILATERAL PROJECTS
STATUS/JANUARY 1988

PROJECT TITLE	PROJECT NO.	CONTRACTOR (C) AND/OR GRANTEE(G)	FUNDING PERIOD INITIAL PACD	ESTIMATED LOP FUNDING	COMMENTS
<u>PROJECT DEVELOPMENT</u>					
Child Survival	650-0084	UNICEF	FY88	\$16,000,000	Grant Agreement to be negotiated by April 1988
Health Care Financing/ Cost Recovery	650-0088	WHO	FY88	\$12,000,000	
Population Policy Program Support	650-0085		FY89	\$ 6,000,000	PID Development scheduled for June 1988
Management/Hospital Administration Training Program with Khartoum Teaching Hospital & University Gezira Faculty of Medicine					Proposal received from Columbia University; \$35,000 PD&S Health Funds reserved; Action Memorandum being prepared.
Infant Food Development/ Commercial Production					Feasibility Study/Project Design scheduled for February/March 1988

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BEST AVAILABLE DOCUMENT

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USAID/SUDAN CENTRALLY FUNDED
POPULATION PROJECTS
STATUS/ACTIVE JANUARY 1988

PROJECT TITLE	PROJECT NO.	INTERMEDIARY (I) AND/OR GRANTEE(G) INITIAL PACD	FUNDING PERIOD FUNDING	ESTIMATED LOP	COMMENTS	
<u>POPULATION POLICY DEVELOPMENT (ST/POP/PDD)</u>						
Options for Population Policy (OPTIONS)	936-3035.03	(I) The Futures Group. (G) National Population Committee	FY87	FY89	\$381,900 LS. 260,915 PD&S \$6000	Mission to buy in to OPTIONS, US\$100,000. for 1988 policy development activities
RAPID III		(I) The Futures Group. (G) National Population Committee	FY88	FY89		
<u>RESEARCH (ST/POP/R)</u>						
Paramedic Insertion of IUDS	936-3030	(I) Columbia University (G) Ministry of Health National MCH/FP Project.	FY86	FY88	\$ 30,000	Co-funded with UNFPA; extended through December 31, 1988.
Follow-up Survey; Community Based Family Health Project		(I) Columbia University (G) University of Khartoum	FY88	FY88	\$ 25,000	Initiated in October 1987, with PACD of March 31, 1988. To assess continuing impact of past interventions, especially family planning and ORT use.
Columbia University Resident Advisor for Operations Research	932-0632	(I) Columbia University (G) University of Khartoum	FY80	FY 88	\$250,000	Continuation of full time position beyond 3/88 dependent upon initiation of new operations research activity; beyond 3/88, 25 % of RA's time anticipated for IUD project.
Demographic and Health Survey (DHS)		(I) Institute for Resource Development Inc., Westinghouse (G) Ministry of Finance and Economic Planning; Ministry of Health	FY88	FY89		Agreement to be signed in January 1988.

BEST AVAILABLE DOCUMENT

PROJECT TITLE	PROJECT NO.	INTERMEDIARY (I) AND/OR GRANTEE(G) INITIAL PACD	FUNDING PERIOD FUNDING	ESTIMATED LOP	COMMENTS	
<u>FAMILY PLANNING SERVICE DELIVERY (ST/POP/FPSD)</u>						
National Commodities Distribution Project	932-0955	(I) Family Planning International Assistance (FPIA) (G) Ministry of Health National MCH/FP Project.	FY84	FY89	\$900,000	To strengthen commodity distribution systems, will expand from 6 to 10 Provinces.
Haj Yousif Clinic	932-0955	(I) Family Planning International Assistance (FPIA) (G) Sudan Fertility Control Association (SFCA)	FY82	FY88	\$240,00	Evaluated March 1987; extension through July 1988; increasing emphasis on family planning, through CBD activities, establishment of depot holder sites, and IEC campaign.
Voluntary Surgical Contraception: Information, Education, and Service Delivery	932-0968	(I) Association for Voluntary Surgical Contraception (AVSC) (G) Sudan Fertility Control Association (SFCA) -Omdurman Maternity Hospital	FY77	FY88	\$550,000	PACD extended by AID/W to February 29, 1988, due to delays in clinic renovation.
<u>PROPOSED NEW PROJECT ACTIVITY (PLANNED/UNDER CONSIDERATION)</u>						
Family Planning Service Delivery Projects		(I) Centre for Development and Population Activities (CEDPA)				Workshop for proposal development scheduled for March 1988

DOC. NO.16401

USAID/SUDAN CENTRALLY FUNDED
 FVA/PVO/CHILD SURVIVAL
 STATUS/JANUARY 1988

PROJECT TITLE	PROJECT NO.	INTERMEDIARY (I) AND/OR GRANTEE (G)	FUNDING PERIOD INITIAL	PACD	PVO IOP FUNDING	FY-87 OBLIGATIONS	FY-88 OBLIGATIONS	FY-89 OBLIGATIONS
Maternal and Child Health(MCH)/ Supplementary Feeding PL480- Title II	904-0006	Adventist Development and Relief Agency (ADRA) (I) National Capital Commission, Khartoum (G)	8/84	6/88	\$1,847,000	\$299,706	\$199,804	
Child Survival Project	650-0513-1	World Vision Relief Organisation (WVRO)	9/86	8/89	\$350,000	134,000	\$108,000	\$108,000
North Kordofan Child Health Project (NKCHP)	650-0513-2	CARE	9/86	8/89	\$699,802	\$327,000	\$336,000	\$333,000
Child Survival "Protecting the Life and Health of Children through Family Training: Un Ruwaba District"	650-0513-3	Save the Children Federation (SCF/US)	9/86	8/89	\$480,240	134,310	\$249,670	\$ 96,260

DOC. NO.1640I

USAID/SUDAN
HEALTH, POPULATION AND NUTRITION
LOCAL CURRENCY FUNDED PROJECTS
JANUARY 1988

PROJECT TITLE	PROJECT NO.	INTERMEDIARY (I) AND/OR GRANTEE(G)	FUNDING PERIOD INITIAL	PACD	ESTIMATED LOP FUNDING LS	COMMENTS
National Population Committee	650-3001	(G) National Population Committee	7/87	12/87	260,915	Population Policy Developer
University of Gezira Training Programme	650-3002	(G) University of Gezira, Faculty of Medicine		12/31/90	3,924,073	LOP funding increase anticipated due to underbudgeting
Sudan Emergency and Recovery Information and Surveillance System (SERISS)	650-9009	(G) Ministry of Health, Department of Nutrition	11/15/85	12/89	3,950,000	No cost extension approved to continue through December
National Control of Diarrhoeal Disease Project	650-8060	(G) MOH/Department of National CDD Programme	06/86	06/92	13,902,650	Title I
Makel Family Planning Project		(G) Sudan Fertility Control Association (SFCA)	06/87	06/89	967,400	
Hospital Rehabilitation		(G) Ministry of Health				Mission has given tentative approval for the rehabilitation of 5 facilities.
<u>Local Currency Components of Bilateral Projects</u>						
Health Constraints to Rural Production Project	650-0073	Ministry of Health (MOH), Blue Nile Health Project (BNHP)		06/90	4,368,125 484,000	CIP + Title I Trust Funds
Rural Health Support Project	650-0030	Ministry of Health (MOH), Department of Primary Health Care (PHC)		12/89	9,400,300 8,328,400	Title III, PL480 Trust Funds

USAID/SUDAN
HEALTH, POPULATION AND NUTRITION
LOCAL CURRENCY FUNDED PROJECTS
JANUARY 1988

PROJECT TITLE	PROJECT NO.	INTERMEDIARY (I) AND/OR GRANTEE(G)	FUNDING PERIOD INITIAL	PACD	ESTIMATED LOP FUNDING LS	COMMENTS
Child Survival		UNICEF			1,600,000	LS 1.6 Million in Trust Funds requested from MOFEP; Mission requires a plan from UNICEF prior to release of any funds
<u>Local Currency Component of Centrally Funded Projects</u>						
Maternal and Child Health Supplementary Feeding	904-0006	Adventist Development and Relief Agency (ADRA) National Capital Commission, Khartoum	FY85	6/88	1,595,500	Trust Funds
<u>LOCAL CURRENCY PROJECTS - PROPOSED</u>						
World Bank Project Preparation Facility						Mission awaiting revised proposal
Demographic and Health Survey (DHS)						Sudan is the last country in DHS series; local currency is to be requested by the Department of Statistics, MOFEP, to implement survey

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USAID/SUDAN
CENTRALLY FUNDED PROJECTS
ST/OFFICE OF THE SCIENCE ADVISOR
STATUS/JANUARY 1988

PROJECT TITLE	PROJECT NO.	INTERMEDIARY (I) AND/OR GRANTEE(G)	FUNDING PERIOD		ESTIMATED LOP	COMMENTS
			INITIAL	PACD	FUNDING	
Is Resistance to <u>P. falciparum</u> Malaria in Sickle-cell Trait Carriers due to Acquisition of an Enhanced Immune Response?		Faculty of Medicine/University of Khartoum Principal Investigator: Dr. Riyad Bayoumi				Mission awaiting information from AID/W to prepare the contract.

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USAID/SUDAN
CENTRALLY FUNDED PROJECTS
ST/NUTRITION
STATUS JANUARY 1988

PROJECT TITLE	PROJECT NO.	INTERMEDIARY (I) AND/OR GRANTEE(G)	FUNDING PERIOD INITIAL PACD	ESTIMATED LOP FUNDING	COMMENTS
Nutritional Blindness Prevention Program	Grant No. Dan-0045-G- SS-6011-00	Helen Keller International (HKI)	9/86 8/88	\$474,656	
Vitamin A Program Support		Harvard Institute for International Development (I) Ministry of Health, Department of Nutrition (Implementing Institution).	12/87 11/89	\$731,824	

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APPENDIX VII: Map of Sudan



ARAB REPUBLIC OF EGYPT

LIBYA

RED SEA

NORTHERN

RED SEA

NORTHERN

PORT SUDAN

CHAD

NORTHERN DARFUR

DONGOLA

BERBER

TOBAR

Ert Othbi

Kanma

Albara

AD DAMER

NORTHERN

Omdurman

KHARTOUM

EASTERN

DARFOUR

KORDOFAN

Shendi

Daghren

KASSALA

Kutum

Sadir

EL HASANEISA

Shiwak

GENEINA

EL FASHER

ED DNEIM

EL GEDAREF

Zalingei

NYALA

EL OBEID

CENTRAL

SOUTHERN DARFUR

EN NAHUD

Kosti

Sennar

Um Haraz

Um Haraz

Babanusa

Dilling

ED DAMAZIN

SOUTHERN DARFUR

KADUGLI

Tatodi

UPPER

NILE

ETHIOPIA

BAHR EL

WESTERN

EASTERN

UPPER

NILE

GHAZAL

EL

UPPER

NILE

RAQA

BUHEYRAT

NILE

NILE

CENTRAL AFRICAN REPUBLIC

WESTERN

EASTERN

UPPER

NILE

GHAZAL

EL

UPPER

NILE

RAQA

BUHEYRAT

NILE

NILE

W. EQUATORIA

EQUATORIA

EASTERN

EQUATORIA

YAMBO

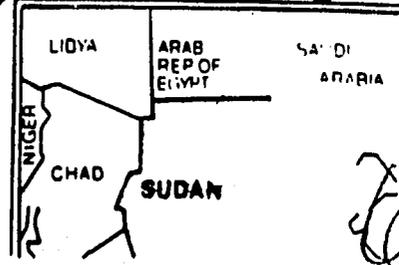
MUR

JUBA

KAPOETA

- Paved Roads
- - Secondary Roads, Unsurfaced
- Railways
- Rivers
- ✈ Airports
- Regional Boundaries
- - Provincial Boundaries

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