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A Proposed Methodology  
for Testing Nutritional Surveillance  
in South Kordofan Province  
of the Democratic Republic of Sudan

Consultancy Report  
December 8 - December 30, 1981

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Finally, with the help of Suzan Wesley and Ihsan Mustafa, two very competent nutrition professionals, my work in the Sudan went smoothly. To them I owe special thanks.

## Recommendations

1. Community Health Workers should be responsible for carrying out nutritional surveillance at the village level.
2. A pilot training program should be set up for ten Community Health Workers in South Kordofan Province for six months of data collection, reporting, and analysis.
3. Coordination for training at the national level should include:  
a representative from UNICEF; a representative from the Nutrition Division of the Ministry of Health; and a representative from the Department of Rural Health and Primary Health Care.
4. Coordination at the provincial level should be the responsibility of the Director of Medical Services.
5. Training in surveillance should also include additional orientation in weaning foods and oral rehydration.
6. Village mid-wives and Traditional Birth Attendants should work closely with the Community Health Workers to provide information on date of delivery, food habits during pregnancy and the post-partum period, length of breastfeeding, and infant feeding practices.
7. Scales should be tested for durability before accepting their use nationally. A fiberglass tape for measuring arm circumference should be the basis of anthropometric measurements.
8. Nutritional surveillance should be made an integral part of the initial training for all Community Health Workers.

UNICEF, in coordination with the Ministry of Health, is providing assistance for the development and testing of a methodology to be used by Community Health Workers to monitor nutritional status of infants and children from 0-5 years and provide appropriate nutrition education for the mothers. The methodology should be both low cost and utilize a low level of technology.

The Government of Sudan has announced a national health policy for the period 1977-78 to 1983-84. One of its objectives is to "cover the population with primary health care, especially in rural areas, through rural health units (rural hospitals, health centers, dispensaries, and primary health care units." There are currently 2200 Community Health Workers in the field, each responsible for about 4000 people. According to the Deputy Director of the Department of Rural Health Services and Primary Health Care, by the year 2,000 the goal is to train 33,000 Community Health Workers. Primary health care services as a program includes:

1. Health information and Hygiene Habits
2. Childhood immunization
3. Services to reduce protein-energy malnutrition
4. Services to reduce gastroenteritis
5. Tuberculosis Control/Prevention
6. Sleeping Sickness (trypanosomiasis) control- Southern Region
7. Kala Azar (visceral Leishmaniasis) control/prevention. (see Appendix 1).

According to a 1978 report from a FAO/WHO Mission on Food and Nutrition in the Sudan, a recommendation was made that "nutritional surveillance of children be made an integral part of the structure of the primary health care program in collaboration with the provincial nutrition units. This surveillance system must be simple, and it must be used."

Based on the above background information, consulting services were requested

1. Design and implement a nutritional status survey in South Kordofan Province

2. Define a low cost village surveillance methodology for monitoring nutritional status of under-fives
3. Test the methodology in sample villages
4. Prepare a report defining the methodology, equipment needs, and training recommendations for village health workers.

## NUTRITIONAL STATUS SURVEY

### Selection of Sites

The government of Sudan and UNICEF are collaborating in an effort to provide assistance and training in an integrated development approach to problems involving water, education, health, nutrition and agriculture. The program is called Zonal Development and is based in the town of Kadugli in South Kordofan Province. (See Figure 1 and 2).

Dr. Abdel Rahman Kintibai is the Director of Medical Services of South Kordofa and selected two villages in this province in which to carry out a Nutritional Status Survey and to test nutrition surveillance: El Kweik and El Efin. The purpose of this survey was to identify the person in the village most capable of carrying out nutrition surveillance and monitoring, to collect data which would require both interviewing as well as measuring, to record the data in an orderly fashion, and to interpret it.

A meeting was held with the Community Health Worker (CHW) of each village. Two nutritionists, Suzan Wesley and Ihsan Mustafa served as interpreters. The Community Health Workers, who had a general education from their villages, had been trained for nine months at the Kadugli training center. Before collecting data we wanted to see how knowledgeable they were regarding infant morbidity, infant mortality, weaning food practices, infant feeding practices during periods of infection, and availability of food supplies in their individual villages.

We collected data the first day, both indirect and direct indicators of nutritional status, while the CHW observed us.

The second day of data collection was done by the CHW and we verified his performance in measuring weight and arm circumference. There was no available registration of families in the villages, although a census is to be carried out by the National Department of Statistics.

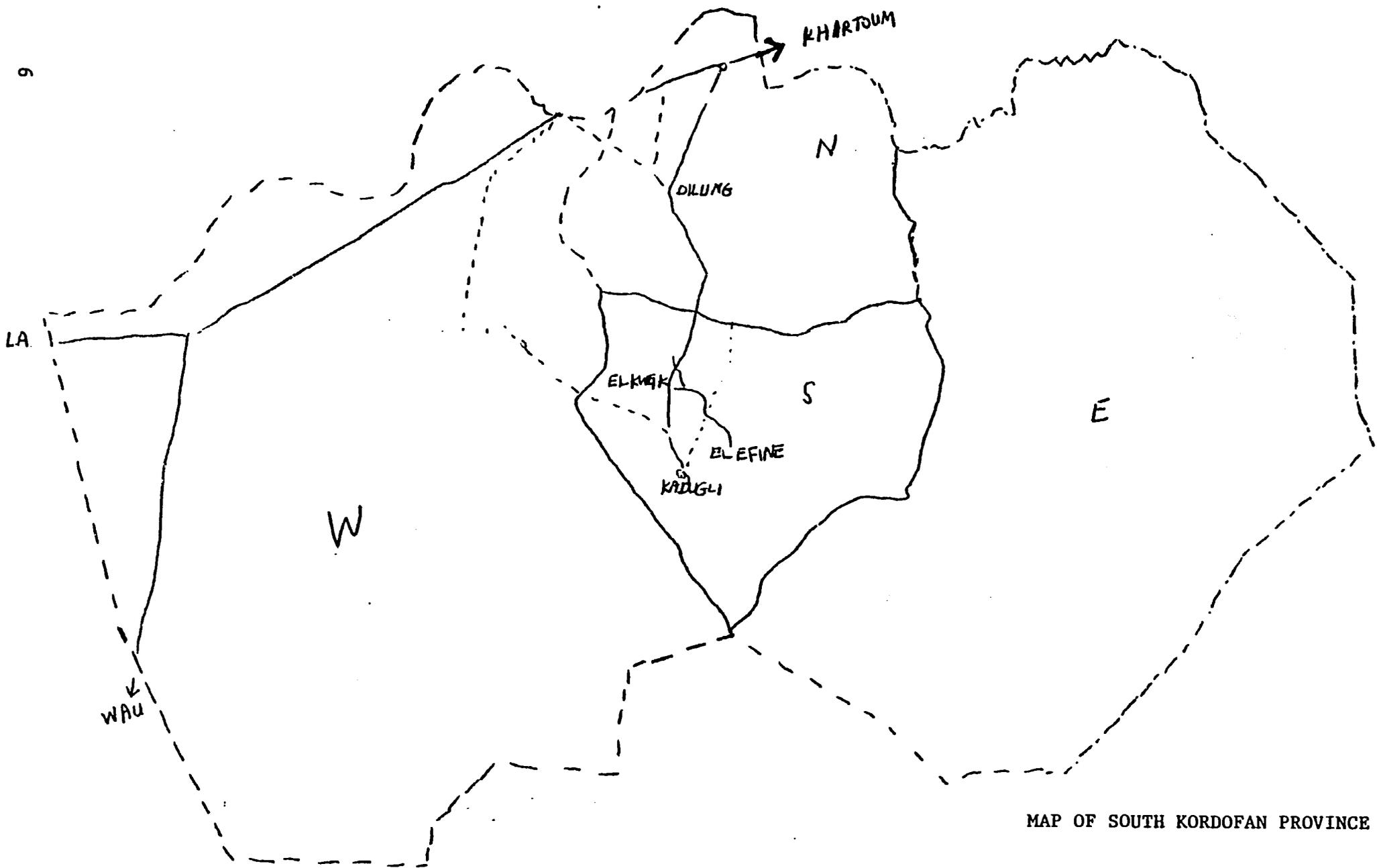


Figure 2 ...

MAP OF SOUTH KORDOFAN PROVINCE

Kadugli: 50,000 inhabitants

### Selection of Sample

Two criteria were used in selecting households:

1. the family had to have at least one child under five.
2. there had to be an approximately equal number of Arab and Nuba families.

### Methods

To avoid possible error due to lack of calibration by the CHW we weighed both mother and child on a bathroom scale and then subtracted the weight of the mother to record the child's weight. Mid upper arm circumference was measured on all children 0 - 5. A non-stretchable fiberglass metric tape was used for measurement. A Shakir colored tape was also applied, but broke on several occasions.

### Classification of Nutritional Status

The reference standards of weight-for-age were drawn from the norms of the National Child Health Statistics/Center for Disease Control (NCHS/CDC), Atlanta, Georgia. The cut-off points to differentiate the malnourished child from the nourished child are values at the 5th percentile or approximately 80% of the standard. Mid upper arm circumference reference standards were taken as 80% of standard (sexes combined) based on tables in D.B. Jelliffe's "The Assessment of the Nutritional Status of the Community" (WHO Geneva, 1966).

### Anthropometric Results:

If 80% of standard of weight-for-age is considered the cut-off point for defining malnutrition, the data indicate that in the first year of life among the village children in both El Kweik and El Efin. nutritional status is satisfactory, although sample size is too small to make any strong generalizations. The Nuba infants in both villages show a slightly better nutritional status. Since sampling was not random, we may have interviewed a cluster of families in which there was a prevalent infection among the Arabs. In both villages, the number of Arab malnourished children significantly exceeded the number of Nuba malnourished children. (Table 5 and 6).

TABLE 1

MEAN WEIGHT OF EL KWEIK CHILDREN, December, 1981

ARAB			NUBA		COMBINED	
<u>AGE</u>	<u>N</u>	<u>Mean</u>	<u>N</u>	<u>Mean</u>	<u>N</u>	<u>Mean</u>
0-12	3	6 kg.	6	7.8 kg.	9	7.2 kg.
13-24	3	8.8	0	0	3	8.8
25-36	2	9.5	4	10.1	6	9.9
37-48	3	11.2	0	0	3	11.2
49-60	0	0	1	12	1	12.0

TABLE 2

MEAN WEIGHT AS PERCENT OF NCHS/CDC STANDARD WEIGHT/AGE  
December, 1981

0-12	3	76.7%	6	94.7%	9	89%
13-24	3	80.0%	0	0	3	80%
25-36	2	70.0%	4	70.5%	6	70%
37-48	3	73.7%	0	0	3	74%
49-60	0	0	1	67.0%	1	67%

MEAN WEIGHT OF EL EFIN CHILDREN

December, 1981

<u>AGE</u>	<u>ARAB</u>		<u>NUBA</u>		<u>COMBINED</u>	
	<u>N</u>	<u>Mean</u>	<u>N</u>	<u>Mean</u>	<u>N</u>	<u>Mean</u>
0-12	4	6.1 kg.	4	8.5 kg.	8	7.3 kg.
13-24	3	8.2	2	8.5	5	8.3
25-36	3	10.0	4	11.3	7	10.7
37-48	2	12.0	2	13.3	4	12.7
49-60	1	13.5	1	15.0	2	14.3

TABLE 4

MEAN WEIGHT AS PERCENT OF NCHS/CDC  
STANDARD WEIGHT/AGE

0-12	4	83.3%	4	99.3%	8	91.3%
13-24	3	77.0%	2	77.0%	4	77.0%
25-36	3	71.7%	4	83.3%	7	78.3%
37-48	2	77.5%	2	83.0%	4	80.3%
49-60	1	94.0%	1	87.0%	2	90.5%

FREQUENCY OF NORMAL MALNOURISHED CHILDREN AS PERCENTAGE  
WEIGHT/AGE

El Efin, December, 1981

	<u>ARAB</u>			<u>NUBA</u>			<u>COMBINED</u>		
	<u>N</u>	<u>Nor.</u>	<u>Mal.</u>	<u>N</u>	<u>Nor.</u>	<u>Mal.</u>	<u>N.</u>	<u>Nor.</u>	<u>Mal.</u>
0-12	4	4	0	4	4	0	8	8	0
13-24	3	2	1	2	1	1	5	3	2
25-36	3	0	3	4	2	2	7	2	5
37-48	2	0	2	2	1	1	4	1	3
49-60	1	1	0	1	1	0	2	2	0
Total	13	7	6	13	9	4	26	16	10

% malnourished = 46%    % malnourished = 31%    % malnourished = 38%

TABLE 6

FREQUENCY OF NORMAL/MALNOURISHED CHILDREN AS PERCENTAGE  
WEIGHT/AGE

El Kweik, December, 1981

	<u>ARAB</u>			<u>NUBA</u>			<u>COMBINED</u>		
	<u>N</u>	<u>Nor.</u>	<u>Mal.</u>	<u>N</u>	<u>Nor.</u>	<u>Mal.</u>	<u>N.</u>	<u>Nor.</u>	<u>Mal.</u>
0-12	3	1	2	6	4	2	9	5	4
13-24	3	2	1	0	0	0	3	2	1
25-36	2	0	2	4	2	2	6	2	4
37-48	3	0	3	0	0	0	3	0	3
49-60	0	0	0	1	0	1	1	0	1
Total	11	3	8	11	6	5	22	9	13

% malnourished = 73%    % mainourished = 45%    % malnourished = 59%

INFANT FEEDING PRACTICES El Kweik and El Efina, December 1981DURATION OF BREASTFEEDING

	<u>Arab</u> (N=17)	<u>Nuba</u> (N=19)
0-6 months . . . . .	0	0
7-12 months . . . . .	0	0
13-24 months . . . . .	.15 (88%)	14 (74%)
25-36 months . . . . .	.2 (12%)	5 (26%)

TABLE 8

AGE OF INTRODUCING SUPPLEMENT

0-4 months . . . . .	6 (35%)	5 (26%)
5-6 months . . . . .	.5 (29%)	6 (32%)
7-9 months . . . . .	.3 (18%)	6 (32%)
10-12 months . . . . .	3 (18%)	2 (11%)

TABLE 9

MOST COMMON WEANING FOODS IN ORDER OF FREQUENCY

<u>ARAB</u>	<u>NUBA</u>
1. Goat's milk	1. Porridge made from "dura" (sorghum)
2. Porridge made from "dura"	2. Goat's milk
3. Starch from "dura"	3. Starch from "dura"
4. Rice	4. Rice, biscuits and lemon juice
5. Stew (the family pot), lemon juice and biscuits	

Combining the frequency of malnutrition between ethnic groups, the village of El Elfine had 38% of the children malnourished while the rate was 59% for El Kweik. These figures compare favorably with a study by Shazali, Ahmed, and Karrib done in Karaiba Village, 1975 in which 71% of the children showed various degrees of malnutrition.

#### Infant Feeding Practices

The duration of breast-feeding (Table 7) was at least 1 year for 100% of the sampled mothers, Nuba and Arab, in both villages. However, supplements had been introduced in the first six months of life by 64% of the Arab women and 58% of the Nuba women. (Table 8). There was no infant formula or bottle-feeding in either El Kweik or El Efin. The most common weaning foods introduced were goats' milk and a sorghum (dura) porridge. (Table 9)

The majority of the children are totally weaned from the breast during the second year of life. One finds a drop in nutritional status after 12 months of life in the village of El Efin and among the Nuba in El Kweik.\* The promotion of locally available weaning foods would appear to be a key intervention in reducing the incidence of malnutrition during the second year of life. It is the custom to physically separate the infants from their mothers at weaning and give them to their maternal grandmothers.

According to Shazali (1979), the most common reason for weaning is a new pregnancy. Most mothers believe that the milk of a pregnant mother is harmful to children. In the study on "The Married Women of Northern Sudan" (A.G.T. Carter, July, 1981) the overall average of full breast-feeding was 6 months (the sample included 3115 women.) There was no statistically significant difference in average length of full breast-feeding when the data were disaggregated by rural/urban residences and type of education.

\* See Tables 2 and 4.

### Pregnancy Histories

Reproductive histories were based on a sample of 36 women most of whom are still in the child-bearing age, since they all had children under five. The numbers of living children are probably accurate. However, the questions relating to miscarriages or abortions are of low general validity because of small sample size and difficulty in drawing out retrospective information.

In the World Fertility Survey, the average number of children born to women in the Sudan sub-sample, which included women of child-bearing age, was 4.2. They can be expected to have about 6 children in all. (A.T.G. Carter, 1981). Our village data (Table 10) reflect this trend. The average number of children born alive was 4.7 among Arab women and 5.6 among Nuba women.

PREGNANCY HISTORIES El Kweik and El Efine, December, 1981

		<u>ARAB (N=17)</u>	
		<u>Mean</u>	<u>Range</u>
Total Pregnancies	80	4.7	1-8
No. of Living Children	64	3.8	1-7
No. of Children Died	15	0.9	0-3
No. of abortions*	1		0-1
		<u>NUBA (N=19)</u>	
Total Pregnancies	107	5.6	1-10
No. of Living Children	86	4.5	1-9
No. of Children Died	20	1.1	0-4
No. of abortions*	1		0-1

\*Number of spontaneous abortions are most likely under-reported due to the difficulty in memory of the mothers.

## Design of Nutritional Surveillance System

### Calendar of Events

Exact age estimation is necessary in the utilization of anthropometric techniques on young children, especially where protein-energy malnutrition is most common.

In our village surveys mothers did not know the ages of their children. A locally relevant "Calendar of Events" (Figure 3) should be constructed by the Community Health Worker for his specific village. Because of regional differences in cropping patterns, each CHW will have to research his own village. This "Calendar of Events" will provide reference points to determine when the baby was born.

### Registration of Births

In the future the CHW will be responsible for the legal registration of births. However, at the time of the consultancy, there were no birth registrations by anyone, including the mothers, the CHW's, trained village mid-wives or the traditional birth attendants (TBAs). For the purpose of surveillance, the CHW must have contact with both the village midwife and the TBA in order to be aware of village births. (Figure 4).

### Recording Measurements:

During the first year of life when growth is the most rapid, weighing is the key anthropometric measurement. The choice of suitable scale is a problem. It must be sturdy, inexpensive, easily transportable and accurate to within 0.1 kg. When one considers the cost of precision, the number of villages in the Sudan, and the need for maintenance and calibration, it is probably not feasible to use a scale in nutritional surveillance on a national basis. However, it might be worth testing two types of scales on a limited basis: a Salter scale and a foot scale.

In measuring mid-upper arm circumference, the arm is easily accessible and it can be done with a child sitting in the mother's lap.

## CALENDAR OF EVENTS:

For AGE DETERMINATION, each community health worker must draw up for his village an events calendar based on planting, harvesting, weather patterns, and holidays. A hypothetical example follows:

- January: Independence Day  
Harvest groundnuts
- February: Plant first crop of sorghum
- March: Plant tomatoes and onions
- April: Rainy season begins
- May: Harvest sorghum
- June: Plant beans, harvest  
tomatoes, Ramadan begins
- July: Plant maize
- August: Harvest onions
- September: Harvest onions, plant second crop of sorghum
- October: Rains end, cut pasture
- November: Pink flowers bloom, harvest corn
- December: Harvest second crop of sorghum

TO BE FILLED OUT BY COMMUNITY HEALTH WORKER

MONTHLY RECORDING FORM FOR NUTRITIONAL STATUS

EL KWEIK VILLAGE, JANUARY, 1982

<u>No.</u>	<u>Name</u>	<u>Sex</u>	<u>Birth Date</u>	<u>Age</u>	<u>Wt. or Arm Circum.</u>	<u>Malnourished</u>	<u>Well-Nourished</u>
1	Ahmed	M	Nov. 81	2 mo.	5 kg.		x
2	Mohammed M		July, 81	6 mo.	5 kg.	x	
3	Ihsan	F	June, 80	19 mo.	12.0 cm.	x	
4						x	
5						x	
6							x
7						x	
8							x
9						x	
10							x
						<u>Total malnourished</u>	<u>Total Well-nourished</u>
						6	4

$\frac{\text{Total malnourished}}{\text{Total measured}} \times 100 = \text{percent of children in a community who are malnourished}$

$$\frac{6}{10} \times 100 = 60\%$$

Figure 4

It is necessary to use a fiber glass type rather than a steel one. The cost is cheap and the methodology simple. All CHW workers should apply the tape to infants from 0-5 years. The scales will be used only during the first year of life.

The CHW is expected to visit everyone in his village at least once a month. According to PHC directives, he is responsible for about 4,000 people. It may be unrealistic to assume he will reach outlying families at distances which may take him almost a day by foot. Adequacy of coverage will affect the denominator of total children measured for malnutrition and could result in an over-reporting of incidences of malnutrition. Provisions should be made to measure the children and interview the mothers of the families in inaccessible areas when they come to market.

#### Reporting

The CHW is responsible for sending morbidity and mortality reports at monthly intervals. This report lists numbers of cases of various diseases by age and sex (Figure 5).

Number of deaths and number of births are also included in this report. Malnutrition has not been included as a line item in the morbidity section.

The CHW, besides sending his monthly report to the district level will also send a copy of the form "Monthly Recording Form on Nutritional Status (Figure 4) to the Nutrition Offices at the District Level.

#### Tabulation of Results and Monitoring

Unless information is regularly passed to a central office in a simple and useable form, no system of surveillance can function correctly. The Nutrition Officer or Medical Assistance at the District level should be responsible for seeing that the village forms are tabulated. From the Monthly Recording form for nutritional status the percentages of children in the community who are malnourished is calculated (See example in Figure 4).



These results can then be transferred to the form Annual Report on Nutritional Status and Mortality (Figure 6).

Graphing the results from the Annual Report Form gives a picture of trends of malnutrition which provide a way of comparing villages within the same region. Particular attention should be given to malnutrition rates during periods of prolonged daytime fasting such as Ramadan, of rainy and dry seasons, and periods just prior to planting and harvesting. (Figure 7)

### Work Plan for 9 Months

#### January-February

#### March

#### April May June July Aug Sept

Selection of CHW's

Training of CHWs

Testing of Nutritional Surveillance

Selection of Villages

Purchase of Scales

and tapes

Preparation of

Training Nutr.

Surveillance Mat.

After extensive conversations with Sudanese Ministry of Health Officials at the district and national level and UNICEF program officers, the following workplan was agreed upon:

National Level: A representative from the Department of Rural Health Service and Primary Health Care and a Nutritionist from the Nutrition Division of the Ministry of Health would collaborate with the UNICEF Nutrition Program officer to prepare the training materials for nutritional surveillance.

The selection of CHWs and Villages would be the responsibility of Dr. Abdel Rahman Kintibai, who recently became the Director of Medical Services for both North and South Kordofan Provinces. He will select 5 CHWs from villages in Kodugli district and 5 CHWs from villages in Dilling District (See Figure 2). One criterion

Annual Report on Nutritional Status By  
Nutrition Officer at District  
Level

Name of Village:

Name of CHW:

<u>MONTH</u>	<u>Date rec'd Report</u>	<u>% Mal.</u>	<u>N. of children Died</u>	<u>No. of live births</u>
Jan.				
Feb.				
Mar.				
April				
May				
June				
July				
August				
September				
October				
November				
December				

Figure 6

TO BE PLOTTED BY NUTRITION OFFICER AT DISTRICT LEVEL

Name of Village:

Name of CHW:

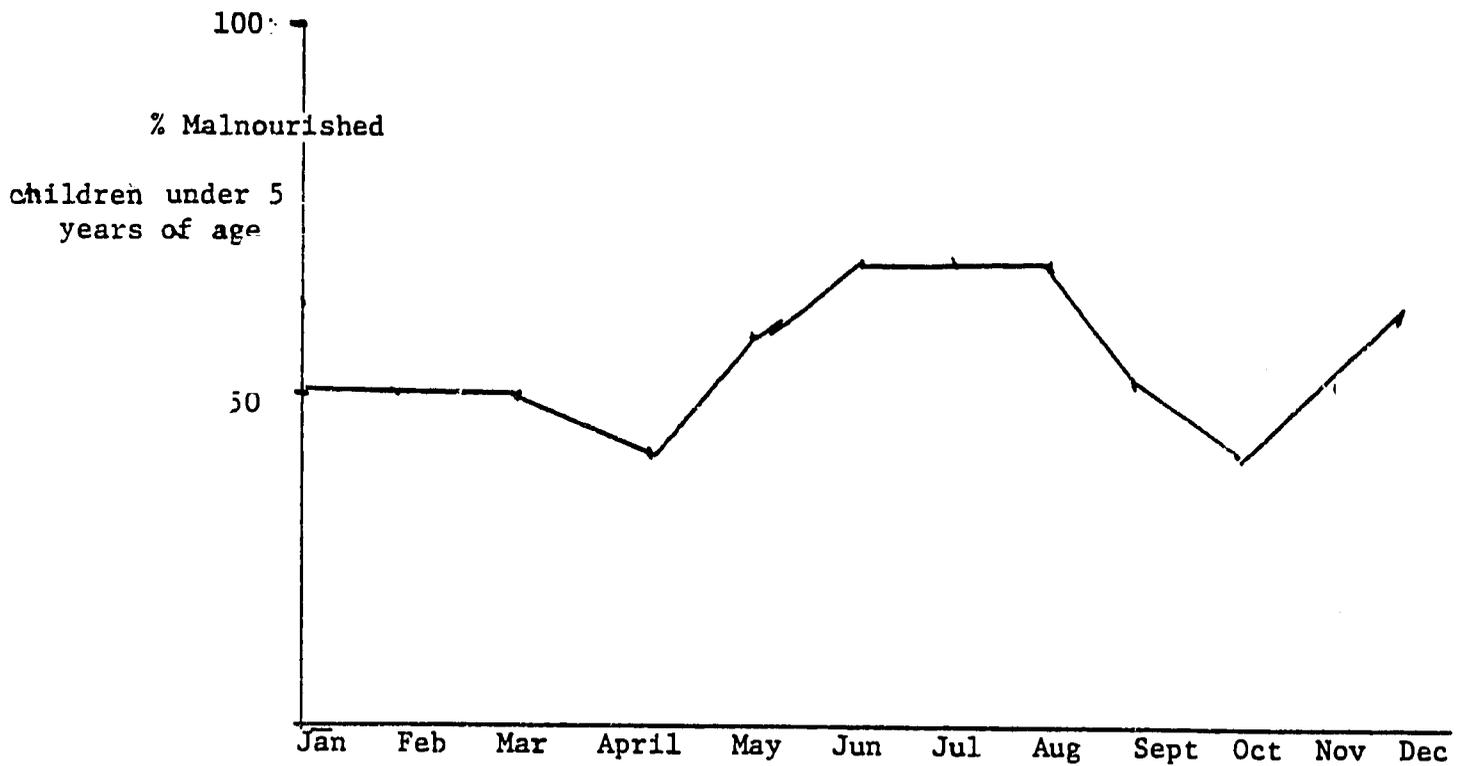


Figure 7

for selection is that two villages in each district will have Water Development Projects.

### Training

Dr. Mirghani Suleiman will be responsible for organizing the training of the 10 CHWs in Kadugli. The training will take approximately 10 days. It will focus on the following areas:

1. Anthropometric measurements
2. Recording and Reporting including the development of a calendar of events, registration of births, comparison of anthropometric data with age reference standards (See Tables 10 and 11)
3. Weaning Foods
4. Oral Rehydration

All of the above topics are covered in the initial training of CHWs. However, since referral of severely malnourished children to dispensaries and hospitals are difficult because of lack of transportation and communication facilities, the CHW must be able to cope with the situation at hand. The weaning foods component should emphasize:

1. the customary weaning foods available at the village level.
2. Appropriate levels of mixes
3. Timing of supplementation to breast milk
4. Emphasis on gradual weaning rather than abrupt weaning.

### Oral Rehydration

UNICEF has available Oral Rehydration Salt (ORS) packets for wide distribution in South Kordofan Province. It is their intention to include these packets in the drug kits which the CHWs receive at approximately 3 month intervals. The CHW should receive additional training on the use of ORS packets.

Equipment: 10 fiber-glass tapes to measure mid upper arm circumference

4 Salter scales

6 Foot Scales

Reporting Forms

## Weight-for-age and Arm Circumference for Age Standards (Tables 10 &amp; 11)

## Budget:

The cost of the initial pilot testing of the nutritional surveillance methodology will be borne by UNICEF. The cost of tapes at \$0.50/tape \$5.00

The cost of scales at \$45/scale \$450.00

The cost of training will include transportation of the 10 CHWs to and from their village, per diem for 10 days. Each CHW would receive a monetary incentive of about 10 Sudanese pounds during the training period or approximately US \$10.00 in addition to the normal per diem. Since it is hoped that eventually surveillance will be a normal part of the CHW training, it would be prohibitively expensive to add a monetary incentive for just surveillance. The national budget could not afford it.

Cost of Training CHW \$300.00

Transportation and per diem

of 2 nutritionists from Khartoum

to Kadugli for 10 days (Airfare gratis

on UNICEF plane) \$200

3 day Review in July, after 3 months of testing, between

CHWs and nutritionists responsible for training

\$200

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\$1155.00

After 9 months of reporting and evaluating field data and testing the methodology of nutritional surveillance, a decision should be made as to whether nutritional surveillance can be amplified to a regional level based on feasibility of using scales, the facility in filling out forms and analyzing information. Such a decision could positively affect the content of the training of CHWs at training centers around the country.

TO BE USED BY COMMUNITY HEALTH WORKER

<u>Age of the Child</u>	<u>ARM CIRCUMFERENCE/AGE</u> If the child's arm circumference is less than this, the child is MALNOURISHED	<u>Standard Arm Circumference for this age</u>
0	9.0 cm.*	11.3 cm.*
1	9.0	11.3
2	9.8	12.2
3	10.4	13.0
4	11.3	14.0
5	11.5	14.3
6	11.6	14.4
7	11.8	14.8
8	12.2	15.3
9	12.4	15.4
10	12.5	15.6
11	12.5	15.7
12	12.7	15.8
13- 60 months	13.0	15.8-17.0

\*These figures are drawn from D.B. Jelliffe, The Assessment of the Nutritional Status of the Community, WHO, 1966 , and represent the 80th percentile male and female sexes combined.

Table 10

TO BE USED BY COMMUNITY HEALTH WORKER

## WEIGHT-FOR-AGE

Age of the Child	If the child weighs less than this amount he is malnourished	Standard weight for this age
0 months	2.4 kg.*	3.2 kg.*
1	3.1	4.2
2	3.7	5.0
3	4.3	5.7
4	5.0	6.4
5	5.4	7.0
6	6.0	7.5
7	6.4	8.0
8	6.8	8.5
9	7.2	8.9
10	7.6	9.2
11	7.9	9.6
12	8.1	9.8

\* These figures are drawn from the norms of NCHS/CDC (National Child Health Statistics/Center for Disease Control) Atlanta, Georgia. The center column shows the values at the 5th percentile. The right column shows the values at the 50th percentile.

Table 11

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List of Persons Met

1. UNICEF Khartoum:
  - Yoshiteru Uramoto, Assistant Project Officer
  - Thomas McDermott, Program Officer
  - Tony Carter, Statistician
  - Viviane Sakkal, Health Advisor
  - Ben Mboya, Program Officer
2. UNICEF Kadugli
  - John Zins, Zonal Development Project Officer
  - Gianni Bicego, Water Development Officer
  - Dominic Milioni, Administrative Officer
3. AID/Khartoum:
  - Dr. Mary Ann Micka, Health Officer
  - Joyce Jett, Nutrition Advisor
4. Catholic Relief Service/Khartoum
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6. Ms. Ishan Mustafa
  - Nutritionist
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  - Ministry of Health
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7. Mrs. Shahwa El Gizouli
  - Director School Garden
  - Nutrition Education Division
  - Ministry of Education
8. Dr. A.R. Kabbashi
  - Director General Rural Health and PHC
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9. Dr. Ali Biely  
Deputy Director Rural Health and PHC  
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10. Dr. Hossam Ahmed Mohamed  
Director Nutrition Division  
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11. Dr. Hafiz El-Shazali  
Paediatrician Wad Medani Civil Hospital
12. Dr. Gaafar Ibnouf Suliman  
Head, Child Casualty Hospital  
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14. Dr. Abdel Rahman Kintibai  
Director Medical Services  
Kordofan Region
15. Dr. Mirghani Suleiman  
Assistant Community Health Officer  
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16. Abdel Rahman Salih Mohamed  
Nutrition Officer  
Kassala Province

## JOB DESCRIPTIONS FOR PHC PERSONNEL

Community Health Worker (for rural static populations)

Definition: A Community Health Worker is an indigenous member of the community selected by that community, and paid by the Rural Council, to provide Primary Health Care Services to a population of approximately 4,000 people.

He is supervised technically by the Medical Assistant, and politically and administratively by the community, through the Village Development Committee, the Rural Council, and the SSU Basic Unit. These institutions are together responsible for his discipline, and can recommend punishment or dismissal, through the Medical Assistant, to the Assistant Commissioner for Health for the province.

Promotive activities

The CHW is required:-

- to maintain constant contact with the members of the community and with their leaders, as well as with other community development workers;
- to participate in community projects; and
- to advise the community on
  - water supplies;
  - collection and disposal of refuse;
  - good nutrition based on local foods;
  - health education, e.g., demonstration of food and diet;
  - and use of latrines.

Health Care activities

Taking into consideration the limited education and training of the CHW, a carefully selected number of diseases considered as highly prevalent in most communities has been drawn up, and appears as List (1) below. For these, the CHW is to offer ambulatory treatment and preventive advice. He will refer to the Medical Assistant in the area of his Primary Health Care Complex, all complicated cases, and all cases where he suspects any of the diseases given below in List (2).

List (1): to be treated in the PHCU

1. malaria
2. gastro-enteritis, dysenteries, and diarrhoea
3. respiratory diseases, upper and lower, including asthma and diphtheria
4. measles
5. wounds, including minor burns
6. abscesses
7. skin diseases, including scabies
8. malnutrition and anaemia
9. eye infections
10. venereal diseases
11. bites and stings, snake, scorpion, and dog (emergency first aid only)

List (2): to be referred to dispensary

1. leprosy
2. tuberculosis
3. suspected worm infestations
4. bilharzia
5. ear diseases
6. kala-azar
7. bites and stings, snake, scorpion, and dog
8. cerebro-spinal meningitis  
(to be reported to the MA,  
but not necessarily referred)
9. any other condition

Information system

The CHW is responsible for:-

- daily registration of all activities carried out in the PHCU, making appropriate use of the forms, cards, and registration books supplied;
- monthly reports on activities, to be discussed by the Village Council before being sent to the MA;
- keeping records of his work for a period of at least five years; and
- registering all births and deaths, as well as issuing birth and death certificates.

Drugs and Supplies

The CHW is responsible for:-

- a monthly report on the consumption of drugs and supplies, recording the quantities remaining; and
- a six-monthly report requesting replacement of perishable equipment.

Training and status

A CHW is to be given refresher courses to increase his professional knowledge. Those whose educational standard is reasonably good, that is, who have full junior secondary schooling, will have the opportunity of being selected to join the general training course for Medical Assistants, after four years of service in a PHCU. This opportunity, associated as it is with benefits for the worker, serves as an incentive.