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THE DEMOCRATIC REPUBLIC OF SUDAN  
UNITED NATIONS DEVELOPMENT PROGRAMME

REHABILITATION OF  
HOUSEHOLD GARDENS

REPORT ON PROCUREMENT, PACKAGING AND  
DISTRIBUTION OF SEED

JULY 1985

HUNTING TECHNICAL SERVICES LTD  
ELSTREE WAY  
BOREHAM WOOD  
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ACKNOWLEDGEMENT

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Throughout the entire exercise , from advice on crops and varieties, purchase and packing to final distribution the Consultants efforts were supported with enthusiasm and much hard work both in meetings and in field .

To all those far too numerous to mention whose support and assistance made the implementation of the Rehabilitation of Household Gardens Project Possible, we extend our most sincere thanks.

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## CHAPTER ONE

### BACKGROUND

For the past three years, Sudan has experienced exceptionally low rainfall culminating in a disastrous season in 1984. The effects of the drought have been many and varied, no group of people escaped its consequences entirely.

The International Community responded by providing food grains and supplements and medical services through a variety of agencies and charitable institutions. Although the prospects of mass starvation made feeding the people top priority thought was also given to the post drought rehabilitation period and government was very keen to strengthen the capacity of households to meet their own basic food needs. With many families reduced to a state of absolute poverty a timely supply of seed was an urgent necessity.

While the bulk of the nation's food supply comes from sorghum and millet grown as a staple crop, it is a tradition in many areas to plant household gardens to vegetables and quick maturing grain crops and pulses in an effort to fill the hungry months immediately prior to the main harvest, when even in normal years, food stocks are running low. The practice has an additional advantage of improving nutrition by providing a source of vitamins and minerals. It is on this sector that the project has focused.

As early as February a draft project was prepared initially to cover the Region of Darfur only, but it was subsequently agreed to extend seed distribution over a wider area to include Kordofan, Central and Eastern Regions. Unfortunately political upheavals caused some delays and the contract with Hunting Technical Services Ltd., the company selected to provide specialist staff, was eventually signed in April. Under this agreement the Consultants agreed to provide procurement and packaging of 300,000 packets of seeds of carefully selected types and varieties, organise and coordinate distribution to village level, and arrange farmer training and supervision through various government and non governmental agencies.

## CHAPTER TWO

### TERMS OF REFERENCE

The Rehabilitation of Household Garden Project originated from a consultancy undertaken for UNICEF, which identified an integrated strategy with the following objectives:-

- to reduce malnutrition among 3-36 month old children.

- to reduce maternal anaemia.

- to reduce the incidence of low birth weight babies.

These objectives were to be achieved by:-

- improved cultivation of household gardens.

- re-establishment of dry season gardening.

- assistance with establishment of village level pre-school groups.

- assistance with establishment of or revitalisation of village level woman's associations.

- the production of communications material supporting the promotion of weaning foods, better diet for pregnant women and improved horticultural practices.

The first proposal for a UNDP funded project, was confined to Darfur and the objectives were based on the UNICEF consultancy. There was to be a large nutritional component and government staff resources particularly those of

Horticultural and Extension Departments were to be used extensively.

Subsequently it was decided to extend the Project Area to cover Kordofan, Central and Eastern Regions. The objectives were then further defined, a project document prepared, and a contract signed with Hunting Technical Services Ltd., to provide three Coordinators and a Procurement Officer. The scope of the work included the selection, purchase and packaging of 300,000 packets of seeds, suitable for sowing in household gardens Jubra of 100m<sup>2</sup>, which would grow under rainfed conditions and provide supplementary nutritious food for the pre-harvest period.

A distribution net work was to be established, using Regional Governments, Departmental and non governmental agencies and training extension services would be provided, The full terms of reference are presented at Appendix A.

Unfortunately, political disturbance which culminated in a coup d' etat on 6th April seriously affected the timing and implementation of the project, and packaging of seeds and distribution before the onset of the rains became overriding priorities.

CHAPTER THREE

This effectively limited the scope of project activities to :-

- determination of composition of seed package for planting an area of 100m<sup>2</sup>.
- location of suitable sources of seed in Sudan.
- procurement and packaging of seed.
- identification of target groups to whom seed should be distributed.
- distribution of seed.

This curtailed programme was agreed through an exchange of correspondence after signature of contract.

In addition to the above , and in order to gain a more comprehensive picture of agriculture , seed requirements and availability of food in markets , two questionnaires were devised and used throughout the area. This it is hoped will be of assistance in any future evaluation exercise and should facilitate the formulation of a better and more relevant programme , should it be decided to repeat the operation next season.

### CHAPTER THREE

#### MOBILISATION OF CONSULTANTS

The mobilisation of the consultants was as follows:-

**J. Harvey , Co-ordinator, Darfur Region.**

April 22nd Arrive Khartoum.

April 28th Travel to Nyala.

June 16th Travel to Khartoum.

June 20th Depart Khartoum.

**R. Briggs , Co-ordinator, Kordofan Region.**

April 27th Arrive Khartoum

May 5th Travel to El Obeid

June 13th Travel to Khartoum

June 26th Depart Khartoum

**P. Humphreys , Co-ordinator , Eastern/Central Regions.**

May 4th Arrive Khartoum

May 12th Travel to Kassala/Port Sudan

May 22nd Return to Khartoum

May 25th Travel to Kassala/Port Sudan

June 13th Return to Khartoum

June 20th Finish input.

**C.J.Howse , Procurement Officer, Purchasing and Packaging**

Two man months as agreed.

Detailed itineraries of the three Regional Co-ordinators are included in Appendix B.

## CHAPTER FOUR

### PROCUREMENT AND PACKING

#### 4.1 Background.

In the early planning stages of the project a decision was made that a two phased approach be used to implement the work of purchase/packing of the seeds. The purpose of this was to allow a pilot stage to be undertaken to test the organisational methods and the availability of the seeds and packaging materials.

The first stage of phase I, which consisted of the production of 30,000 packets, was to identify the seeds most likely to be of use to the target population. This important consideration was undertaken by a process of enquiring from as many knowledgeable sources as possible and then making a synthesis of all the recommendations. Professional opinions were obtained from senior staff of the Horticultural Department, the Ministry of Agriculture, the National Seeds Administration, FAO and various individuals. The primary considerations were the ability of the seeds to grow under rainfed conditions, the nutritional make up of the total package, the likelihood of finding enough seeds of acceptable quality and the acceptability of the crops to the target population. Initially the primary target populations were to be the people of North and South Kordofan and North and South Darfur. This factor was an overriding consideration in the actual crops selected and tended therefore to determine the content of the packets destined for Central and Eastern Regions. When the decision was taken to enlarge the target area, time and organisational constraints precluded the packing of alternative mixes of crops.

As a result of the opinion sought the final make up of the sachets was Okra, Tomato, Sorghum, Cow Pea, Melon and Maize.

Each packet contained sufficient seeds to plant an area of approx 100 sq metres, the average size of a garden in Darfur Province.

The second phase of the project was an increase in the number of packets to a total of 300,000 with a distribution ratio of:-

Darfur Province	100,000. packets
Kordofan Province	100,000. packets
Eastern/Central Provinces	<u>100,000.</u> packets
Total	300,000. packets



For the packaging of Phase I ( 30,000 ) packets we purchased the following quantities and types:-

Type	Variety	Source	Quantity
Okra	Pusa Sawani	National Seed Admin	360 kgs
Cow pea	Kordofan	Khartoum Market	270 kgs
Sorghum	Dabar	National Seed Admin	600 kgs
Tomato	Strain "B"	Horticulture Dept.	9 kgs
Melon	Sugar Baby	Horticulture Dept.	9 kgs
Maize	Unknown	Khartoum Market	210 kgs

Under Phase II ( 270,000 packets ) we purchased the following quantities and types:-

Type	Variety	Source	Quantity
Okra	Pusa Sawani	National Seed Admin	1850 kgs
Pigeon pea/chick pea	Clemson Spineless *	Khartoum Market	1390 kgs
Pigeon pea/chick pea		Khartoum Market/Shendi	2430 kgs
Sorghum	Dabar	National Seed Admin	4860 kgs
Maize	Unknown	Omdurman, Wad Medni	3000 kgs
Tomato	Strain B*	Khartoum Market	122 kgs
Melon	Sugar Baby	Khartoum Market	80 kgs

\* Source of supplies - Sawaheli Seeds Company Khartoum

The actual contents of each packet consisted of:-

Okra	8 gm	equivalent to	200 seeds
Cow pea/Pigeon pea /chick pea	9 gm	"	30 seeds
Sorghum	20 gm	"	750 seeds
Maize	7 gm	"	50 seeds
Tomato	0.75 gm	"	100 seeds
Melon	0.03 gm	"	6-8 seeds

#### 4.3 Seed Packaging

##### 4.3.1 Materials

Because of the extremely **wide** distribution network planned it was essential to design a package that would withstand rough handling , be fairly water proof, well presented and easily filled . A 20 gauge plastic bag 20 x 12 cm was finally accepted on which was **printed** in Arabic the name of the Project, the funding agent the types of seed contained and a statement saying " Free Gift" . Each type of seed was packed into a plastic sachet measuring 6 x 4 cm . The tomato and melon seed were packed together as the quantities were very small. The resulting 5 packets were then packed into the outer envelope and sealed. 300 packets were then placed inside a specially made cardboard box on which had been printed in Arabic "Household Garden Project-Seeds". These boxes were sealed with plastic tape and tied with plastic string with a breaking strain of 40 kgs. Each box when filled weighed 15 kgs.

The materials were purchased from the following sources:-

Plastic packets 20 x 12 cm	- Blue Nile Plastic Co, Khartoum North
Plastic sachets 4 x 6 cm	- Various traders in Omdurman
Cardboard boxes	- Sudan Kuwait Packing Company, Khartoum North.

We experienced endless problems with the producers of the large plastic outer envelopes as either they ran out of raw materials, dyes or their machinery broke down. The major problem centered around the accurate cutting of the rolls of printed plastic as the machines constantly went out of alignment. We finally ended up having nearly 200,000 packets hand cut by small workshop in Omdurman souk.

The 1.8 million small sachets were amazingly easy to acquire as they are used normally to hold chewing tobacco . Certain types are however very difficult to open and we experienced many tantrums by the packing force over this aspect until we found one particular type which opened easily.

##### 4.3.2 The Packing Process.

The actual packing operation was subcontracted to Messrs Baghir Peanuts Ltd., at Baghir Industrial Estate. They had considerable experience in the use of large labour gangs of woman for the hand selection of groundnuts for export and this experience proved invaluable.

A large sacking covered shelter was made in the storage area around the peanut factory which would accommodate the work force of up to 185 women required. The women were organised into groups of 5 or 6 and each group concentrated on one particular type of seed. They were issued with the following equipment per group:-

Two metal measures specially made to hold the exact quantity.

One metal funnel with a spout diameter of 2 cm.

One metal stand for holding the funnel which was held firm by pushing it into the ground.

A metal bowl to hold the bulk seeds.

Plastic sachets as require.

Considerable problems were experienced in Phase I when we attempted to seal the small sachets with a small stapler. The women were unable to reload the stapler easily and many delays occurred. The women themselves resolved the problem by simply tying off the bag by folding over the top - where the bag was too full to do this as in the case of the sorghum or okra seed the women split the bag at the top and tied the two resulting strips together.

The type of seed to be packed varied according to the daily needs for the final packing of the sachets into the outer envelopes. The women naturally preferred to pack the easier medium quantity seeds and consequently the more difficult varieties were often in short supply. The measures for the tomato seed were particularly difficult as the quantities were so small. We tried various methods including a 5 piaster coin, the cup on a golf tee and finally some specially made tin spoons which, although fragile, did work.

The sachets were bulked up and packing teams organised to place the five different sachets inside the outer envelope then seal them by folding the top and sealing with selotape.

All manual labour was paid on a piece work basis the most proficient able to pack around 1,300 packets during a nine hour shift. Constant supervision was required to ensure the packets were correctly filled and sealed but generally the labour force was extremely hard working and very few problems were experienced.

#### Conclusions and Recommendations.

1. An exercise like this should start in January at the latest if seeds are to be distributed in time.
2. 300,000 packets absorbed almost all of the available packing materials, and supplies of okra and tomato seeds.

3. If time permits seeds should be purchased from the areas in which they will ultimately be distributed. This is especially true with sorghum and maize seed.

4. Seeds should be treated with a seed dressing although special care would have to be taken to protect the labour force from chemical contamination.

5. More time would allow a variety of packets to be produced which would be more suited to local preferences and take into consideration regional differences.

Conclusions and Recommendations. An exercise like this should start in January at the latest. It should be distributed in time.

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8. An exercise like this should start in January at the latest. It should be distributed in time.

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10. An exercise like this should start in January at the latest. It should be distributed in time.

## CHAPTER FIVE

### PROJECT IMPLEMENTATION - DARFUR REGION

#### 5.1 Agricultural Systems.

The agricultural systems of Darfur reflect variations in the pattern of rainfall and soil type. A common feature of all agro-ecological zones is the dominance of cereal crops - millet and sorghum - which together occupy between 70 to 100 percent of the cropped area. The main export cash crop (grown mainly in South Darfur) is groundnuts. Other crops include okra, chilli pepper, sesame, kerkadeh, tumbac tobacco, maize, watermelon, various other cucurbits and leafy vegetables. Onions and other vegetables are grown under irrigation in winter, and citrus, wheat, potatoes and garlic are produced at higher altitude on the Jebel Marra Massif.

The major land systems of South Darfur are :-

1. Qoz ( 37 percent of total area ) = areas of predominantly sandy soils, extensively cultivated where water is available with millet, groundnut, watermelon and some sorghum and okra.
2. Basement and Pedepain ( 28 percent of total area ) = areas of rocky, thin soils suitable for grazing only. Cropping confined to the 7 percent of alluvial soils adjacent to watercourses, crops include sorghum, okra, chilli and tomato, irrigated winter vegetables near main urban centres.
3. Alluvial Complex ( 34 percent of total area ) = areas of heavier, deeper soils of alluvial origin sometimes overlain by sand, found in central and south eastern parts of South Darfur; millet, sorghum, groundnut, okra, tomato and chilli grown on sandy and alluvial soils

Alluvial Complex continued.

= adjacent to watercourses;

areas of winter irrigated vegetables. The majority of the alluvial complex is uncultivable owing to compaction (Nagala soils) or seasonal flooding (Luta soils).

Higher altitude volcanic soils terraced up to 2800 metres above sea level; millet, wheat, potatoes, garlic produced in exportable quantities. Various watermelon, other vegetables are grown under irrigation in wheat, citrus, wheat centres.

Rainfed vegetable production varies considerably between agro-ecological zones. Areas which are generally favourable are the alluvial soils of the western basement and southern alluvial complex, and the terraced slopes of Jebel Marra where okra, chillies and tomato are grown as both household and field crops; these areas produce a surplus in the form of dehydrated produce. The Qoz areas are generally less favourable for vegetable production and more limited areas of okra and lubia are grown, mainly for direct consumption. Watermelon is widespread and is often inter-cropped with millet, particularly on the sands of North Darfur. The Qoz areas, together with the main towns, are deficient areas for rainfed vegetables and a significant trade exists between here and the surplus alluvial areas in Derraba (dried okra), salsa (dried tomato) and dried chilli.

Household gardens (Jubraka) are cultivated in all agro-ecological zones with the possible exception of the low rainfall Qoz areas of North Darfur. In the areas better favoured for vegetable production, little distinction is made between crops grown for household consumption and those grown as minor field crops. In these areas there is no absolute shortage of seeds with the possible exception of okra. In the sandy Qoz areas the Jubraka consists largely of early sorghum, often just a few plants inside the house compound. Availability of seeds is lower

The contribution of vegetables in rural diets also varies with area. Irrigated produce is found in large quantities only in the main urban centres and is important only in the diet of salaried town-people. Otherwise the opportunity to consume fresh vegetables is limited to the months towards the end of the rainy season; for the rest of the year it is confined to dried produce. A survey conducted in the latter half of 1983 amongst 1600 households in South Darfur (WSDC / PMEU ) showed that vegetables and spices accounted for only 13 percent of average weekly household expenditure:-

Item.	Rs./Week	Percent
Vegetables spices	1.35	12.60
Meat ( fresh & dried )	2.74	25.60
Oils/ dairy produce	1.96	18.30
Sugar/tea	4.66	43.50
<b>Total</b>	<b>10.71</b>	<b>100.00</b>

Wealthier households spent more on meat, especially fresh meat, and oil. By far the biggest item in the vegetables/spices class was onions; the average consumption of derraba and salsa was only 70 and 300 grams / week/household respectively.

Rural diets are also supplemented by a number of wild fruits, roots and seeds, particularly in famine years. Important amongst these are lalob fruits (*Balanites aegyptica* ) Mukheit beans ( *Boscia senegalensis* ) Koreib seeds ( *Brachiaria xantholenca* ), Kurdalah berries ( *Maerua sp* ) and Fayo and Seteip roots.

## 5.2 Allocation Criteria

The allocation of seed quantities to different parts of Darfur Region is affected by two opposing criteria. On the basis of need, distribution would be biased towards northern areas, for it is here that the most seriously drought affected people are to be found. From the point of agricultural suitability and hence production potential, preference would be given to southern districts.

In the case of Jubraka seeds, the benefits accrue to individual households rather than to the community at large, and it was therefore decided that distribution should reflect need rather than production potential. Whilst much of Northern Darfur is marginal for any form of rainfed agriculture there are in most districts small areas that receive supplementary moisture from rainfall run - on and on which production of some crops, including vegetables and tumbac tobacco, is possible. Furthermore, the better favoured areas of South Darfur are facing less of a crisis with regard to seed availability.

At a meeting in El Fashir with the Regional Ministry of Agriculture and the Drought Rehabilitation Committee, it was agreed that in order to balance the two sets of criteria :-

- a. allocations by area should be based on the distribution of the farming population, as indicated by the number of rural sedentary households in the 1983 Census.
- b. the actual needs of each area should be estimated according to how badly it is affected by drought, and the population figure duly adjusted.
- c. population figures should then be further adjusted to reflect migration and specifically to take account of migrant household expected to remain in new locations during the rainy season.

Census information was provided by the Department of Statistics, and data on "need" and migration was collected from Area Council Administrative Officers, Regional Ministry of Agriculture staff and rural development project reports and data. An arbitrary "need rating" was assigned to each Rural Council which resulted in most of them being classified as having " 100 percent " requirement with only a few southerly and western Rural Councils in South Darfur Province being downgraded.

The question of migratory population movement was particularly difficult to resolve. Reliance was placed on Area Council Officer's assessments, and an attempt was made to balance in-and-out migration across Area Council boundaries. The information was incomplete and often contradictory, many areas having experienced continuous in- and out- migration. It was also necessary to estimate what proportion of the migrant population would return home at the start of the rains. The only survey data available was from Jebel Marra

TABLE 5.1 SEED DISTRIBUTION SCHEDULE

Rural Development Project and this indicates that the majority (66 percent) of migrant households wish to remain in their new areas. In general, Area Council Officers in North Darfur thought that most migrant households would return home if the early rainy season looked promising (which it did), whilst those in South Darfur thought that all those who could obtain land, in most cases of poor quality and by temporary agreement, would stay. In addition to anticipation of a good rainy season in north and a shortage of land on which to settle in the south, there are administrative pressures which are encouraging migrants to return home. This is because the distribution of food aid largely reflects the 1983 population figures owing to the difficulties involved in re-registering people in new areas, especially when their presence may be transitory. Although efforts have been made to re-allocate grain shipments to reflect population shifts, for many migrant households the safest way to ensure inclusion in food aid distribution is to return to the Rural Council of origin. Taking these factors into consideration, an arbitrary value of 50 percent return was assumed for migrant households.

Special consideration was given to areas with large concentration of migrant families, such as Southern District of South Darfur which has both the Regional Government Sanam El Naga's settlement and the Buram Camp, and allocations to the affected Rural Councils were duly increased.

The basis of calculation of Jubraka seed allocation is shown in Table 5.1. For each Rural Council, the number of sedentary rural households was multiplied by a "need rating", which in most cases is 100 percent. To this figure was added or subtracted the number of permanent migrant households, this being 50 percent of the pre-rains in or out-migration figure.

The resulting adjusted household number as a percentage of the regional total was used to calculate the number of seed bags allocated to each Rural Council. Overall, the allocation to North Darfur Provinces was 43.60 percent (43,600 bags) and to South Darfur Province 56.40 percent (56,400 bags).

In North Darfur, the largest absolute allocations were to the more favourable areas of Central, Western and Southern Districts, but small allocations were also made to the less favourable Northern, North - Eastern and Eastern Districts. Owing to the lack of data, the centralised allocations of seed within Rural Councils to specific Village Councils was neither practical nor desirable, and was not attempted.

TABLE 5.1 SEED DISTRIBUTION SCHEDULE

AREA	RURAL COUNCIL	H/HOLDS	NEED RATE %	MIGRANT H/HOLDS	ADJUSTE H/HOLDS = (axb) + c	ALLOC. PERCENT	ALLOC. BAGS = ex 100,000	THRO' COUNCI	THRO' SIGNED	THRO' WSDC	THRO' JMRDI
(A) N. DARFUR											
EASTERN	MELLIT	11725	100	-3257	8468	1.92	1919				
	MALHA	4188	100	-1163	3025	.69	685				
	Sub-Total	15913	-	-4420	11493	2.60	2604	2504	100		
NORTHERN	KUTUM RURA	16550	100	-4618	11932	2.70	2704				
	UM BURU	3943	100	-1100	2843	.64	644				
	KARNOI	3878	100	-1082	2796	.63	634				
	Sub-Total	24371	-	-6800	17571	3.98	3982	3882	100		
CENTRAL	EL-FASHER	9403	100	0	9403	2.13	2131				
	TAWILA	8685	100	0	8685	1.97	1968				
	KORMA	7338	100	0	7338	1.66	1663				
	KATTAL	14038	100	0	14038	3.18	3181				
	Sub-Total	39464	-		39464	8.94	8943	8593	350		
WESTERN	EL-GENEINA	38656	100	0	38656	8.76	8760				
	HABIILA	21501	100	0	21501	4.87	4872				
	SALII'AH	21695	100	0	21695	4.92	4916				
	Sub-Total	81852	-		81852	18.55	18548	18448	100		
EASTERN	UM KEDAADA	8677	100	-2434	6243	1.41	1415				
	EL-LA'IT	11924	100	-3346	8578	1.94	1944				
	Sub-Total	20601	-	-5780	14821	3.36	3359	3309	50		
SOUTHERN	KEBKABIEH	16698	100	0	16698	3.78	3784				
	SERAIF	3623	100	0	3623	.82	821				
	SARAF'UMRA	6756	100	0	6756	1.53	1531				
	Sub-Total	27077	-		27077	6.14	6136	6086	50		
GRAND TOTAL N. DARFUR	209278		ADJUSTED>	192278	43.57	43571	43571				

ASSUMED MIGRANT OUTFLOW FROM NORTH DARFUR -17000

Continued.

TABLE 5.1 SEED DISTRIBUTION SCHEDULE

CONTINUED

		(a)	(b)	(c)	(d)	(e)	(f)				
AREA	RURAL	H/HOLDS	NEED	MIGRANT	ADUSTE	ALLOC.	ALLOC	THRO	THRO	THRO	THROU
COUNCIL	COUNCIL		RATE	H/HOLDS	H/HOLD	PERCENT	BAGS	COUNCIL	SGNED	WSDC	JMRDP
(B) SOUTH			%		=(axb)						(B) SOUTH
DARFUR					+c		=ex				DARFUR
							100,000				
CENTRAL	N.NYALA	16904	100	0	16904	3.83	3831				
	E.NYALA	17747	100	0	17747	4.02	4022				
	S.W.NYALA	23956	100	0	23956	5.43	5429				
	KAS	21220	100	0	21220	4.81	4809				
	Sub-Total	79827			79827	18.09	18089	17739	250	100	
EASTERN	EL-DA'AEN	7975	100	827	8802	1.99	1995				
	FIRDOUS	8173	100	847	9020	2.04	2044				
	'ADIILA	7838	100	812	8650	1.96	1960				
	ABU MATAAR	4955	100	514	5469	1.24	1239				
	Sub-Total	28941		3000	31941	7.24	7238	6658		580	
WESTERN	ZALINJI	13579	100	1584	15163	3.44	3436				
	'AZUM	12141	100	1416	13557	3.07	3072				
	Sub Total	25720		3000	28720	6.51	6508				6508
J.MARRA	NYERIETE	8505	100	424	8929	2.02	2023				
	GOLO	5078	50	253	2792	.63	633				
	ROKIRRO	6469	50	323	3557	.81	806				
	Sub-Total	20052		1000	15279	3.46	3462				3462
SOUTHERN	GEREIDAH	8349	100	1037	9386	2.13	2127				
	BURAM	19540	100	2427	21967	4.98	4978				
	EL-RADOM	5723	50	711	3572	.81	810				
	TULLUS	6644	100	825	7469	1.69	1693				
	Sub-Total	40256		5000	42395	9.61	9607	8828		780	
S.WESTERN	IDD' GHANEM	8652	50	270	4596	1.04	1041				
	RAHID BIRDI	6806	50	212	3615	.82	819				
	KUBUM	9289	50	290	4934	1.12	1118				
	KATIILA	7338	100	229	7567	1.71	1715				
	Sub-Total	32085		1000	20712	4.69	4693	4643		50	

TABLE 5.1 SEED DISTRIBUTION CONTINUED

AREA COUNCIL	RURAL COUNCIL	H/HOLD	NEED RATE	MIGRANT H/HOLDS	ADJUST H/HOLD	ALLOC PERCENT	ALLOC BAGS	THROU COUNCI	THROU SIGNED	THROU WSDC	THROU JMRDP
(B) SOUTH DARFUR					= (axb) +c		=ex 100,000				
WADI SALEH	GARSILA	15936	50	1586	9554	2.17	2165				
	MUKJAR	12131	50	1208	7272	1.65	1648				
	ZAMI BAYA	7467	100	743	8210	1.86	1861				
	BINDISI	4646	100	463	5109	1.16	1158				
	Sub Total	40180		4000	30147	6.83	6831				6831
GRAND TOTAL SOUTH DARFUR		241341	ADJUSTED>>>		249019	56.43	56429				
GRAND TOTAL DARFUR REGION		450619	ADJUSTED>>>		441297	100.00	100,000				
ASSUMED MIGRANT INFLOW TO SOUTH DARFUR				17000							

Note:- Source :- Department of Statistics and Project Estimates.

1. Household number based on Rural Sedentary Households, 1983 Census.
2. Migrants refers to those households expected not to return home.

The total number of rural sedentary households according to the 1983 Census is 450,619. and the figure adjusted for need and migration is 441,297. ( see Table 5.1). With 100,000 seed packets this implies that about 23 percent of households would benefit from the project and clear guidelines were therefore needed to ensure that distribution was made to the households most in need. The criteria for distribution within Villages Councils were finalised in order that priority was given to: -

- the most needy households who, whilst having a small area of land, have neither seeds nor the money with which to buy them.
- households headed by women, who will generally be in a more serious predicament than other households.
- households in areas where seeds are not available for purchase.
- boarding schools on Schedule A (open in the rainy season).
- Khalawi ( Koran ) Schools .

The general allocation was stated as one seed packet per target household, with 10 packets each given to boarding and Khalawi Schools. However, it was necessary to further define "household" to take account of family size and to ensure that female-headed households were given first priority. A "household" was therefore defined as :-

- a woman with children, whether married, separated or divorced.
- a woman whose children have left her, whether married, separated or divorced.
- an older person or couple living alone.

Thus a household consisting of a younger woman with children and her absent husband's parents would receive two packets, and an old woman living alone, who would not normally be considered a "household", would nevertheless receive a seed packet. Data from an Oxfam survey in Kebkabieh (unpublished) shows an average of 1.6 females between the age of 16 and 60 per "household" and application of the above criteria would therefore result in a similar number of seed packets being issued to a "census household". If this is the case, the number of census households benefiting from the distribution will be about 62,500, or 14 percent of the adjusted regional total.

### 5.3 Distribution Network

Government services in Darfur Region have never been well developed in relation to the need for them, and in recent years budgetary shortfalls have further restricted the activities of many departments. Shortage of vehicles, fuel and equipment has prevented most of the technical departments from conducting a significant field programme; this is reflected in the small number of personnel currently posted outside the main centres. This situation places severe limitations on any programme or project that requires wide regional coverage in the rural areas.

The Regional Ministry of Agriculture is no exception. It is presently suffering from a chronic shortage of vehicles, fuel and development funds, and the situation is most acute for the small number of field staff posted at District level. In South Darfur, the RMA has 10 staff posted outside Nyala (two Extension Officers, one Horticulturalist, two Agricultural Inspectors (Land Registration) and five Agricultural Services Officers); these officers mostly have no transport. Seven of them are posted at Area Council

Headquarters ( Garsila, Zalengei , Buram and El Dae'in ) and only three are posted at Rural Council level ( Rahid El-Birdi , Tullus and Qereidah). The situation is similar in North Darfur.

Two major projects in South Darfur are concerned with rural development, Jebel Marra Rural Development Project (JMRDP) working in Western - Jebel Marra and Wadi Saleh Districts; and the Western Savannah Development Corporation (WSDC) working in Central, South Western, Southern and Eastern Districts. There are no similar projects in North Darfur. JMRDP has a well developed Extension Service and currently has 50 Extension Assistants posted in Village throughout its project area. It also has a Community Development Department that is active in seven centres. Three of the extension assistants and all of the community development assistants are women. Consequently the project is in a good position both to distribute seeds and to make special efforts to reach women farmers. WSDC on the other hand has no extension service and can only distribute seeds to its settlement areas, a total of about 1250 households.

Settlement

Rural Council

Um Rakuba

Adiila (Eastern Dist.)

El La'ed

Abu Mataaring (Eastern)

El Amud el - Akhdar

Buram (Southern)

Nakhara

Buram

The School Garden and Nutrition Education Department (SGNED) of the Regional Ministry of Health, based in El Fashir and Nyala , has a programme of selecting intermediate - school girls from villages and training them for three months in basic nutrition education , it then supports them in their home villages as permanent nutrition workers. SGNED has workers posted in 12 centres in North Darfur, and eight centres in South Darfur. The contact ratio is 25-50 households per worker, therefore SGNED is in a position to reach about 1000 households . The SGNED network, whilst in many ways ideally suited to the purpose of Jubraka seed distribution , can effect only very limited coverage.

The SSU Womens' Union was disbanded following the change of Government in April and the present status of its membership is not clear. In any case it is essentially an urban -based organisation having rural representative in

only a few villages in El Fashir Rural Council ( mostly in the Wadi Golo Area ) . Other possible networks include the Ministry of Health workers posted at village level and school teachers, but again coverage is incomplete.

The network of the Ministry of Regional Affairs is the only system in Darfur Region that has full representation down to Village Council level, backed by the necessary administrative and logistical framework. Its officers are charged not only with responsibility for general local government matters but also with the physical distribution of centrally allocated and rationed commodities such as sugar, and this year, food - aid . The Local Government network is also being used for the distribution of USAID and EEC grain seed. Committees have been set up at all levels to decide on food aid allocation and these can also handle the distribution of seeds at Rural and Village Council level. The other major advantage of this system is that it is only the Village Councils , and in particular the village sheikhs, who are ultimately responsible to their own people and who must therefore bear the consequences of any maldistribution of commodities. This is not to say that the system is perfect, and abuses and distortions do occur . In contrast, officials of the technical departments , whilst theoretically in a position to make unbiased distribution , are not responsible to the people of their in the same way as the sheikhs. In any case , the argument is academic since the technical departments are simply not represented in many areas.

For this reasons, it was decided to use the Local Government network for the distribution of the bulk ( 81 percent ) of the Jubraka seeds ( Table 5.2 ) JMRDP was asked to distribute in Western, Jebel Marra and Wadi Saleh Districts of South Darfur ( 16.5 percent ), WSDC distributed to its settlements ( 1.5 percent ), and the SQNED distributed in the 20 villages in which it has nutrition workers ( 1 percent ) of seed packets.

TABLE 5.2 SEED DISTRIBUTION NETWORK

AREA COUNCIL	RURAL COUNCIL	No. OF BAGS/CARTONS
(A) N. DARFUR		
1. NORTH EASTERN	MELLIT	6
	MALHA	2
	Sub Total	8

Continued.

TABLE 5.2 SEED DISTRIBUTION NETWORK

AREA COUNCIL	RURAL COUNCIL	No. OF BAGS/CARTONS
<b>(A) N. DARFUR Continued</b>		
<b>2. NORTHERN</b>	KUTUM RURAL	9
	UM BURU	2
	KARNOI	2
	Sub Total	13
	<b>3. CENTRAL</b>	EL-FASHER RURAL
	TAWIILA	6
	KORMA	5
	Sub Total	28
<b>4. WESTERN</b>	EL-GENEINA RURAL	29
	HABIILA	16
	SALII'AH	17
	Sub Total	62
<b>5. EASTERN</b>	UM KEDAADA RURAL	5
	EL - LA'IT	6
	Sub Total	11
<b>6. SOUTHERN</b>	KEBKABIEH	13
	SERAIF	13
	SERAF ' UMRA	5
	Sub Total	21
<b>GRAND TOTAL NORTH DARFUR</b>		<b>143</b>
<b>(B) SOUTH DARFUR</b>		
<b>1. CENTRAL</b>	NORTH NYALA	13
	EAST NYALA	14
	S.W. NEALA	18
	KAS	15
	Sub Total	60

Continued.

Continued.

TABLE 5.2 SEED DISTRIBUTION Continued

<u>AREA COUNCIL</u>	<u>RURAL COUNCIL</u>	<u>No. OF BAGS/CARTONS</u>
<b>(B) S. DARFUR Continued</b>		
2. EASTERN	EL -DA'AEN RURAL	7
	FIRDOUS	8
	'ADIILA	6
	ABU MATAARIQ	4
	Sub Total	25
3. SOUTHERN	QEREIDAH	7
	BURAM	15
	EL-RADOM	3
	TULLUS	6
	Sub Total	31
4. SOUTH WESTERN	IDD EL-GHANEM	3
	RAHID EL-BIRDI	3
	KUBUM	4
	KATIILA	6
	Sub Total	16
5. WESTERN		Via JMRDP 22
6. JEBEL MARRA		12
7. WADI SALEH		Via JMRDP 22
<b>GRAND TOTAL SOUTH DARFUR</b>		<b>188</b>
<b>GRAND TOTAL DARFUR REGION</b>		<b>331</b>

Source: Project Studies

Note:- Bags /Cartons repacked to contain approximately 295 packets.

#### 5.4 Seed Packing and Transportation

Seeds were transported to Nyala by lorry and were stored initially at the Save the Children Fund Store in Nyala's oil-mill area. Most of the cardboard cartons were damaged on the journey and were insecure, and seeds were repacked into woven nylon sacks, 295 packets per sack. These sacks proved to be a much better way of handling the seed.

Owing to the relatively small quantities involved, it was decided initially to transport seed on trucks carrying food aid sorghum direct to the Rural Councils. An agreement was made with the SCF Nyala sub-contractor and the assistance of Arkel - Talab ( main USAID contractor) was offered. The substitution rate when loading was three seed bags ( 15 kg each ) in place of one US sorghum bag, and the haulage rates were initially calculated on this basis. The distribution schedule was also circulated to the Senior Executive Officer of South Darfur Province who is chairman of the Grain Distribution Committee and to the transport organiser of SCF in order that small shipments could be carried by Government or SCF Landrover.

In the event , only 22 percent of the seed was carried by the SCF sub-contractor, and problems of coordination continually arose. Jebel Marra Project provided transport from Nyala to Zalengei and thence around the three western districts. Some deliveries were made by SCF Landrover, and some seed was collected by Area and Rural Council Officers. A separate truck contract was made with a Nyala transport agent when it became clear that the original truck contract was not working well, and finally, seed was delivered to a number of Rural Councils by the Coordinator .

Distribution from the Rural Councils was by collection, as is also the case with sugar, food aid and USAID/EEC seed.

#### 5.5 Staff.

The Regional Ministry of Agriculture appointed S/d Imam Malik Adam Ali of the Horticulture Department as Counterpart Manager. He was simultaneously transferred to Nyala to become Deputy Head of Department. S/d Imam was able to devote about 80 percent of his time to the Jubraka Project. No other Government staff were formally appointed, but the services of the Horticulture Department's clerical staff were made available on a day to day basis. In addition to Government staff, a storekeeper and an assistant driver were

recruited privately on a daily paid basis. Assistance was received from the staff of many other organisations, in particular Save the Children Fund, WSDC, JMRDP, SGNEP, the Ministry of Regional Affairs and Oxfam.

#### 5.6 Documentation.

As in other regions, the standard documentation was used:

- Centre to Rural Councils : HTS Waybill .
- Rural Council to Village Council : Standard duplicate book.

Where delivery was made through an Area Council, a separate covering HTS Waybill was issued. This was the case with later shipments following a new regulation, issued by the Provincial Administration in June that all aid commodities must be shipped through Area Councils.

As well as the standard extension leaflet ( 10 per sack ), issued from Khartoum, the following extra documentation was issued:

- a. letter to Rural Council Officers outlining distribution criteria, record keeping required and informing them of any direct deliveries made by other organisations in their areas, for example by WSDC or SGNEP.
- b. additional information leaflet for Village Councils stating distribution criteria ( according to the number of VCs in the Rural Council ).
- c. additional recording sheet for final distribution, to be completed by the VC requiring recipients' names, sex and status (resident or migrant).

The aim of these was to emphasise and re-emphasise the distribution criteria, and the record of recipients' names was included to assist subsequent monitoring and to indicate to Village Councils that the Project would ask for justification of the distribution made.

A letter was also issued to Regional Ministry of Agriculture staff instructing them to participate in their Rural Council distribution committees (agricultural staff sit on these committees ) and in general to assist with distribution.

#### 5.7 Radio Broadcasting.

The Nyala radio station broadcasts over the whole of South Darfur and can be received from the Chad border to the boundary with Kordofan. Signal strength is weakest to the north, but extends to El Fashir and El Geneina . The Project

in cooperation with the Ministry of Regional Affairs ( Information Section), arranged for a series of broadcasts:-

Date :	Feature	Subject
20th May	News item	Meeting of Area Council Officers on 26th May to discuss Jabraka distribution .Agenda and agreed items mentioned.
3rd June	News item	General description of the Project, mentioning agreed distribution criteria.
8th June	Interview	A question and answer interview with S/d Imam Malik, Counterpart Manager, in which the objectives of the project were discussed.

Additional broadcasts are planned. The first will be a feature on the importance of Jubraká cultivation in the farming system and in the provision of food. This will include interviews with farmers, including women cultivators. Subsequently, and repeated through July, there will be a programme of basic extension advice on cultivation of vegetables.

## 5.8 Contacts.

### 5.8.1 Regional Ministry of Agriculture.

#### El Fashir

Dr. Ahmed Ibrahim Yusif	Director.
Ali Mohamedein	Director Agriculture Services.
Adam Ibrahim Khaliel	Director Range and Pasture .
Abd El Jabaar Fuad	Director Finance.
Mohmond Abdallah	Deputy Director Agricultural Services
Omar Mohamed	Director Extension.

#### Nyala

Ahmed Musa Said	Director Extension
Yusif Ali Mahdi	Director Agriculture Production
Wassila Abbas	Director Horticulture.

5.8.2 Ministry of Regional Affairs.

El Fashir

Abbas Abdel Manai

Head , Drought Technical Committee

Tahir El Bashir

Drought Committee.

Nyala

Mohedein El Amin

Senior Executive Officer S.Darfur

Fathi El Rahim

Secretary, Grain Distribution Committee.

Abiib Mahjoub

Information Officer (Nyala Radio)

5.8.3 WSDC

James Morton

PMEU

Hussan Abd El Gadir

Settlement Officer

5.8.4 JMRDP

Mohamed Abdullah El Hadi

Deputy CAO

El Tayeb Saleh Gadai

Community Development Officer

5.8.5 Save the Children Fund

Chris Eldridge

Michael Dic

5.8.6 Oxfam

Karen Twining

Adrienne Martin

Nigel Taylor

5.8.7 School Gardens and Nutrition Education Department

El Fashir

Nafissa Sinaari

Nyala

Al Amina Yakin Ahmed

5.8.8 Miscellaneous

Yvonne Ayoub

Ex SSU ]

Women Union

Omar Zakaaria Bakhie

Ex SSU ]

## CHAPTER SIX

### KORDOFAN REGION

#### 6.1 Introduction

##### 6.1.1 General

Kordofan Region consists of the Provinces of North and South Kordofan . The main East/West railway bisects the Region and is linked to El Obeid (the Regional capital ) by a recently constructed all weather road and to Kadugli (the capital of South Kordofan ) by an old and poorly maintained asphalt road. For the purpose of this Project the Region can be sub-divided into two sections, the Goz Zone or sandy areas of the north and west, and the clay plains / mountains zone of the south and south east.

##### 6.1.2 The Goz Zone.

This part of the Region consists of gently undulating sandy plains with occasional small rocky jebels (mountains) . The rainfall is low, for example El Obeid receives only 400 mm per year, and the growing season is short ( see Table 6.1 ) .

The inherent soil fertility is low which has led to a traditional cropping pattern of four years cropping followed by 12 or more years fallow, however, an increasing population coupled with desert encroachment has tended to result in a reduction in the fallow period.

The main crops grown are bulrush millet , sorghum and groundnuts, other crops include kerkadah, sesame, cow pea and water melons. Gum arabic is produced during the fallow period by tapping the naturally occurring gum producing species of Acacia. In those areas where the ground water is near the surface horticultural crops are irrigated from shallow wells.

The Goz areas have always been an important grazing area for large nomadic herds of sheep, goats and camels, but drought in recent years has seriously depleted the livestock population.

TABLE 6.1 CLIMATIC DATA

	J	F	M	A	M	J	J	A	S	O	N	D
El Obeid												
Main Temp °C	24.8	26.0	28.8	31.5	32.7	31.5	29.0	27.5	28.5	30.1	28.6	25.5
Rainfall mm	-	-	1.0	2.0	16.0	39.0	111.	142.	63.0	21.0	1.0	-

	J	F	M	A	M	J	J	A	S	O	N	D
Kadugli												
Mean Temp. °C	26.1	27.7	30.3	31.3	30.7	28.6	26.8	26.1	26.6	27.4	27.5	26.4
Rainfall mm	-	-	2.0	14.0	81.0	107.0	139.0	172.0	139.0	70.0	2.0	-

Source:- Sudan Guide , Sudan Meteorological Department.

### 1.3 The Clay Plains / Mountain Zone.

This is the largest and most important crop production area in Kordofan Region.

It occupies most of South Kordofan Province and consists of jebel massifs separated by large tracts of dark, cracking clay soils which are self mulching and have a high cation exchange capacity . They are non-sodic and non-saline

but have low nitrogen, phosphorus and organic carbon content. There are also large areas of jebel footslope soils which are coarse to medium textured, poorly structured and easily eroded. The majority of villages are located on jebel footslope soils. The main crops are sorghum , sesame and cotton , other crops include bulrush millet , groundnuts, cowpea , and vegetables ( tomato, egg plant, cucurbits, leaf vegetables ).

In those places with a high water table there are extensive areas of mango, lime and guava trees; vegetables are also grown under irrigation from shallow wells.

There is a large Mechanised Farming Corporation scheme at Habila where some 42,000 ha are divided into 1000/ 1500 ha farms for growing sorghum and sesame.

There are also extensive areas of mechanised crop production in the east of Rashad District.

The livestock population in South Kordofan ranges from 550,000 animals in the wet season to 650,000 in the dry season, however, these numbers may have decreased as a result of stock losses during the drought.

### 2 Farming Systems.

On the Goz the villages tend to be more compact with little if any , crop production around the house . There are however, often small gardens on the periphery of the village or on nearby areas of heavier soils, which are used for producing some vegetable type crops; the main grain production areas are located further from the village . In South Kordofan it is traditional to have a small area of crops ( vegetables and some sorghum ) around the house, another 'near farm' usually within 1-2 km of the village and a ' far farm ' or main sorghum plot which can be up to 15 km from the village.

Most agricultural operations are by hand although tractors are used to prepare land for the cotton crop and on the Mechanised Farming Schemes. There is some ox-mechanisation on the Goz but only on a small scale.

### 6.3 Agricultural Services.

The Regional Offices of the Ministry of Agriculture (MOA) are at El Obeid.

They are responsible for supervising horticultural development and extension services which have sub-offices at Provincial and District headquarters.

Although the MOA offices are adequately staffed, the effectiveness of the services offered are constrained by a shortage of vehicles, spare parts and fuel. Most of the vehicles have petrol engines but only diesel fuel is available in quantity.

Agricultural research has been the responsibility of the Western Sudan Agricultural Research Project (WSARP) funded by USAID. This latter organisation is in the process of withdrawing from the Project and it is assumed that WSARP will come directly under the Agricultural Research Corporation (ARC) at Wad Medani.

The Nuba Mountains Agricultural Production Corporation (NMAPC) is responsible for all services on the cotton schemes in South Kordofan. It is a parastatal organisation with its own agricultural and mechanisation staff.

### 6.4 Seed Distribution.

#### 6.4.1 Selection of Areas.

Population details were obtained from the Statistics Department in El Obeid; details of the number of rural settled families (RSF) are given in Table 6.2 and show quite clearly that 100,000 packets of seed are sufficient for only 28 percent of this section of the population. Discussions were held with the Regional Ministry of Agriculture in El Obeid and with CARE the voluntary organisation responsible for distributing food-aid in Kordofan, to try and identify those areas which should receive seeds. It was apparent that there were divergent opinions on this point as the greatest chance of successfully producing crops is in the South but the need in the North is probably greatest as it is in this area that the population is most affected by the drought.

The Co-ordinator finally decided to distribute 80 percent in the south and 20 percent in the North the rationale being :-

- the higher rainfall in the south increases the chances of successful crop production.

- of the six crops, maize and tomatoes are seldom grown in the north except where irrigation water is available ; also okra and sorghum are not widely grown.
- the tradition of household gardens is widely practiced in South Kordofan, indeed the household without a "Jubrika " is very much the exception.
- the main vegetable production areas in North Kordofan rely on irrigation from shallow wells consequently the farmers were able to produce crops in 1984 and are thus better situated to buy seed if they have not retained any from the previous crops.

During the discussions with the Ministry of Agriculture it was decided to exclude Abyei Rural Council (RC) on the grounds of security and distance, Muglad RC on distance and crop suitability , El Hamadi and Dubeibat RC on crop suitability and Habila RC because most of its area is devoted to Mechanised farming. This gave a total of 138,229 RSFs in South Kordofan of which 57 percent would receive a packet of seed.

TABLE 6.2 POPULATION DATA KORDOFAN REGION

SOUTH KORDOFAN			NORTH KORDOFAN					
DC	RC	RSF	DC	RC	RSF	DC	RC	RSF
DILLING	HABILA	7588	EL NAHUD	SOGE EL GAMAL	5945	SODARI	SODARI	5276
	DELAMI	4425		WAD BANDA	11467		EAMRATE EL	3524
	EL HAMADI	2887		EL KHEWI	6893		WIZ	
	DUBEIBAT	4961		ABU ZABAD	8474		GABRAT EL	5760
	KURGUL	5084		EL NAHUD	10352		SHEIKH	
	SALARA	12135		EL ODAIYA	8964		HAMRATE EL	1327
							SHEIKH	
KADUGLI	EL BURAM	15536	BARA	GIBESH	11943	UM BADIR	2752	
	HEIBAN	18538		EL MAZROUB	4111	UM RUABA	15842	
	UM DOREIN	13685		UM KEREIDIM	5039	EL RAHAD	13159	
	KADUGLI	9130		GERIAGEH	2752	SHURKEILLA	5377	
EL FULA	LAGOWA	12602	BARA	UM KEREIDIM	5039	WAD ASHAN	8897	
	EL FULA	4989		GERIAGEH	2752	UM DAM	14021	
	MUGLAD	5931		BARA	3553			
	ABYEI	3772		TAIBA ZIGETER	9912			
				UM GARFA	3615			
			UM SAIYALA	7805				

TABLE 6.2 POPULATION DATA KORDOFAN REGION

SOUTH KORDOFAN			NORTH KORDOFAN		
DC	RC	RSF	DC	RC	RSF
RASHAD	TALODI	9956	EL OBEID	HARTAGAT	4403
	RASHAD	14817		KAZIGAIL	5577
	ABU GUBEIHA	6526		ABU HARAZ	5791
	ABBASIYA	10806		UM CHARA	3072
TOTAL SOUTH KORDOFAN 163,368			TOTAL NORTH KORDOFAN 195,603		

Source:- Statistics Office, El Obeid.

Notes :- 1. DC District Council

2. RC Rural Council

3. RSF Rural Settled Families

4. The data were obtained during 1983 census, since then Rural Council boundaries have been realigned and new Rural Councils created.

The situation in North Kordofan is more complicated because of low rainfall and unsuitable soils ; it was decided, therefore , in conjunction with MOA, that seeds would be distributed in El Odaiya , Abu Zahad , Hartagat, Kazigail, Abu Haraz and El Rahad RCS. The justification for this decision was that these RCs all have areas of heavy , more fertile soils and some tradition for growing the crops which make up the seed packets.

#### 6.4.2 Selection of Villages.

A decision was required to identify those villages councils (VC) which would receive seed and what proportion of RSFs in each VC should be included. Where possible VCs were selected in consultation with local agricultural or RC staff but in those areas not visited, village selection was left to the individuals responsible for seed distribution . These areas were Talodi, Lagowa, Abbasiys Rashad , El Fula and Karshola RCs; the latter three were visited but there was no opportunity to select a list of villages. The main criteria used to select villages were the availability of seed and accessibility together with any local knowledge regarding crop and soil suitability.

There was considerable discussion on the question of how many RSFs in each village should receive seeds but as there was no consensus of opinion the Co-ordinator decided that where possible it should be 100 percent.

This decision meant that some villages would receive no seeds at all, but it was made in the knowledge that several villages have inhabitants from different tribes and it would be difficult to ensure an equable distribution to each tribe. It would also have placed an unfair responsibility on the Head of the VC, the Chief or the Sheikh who would have had to decide which families did or did not receive a packet of seeds.

In some areas, such as Dilling District Council (DC) the policy of one packet per RSF was amended as a result of local knowledge available to the Senior Inspector of Agriculture.

#### 6.4.3 Seed Distribution.

The Director General of Agriculture in Kordofan Region very kindly seconded Hashim Hassan, Senior Inspector to work full time on the Project. There is no doubt that Syd. Hashim's presence greatly facilitated the smooth running of the distribution programme.

A store was rented in Dilling as the most central district town in Kordofan Region. Seeds were distributed to Kadugli, Rashad, El Fula and El Obeid using the Co-ordinators' vehicle.

Fuel for the distribution programme was borrowed from the Nuba Mountains Agricultural Production Corporation, further supplies were purchased in El Obeid and distributed by souk lorry.

The original intention was to use MOA and the Co-ordinators vehicles to visit each selected village where the appropriate number of packets would be handed over to a responsible person such as the Chief of the Village Council. The recipient would then sign a receipt showing how many packets he received. This method was successfully used to distribute the majority ( 59 percent ) of the seeds as shown in Table 6.3. At the same time as handing over the seeds, several copies of cyclostyled extension leaflet ( see Appendix C ) were distributed and an explanation given detailing the rationale behind the Project.

Unfortunately it was not possible to follow this method over the entire Region as an early start to the rains in South Kordofan made travel by road very difficult as well as making it essential to get the seeds to the farmers as quickly as possible. Other methods of distribution had to be devised and the rest of the seed was distributed as follows:-

- about 11 percent was handed over to RCs to be distributed to an agreed schedule of VCs.
- about 23 percent was given to RCs, local MOA offices or the local NMAPC office, each of whom was to prepare a schedule of villages and to distribute the packets.

TABLE 6.3 SEED DISTRIBUTION SCHEDULE

KEY:- (A) DISTRIBUTED TO VILLAGE COUNCILS (B) DISTRIBUTION SCHEDULE AGREED WITH RCS AND MOA

(C) RECIPIENT TO PREPARE DISTRIBUTION SCHEDULE (D) MOA TO HAND OUT AT EXTENSION OFFICE

DD	RC	(A)		(B)		(C)			(D)
		No. of Villages	No. of Packets	No. of Villages	No. of Packets	RC	MOA	NMAP	Extension Office
DILLING	DELAMI	3	2400	-	-	-	-	-	-
	KURGUL	8	2700	-	-	-	-	-	-
	SALARA	8	6750	-	-	-	-	-	-
	DILLING	3	1350	-	-	-	-	-	-
	MOA	-	-	-	-	-	-	-	1050
KADUGLI	EL BURAM	16	11550	-	-	-	-	-	-
	HEIBAN	9	8550	-	-	-	-	-	-
	UM DOREIM	12	6170	-	-	-	-	-	-
	KADUGLI	16	4889	-	-	-	-	-	1500
	MOA	-	-	-	-	-	7200	-	-
EL FULA	LAGOWA	-	-	-	-	-	-	-	-
	EL FULA	1	915	-	-	-	-	-	-
RASHAD	TALODI	-	-	-	-	2400	-	5700	-
	RASHAD	-	-	-	-	-	-	-	-
	ABU GUBEIHA	12	2600	-	-	-	-	-	-
	ABBASIYA	-	-	-	-	-	-	-	-
	KARSHOLA	1	650	-	-	-	-	-	-
	UM BEREIBEITA	4	3300	-	-	-	-	-	-
	MOA	-	-	-	-	-	-	-	950
EL NAHUID	EL ODAIYA	1	160	-	-	-	-	-	-
	ABU ZABAD	-	-	9	3000	-	-	-	-
	MOA	-	-	9	-	-	-	-	3300

Availability of Food Items	No. of Villages	Percentage
Ample	1	4
Very little, cost Ls. 4-5 per malwa ( 3 kg )	15	58
Nil	10	38
<u>Availability of Food Items</u>		
Onions less than Ls. 1 per roll ( 0.45 kg )	7	27
more than Ls. 1 per roll	4	15
Dried Okra less than Ls. 5 per malwa	2	8
more than Ls. 5 per malwa	5	19

a) Market Questionnaire

Some 6 percent was given to local MOA extension and Horticultural offices for distribution to farmers asking for seeds, the Kadugli and Dilling offices were to give up to 300 packets each to the Social Welfare Nutrition and to the School Gardens Programme. - 1 percent was given to CARE, El Obeld which is the voluntary organisation responsible for distributing food aid in Kordofan Region, CARE is also assisting with the distribution of USAID sorghum and millet seeds. The names of villages which received seeds, the number of RSFs, and the number of packets per village are given in Table 6.4 . Details of seed distributed to schedules drawn up by RCS , MOA and NMAPC were not available at the time of writing . These are to be sent to the MOA, El Obeld who will forward them to the Consultants Office in Khartoum. Receipts for seed distributed to the village councils were deposited along with other Project documents at the Khartoum Office of Hunting Technical Service Limited.

6.4.4 Questionnaire Surveys.

Prior to commencing the seed distribution programme some simple questionnaires were drawn up to try to obtain data on local markets, availability of food and seeds and the importance of household gardens in the agricultural sector. Copies of questionnaires are included at Appendix C. While the actual distribution of seed was the priority activity , it was possible to complete 26 market and 23 general questionnaires, this is equivalent to 23 percent and 20 percent of the villages which were visited. The information given below represents a consensus opinion and not that of individual farmers as there were always several farmers present when completing the questionnaire answers were consistent in showing that the quantities of seed and

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a) Market Questionnaire	No. of Villages	Percentage
<u>Availability of food Grains</u>		
Ample	1	4
Very little; cost Ls. 4-5 per malwa ( 3 kg )	15	58
Nil	10	38
<u>Availability of Food Items</u>		
Onions less than Ls. 1 per rotl ( 0.45 kg )	7	27
more than Ls. 1 per rotl	4	15
Dried Okra less than Ls. 5 per malwa	2	8
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DC	RC	(A)		(B)		(C)			(D)
		No. of Villages	No. of Packets	No. of Villages	No. of Packets	RC	MOA	NWAP	Extension Office
DILLING	DELAMI	3	2400	-	-	-	-	-	-
	KURGUL	8	2700	-	-	-	-	-	-
	SALARA	8	6750	-	-	-	-	-	-
DILLING	DILLING	3	1350	-	-	-	-	-	-
	MOA	-	-	-	-	-	-	-	1050
	EL BURAM	16	11550	-	-	-	-	-	-
KADUGLI	HEIBAN	9	8550	-	-	-	-	-	-
	UM DOREIM	12	6170	-	-	-	-	-	-
	KADUGLI	16	4889	-	-	-	-	-	1500
EL FULA	MOA	-	-	-	-	-	-	-	-
	LAGOWA	-	-	-	-	-	7200	-	-
	EL FULA	1	915	-	-	-	-	5700	-
RASHAD	TALODI	-	-	-	-	2400	-	-	-
	RASHAD	-	-	9	3700	-	-	-	-
	ABU GUBEIHA	12	2600	-	-	-	-	-	-
RASHAD	ABBASIYA	-	-	-	-	-	6300	-	-
	KARSHOLA	1	650	-	-	1280	-	-	-
	UM BEREMBEITA	4	3300	-	-	-	-	-	-
EL NAHUID	MOA	-	-	-	-	-	-	-	950
	EL ODALIYA	1	160	9	3140	-	-	-	-
	ABU ZABAD	-	-	9	3000	-	-	-	3300
MOA	-	-	-	-	-	-	-	-	

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KEY: (A) DISTRIBUTED TO VILLAGE COUNCILS (B) DISTRIBUTION SCHEDULE AGREED WITH RCS AND MOA  
 (C) RECIPIENT TO PREPARE DISTRIBUTION SCHEDULE (D) MOA TO HAND OUT AT EXTENSION OFFICE

DC	RC	(A)		(B)		(C)		Extension NMAP Office
		No. of Villages	No. of Packets	No. of Villages	No. of Packets	RC	MOA	
BARA	MOA	-	-	-	-	-	-	600
EL OBEID	HARTAGAT	2	1060	-	-	-	-	-
	KAZIGAIL	11	3845	-	-	-	-	-
	ABU HARAZ	-	-	-	-	1200	-	-
UM RUABA	MOA	-	-	-	-	-	-	900
	UM RUABA	1	155	-	-	-	-	-
	EL RAHAD	12	2810	10	1500	-	-	-
CARE, EL OBEID	MOA	-	-	-	-	-	-	300
								( 900 ) 1.
TOTAL			59854		11340	3600	14700	6500
GRAND TOTAL								101,694

Source :- Seed Distribution Programme.

Note :- 1,900 packets given to CARE EL OBEID

**Availability of Food Items**                      **No. of Villages**                      **Percentage**

Cowpea	Rs. 8 per malwa	1	4
Groundnuts	Rs. 8 per malwa	2	8

**Availability of Seeds**

No seed available		20	77
Cowpea	Rs./35 per tea glass	2	8
Okra	Rs./25 to Rs. 1 per tea glass	5	19
Bulrush millet	Rs. 6 per malwa	1	4
Sesame	Rs. 6 per malwa	1	4

Although the total number of completed questionnaires is small, the answers were consistent in showing that the quantities of food and seed available in the villages was either very little or nil. There were indications, however, that where a village had a definite market day each week and if the market was sufficiently large, then merchants from the main towns would bring sorghum for sale. The overall impression resulting from the survey and many conversations with merchants civil servants and private individuals was that food was readily available to those with the means to purchase it.

**b) General Questionnaire.**                      **No. of Villages**                      **Percentage.**

Villages having household gardens as part of farming system	23	100
Women and children only responsible for household garden	9	39
Entire family responsible	14	61
Villages where everyone has a household garden	20	87
Villages where most people have a household garden	3	13
Area of household garden less than one feddan	17	74
Area of household garden more than one feddan	6	26
All the produce consumed by family	5	22
Any surplus produce sold	18	78

Crop	Farmers Growing the Crop		Importance in the Household Garden %				
	Number	Percentage	First	Second	Third	Fourth	Fifth
Sorghum	23	100	52	26	4	17	-
Maize	22	96	43	26	13	4	9
Okra	21	91	17	26	30	13	4
Cucurbits	18	78	-	-	30	35	13
Cowpea	11	48	-	-	13	9	26
Tomato	6	26	4	-	4	4	13
Sesame	5	22	-	4	4	4	9
Groundnuts	4	17	-	-	9	-	9
Bulrush millet	4	17	-	-	4	13	-
Water melon	2	9	-	-	-	4	4

These figures illustrate clearly that sorghum, maize, okra and cucurbits (cucumber pumpkin) are the most popular crops grown in household gardens, cowpea is also fairly popular being grown in nearly 50 percent of the villages. The remaining crops were grown by 25 percent or less of the villages indicating that they can be considered as only minor crops.

The sorghum grown on many of the household plots is a mixture of several types and is usually referred to as Najad. It is relatively early maturing (90-120 days) sweet stemmed and with a wide variation in seed colour. Although farmers often harvest Najad after 60 days it is only at the milky dough stage; it does not reach full maturity until about 90 or more days after planting.

### C) Monitoring Questionnaire.

This questionnaire did not reach Kadugli until seed distribution in South Kordofan was almost completed consequently it was not distributed as planned. Copies were given to the following individual / offices.

Yagoub Fadl Bashir, Chief of Village Council, Um Jamjaka, Karshola R.C.

Mansour Ali Habiballa, Sheikh, El Sahal, Abu Gubeila R.C.

Ibrahim Hassan Musa, Horticulturalist, Um Berembeita.

Mohamed Saleh Abdella, Senior Inspector Agriculture, Rashad.

Senior Inspector Agriculture, Abbasya to be given a copy by the SIA Rashad.

El Agib Bilal, Extension Officer, Kadugli.

Mohamed El Taib, Senior Inspector Agriculture, Dilling.

The MOA Officers in Kadugli and Dilling will arrange for the questionnaires to be completed by the Chiefs of two or three Village Councils in each rural council. When the questionnaire are collected each person who has filled one in should be paid Ls. 10.00.

TABLE 6.5 DETAILS OF VILLAGE  
RECEIVING SEEDS

Date	Village	Pop	Pkts	Date	Village	Pop	Pkts
9.6.85	SAWAN KHALIFA	180	180	9.6.85	GOZ EL SHAU	144	155
9.6.85	SAWANI BASKIR	108	120	10.6.85	EL BANJADIB	832	850
9.6.85	EL HIGEINA	300	300	10.6.85	ERIADIPO	117	120
9.6.85	EL ONDOROB <sup>1</sup>	182	182	10.6.85	UM SANGOUR	360	360
9.6.85	NAWA <sup>1</sup>	205	205	10.6.85	ALOPA EL ONDA	258	260
9.6.85	SIDRA <sup>1</sup>	127	127	10.6.85	ALOPA EL SUQ	759	760
9.6.85	KONDOKOR <sup>1</sup>	164	164	10.6.85	GIABAT EL DOMAIYA	236	250
9.6.85	UM BASMIR <sup>1</sup>	208	208	10.6.85	GIABAT EL DONKI	265	275
9.6.85	SUKKAKO <sup>1</sup>	206	206	10.6.85	GIABAT EL MAHATA	213	220
9.6.85	KIMLA ABU TILLA <sup>1</sup>	110	110	10.6.85	CHOCHAIYA	297	300
9.6.85	KIMLA EL FIDEL <sup>1</sup>	181	181	10.6.85	ALIPNOIYA	467	500
9.6.85	EL SARRA <sup>1</sup>	58	58	10.6.85	KAZIGAIL	500	500
9.6.85	GOZ BOSMARA <sup>1</sup>	191	191	10.6.85	EL TNMID	281	300
				10.6.85	KHOR EL ABYAD	206	210

Source : Seed distribution Programme

Note:- 1 Schedule agreed with RC which will distribute seeds

2 Data not available on the RSP

TABLE 6.5 DETAILS OF VILLAGES  
RECEIVING SEEDS

Date	Village	Pop	Pkts	Date	Village	Pop	Pkts
29.5.85	HEIBAN	1246	1250	2.6.85	MATARE <sup>2</sup>		300
29.5.85	NYAKMA	734	750	2.6.85	TAJILBO <sup>1</sup>	200	200
29.5.85	EL SAHAB	513	550	2.6.85	TAMORO <sup>1</sup>	275	300
29.5.85	KURGUL	542	600	2.6.85	UM SHATORO <sup>1</sup>	262	300
29.5.85	SEMASIM	152	300	2.6.85	KHOR EL RAMLA <sup>1</sup>	250	300
29.5.85	ABU ESEBYA	363	300	2.6.85	TORTAG <sup>1</sup>	298	300
30.5.85	SALARA	997	900	2.6.85	KHOR EL MANZALA <sup>1</sup>	216	200
30.5.85	NITL	771	750	2.6.85	KABOUS <sup>1</sup>	775	800
31.5.85	DABKA	829	915	2.6.85	SERAFPELLATA <sup>1</sup>	499	500
31.5.85	EL BANBOON <sup>1</sup>	422	440	2.6.85	EL AWAIYAI <sup>1</sup>	786	800
31.5.85	UM DAROTA <sup>1</sup>	171	190	3.6.85	TUCKMA <sup>2</sup>		600
31.5.85	EL SANDO <sup>1</sup>	147	160	3.6.85	DILLING <sup>2</sup>		450
31.5.85	WADI EL GANNAM <sup>1</sup>	149	170	3.6.85	JEBEL ED DOOD	130	130
31.5.85	ABU JALIB <sup>1</sup>	488	500	3.6.85	FATATAT <sup>1</sup>	229	230
31.5.85	AWLAD MOMAGIR <sup>1</sup>	412	430	3.6.85	UM SARGA	141	150
31.5.85	EL DOLEIBAYA <sup>1</sup>	347	370	3.6.85	EL SAHAL	304	310
31.5.85	AIYAK <sup>1</sup>	224	240	3.6.85	EL GARAWID	104	110
31.5.85	GILASA <sup>1</sup>	484	500	3.6.85	WAD ABEID	189	190
31.5.85	DAGANGA <sup>1</sup>	152	160	4.6.85	EL DOLEYBAT	165	170
31.5.85	EL ODAIYA <sup>1</sup>	730	730	4.6.85	UM HASHIMA	237	250
31.5.85	FAYOUG <sup>1</sup>	136	130	4.6.85	TAIYBA	140	140
31.5.85	EL MIGEIRAS <sup>1</sup>	263	260	4.6.85	KANGARA	192	200
31.5.85	MARBOTA <sup>1</sup>	202	200	4.6.85	MALAM EL KHOR	539	550
31.5.85	UM GARNJAK <sup>1</sup>	433	433	4.6.85	EL FAKHRIA	161	170
31.5.85	UM KHASMEIN <sup>1</sup>	372	370	4.6.85	UM JAMJAKA	648	650
31.5.85	JADALLA <sup>1</sup>	587	587	9.6.85	EL JAFEEL N & S	248	250
31.5.85	SHAGALIEB <sup>1</sup>	236	230	9.6.85	AJRI	134	150
31.5.85	ABU SHAMMA <sup>1</sup>	209	200	9.6.85	UM SANGOUR	79	80
31.5.85	WALI	1098	1200	9.6.85	UM SIKINA	263	275
31.5.85	KATLA	1232	1200	9.6.85	UM HABILA	165	175
31.6.85	TINDIR	797	600	9.6.85	ARADEOBA	237	250
1.6.85	KARKO	841	900	9.6.85	TEBELDIYA	130	130
1.6.85	KUJURIA	819	900	9.6.85	SEMEIH	633	650
1.6.85	KURMETY <sup>2</sup>			9.6.85	ALLA KARIM	224	250

TABLE 6.5 DETAILS OF VILLAGES

## RECEIVING SEEDS

Date	Village	Pop.	Pkts	Date	Village	Pop.	Pkts
21.5.85	MIRI JUWA	240	240	23.5.85	UM DOREIN	761	761
21.5.85	KUFA	244	244	23.5.85	KORORAK	459	459
21.5.85	LIMA	170	175	23.5.85	DOLEIBAYA	520	520
21.5.85	KANGA	228	230	25.5.85	BERDAB	321	350
21.5.85	KORONGO ABDALLAH	594	600	25.5.85	KUWEIK	329	350
21.5.85	KAFEINA	821	825	25.5.85	KEGA TIMERO	379	400
21.5.85	KATCHA A & B	1095	1110	25.5.85	SHAQ EL GAMOUS	1477	477
21.5.85	SHAT DAMAM	795	800	25.5.85	KINDIRMA	591	591
21.5.85	DALOKA	451	455	25.5.85	ABU LEYLA	305	305
22.5.85	SHAT SAFIYA	575	560	25.5.85	UM JABRALLA	591	591
22.5.85	FAMA	785	800	26.5.85	EL BIARA	569	569
22.5.85	JEBEL TEIS	1579	1600	26.5.85	EL RAGAFI	595	595
22.5.85	UM SHARAN	242	250	26.5.85	UM SERDEBBA	497	500
22.5.85	UM HEMEIR	343	350	26.5.85	HIJER EL FUL	272	272
22.5.85	KALULU	543	550	27.5.85	KERKERAYA	107	150
22.5.85	EL MASAKIN	611	620	27.5.85	HIJER JAWAD	235	300
22.5.85	EL RIKA A	556	560	27.5.85	ONGARKO	336	300
22.5.85	EL RIKA B	562	570	27.5.85	DELIBA	151	150
22.5.85	EL BURAM	660	660	27.5.85	DELAMI	851	900
22.5.85	TABANYA	637	640	27.5.85	ABRI A & B	1579	1500
22.5.85	ANGOLO	1170	1170	27.5.85	UM BEREM BEITA	1261	1270
23.5.85	EL AFEIN	113	125	27.5.85	UM BAIR	270	280
23.5.85	SERAF ALGORI	261	275	27.5.85	KHOR EL DELIB	560	570
23.5.85	TUKSWANA	274	300	27.5.85	UM ABDALLAH	1174	1180
23.5.85	ABU SAFIFA	485	500	28.5.85	ERI	846	850
23.5.85	KERKERAYA	389	400	28.5.85	SHAWAI	2480	2500
23.5.85	TEISI ABD EL	267	275	28.5.85	TAJORA	1045	1050
	SALAAM			28.5.85	TAMBIRA	393	400
23.5.85	SERAF EL DAI	360	375	28.5.85	KOMO	640	650
23.5.85	MURTA	25	25	28.5.85	MINDI	526	550
23.5.85	HAMRA	530	530	28.5.85	KALANDI		

6.4.5 List of Contacts.

The following individuals all contributed to the successful distribution of seeds in Kordofan Region and should be contacted if assistance is required during any follow up programme.

Title and Position	Name
Acting Commissioner, South Kordofan Province	Jibril Tia
Assistant Commissioner, South Kordofan, Kadugli	Musa Salim
Director General, Ministry of Agriculture El Obeid	Abdel Qasim
Director General, Ministry of Finance , El Obeid	Ahmed Abeidallah
Director of Agriculture Services, El Obeid	Abdurahman Omar Hakim
Assistant Director of Agriculture Extension ,El Obeid	Hamza Abu Gaballa
General Manager, NMAPC	Sheikh El Din
Director of Agriculture , NMAPC	Abdalla Hamad
1st Executive Officer, Rashad District	Hashim Hassan
Senior Inspector Agriculture , Kadugli District	Mohamed El Taib
Senior Inspector Agriculture , Dilling District	Mohamed Saleh Abdalla
Senior Inspector Agriculture , Rashad District	Tahir El Rashid
Senior Inspector Agriculture, El Fula	El Agib Bilal
Extension Officer Kadugli	Hamid El Rigerg
Horticultural Officer, Rashad	Essam Mur
Horticulturalist, Karshola R.C	Ibrahim Hassan Musa
Horticulturalist, Um Berembeita R.C	El Buram
Officers of the Rural Councils in	Tabanyay
Delami	Angolo
Abu Zabad	El Afein
El Odaiya	Seraf Algori
El Fula	Tukwana
Regional Director, CARE, El Obeid	Mr. Roland Roone
Merchant Dilling	Yusuf Shami
	El Abd El
	Salam
	Seraf El Dal
	Murta
	Hamra
	Ala Karim

## CHAPTER SEVEN

### CENTRAL AND EASTERN REGIONS

#### 7.1 General

The Agriculture of the Central and Eastern Region is dominated by the large irrigation schemes watered from the Nile, the extensive mechanised farming area traditionally planted to sorghum north of Gedaref and two extensive water spreading schemes at Aroma near Kasala and Tokar about 160 km south of Porth Sudan. Rainfall varies from 250 - 500 mm over most of the area tailing off to 50 - 100 mm at the coast.

People of mainly nomadic tribes inhabit the area which also attracts many immigrants who, provide labour for the extensive agriculture. Settled nomadic groups, living in small villages practice sedentary agriculture but their income is often supplemented by wages. Villages are concentrated along the banks of the Blue and White Nile affording supplementary irrigation, but away from the river, hafirs and boreholes provide some surplus water for cropping.

The recent drought has caused extensive losses of livestock and because of poor yields in the commercial agricultural sector, grain supplies to the many families partly dependent upon casual employment have been inadequate. Hardship varies tremendously with many nomads having suffered heavy stock losses now living in makeshift accommodation near established villages, where they are being fed by various agencies while those villages with access to water suffering relatively little. Settled communities away from the rivers are also experiencing severe hardship with many families being reported as having no stocks of food.

#### 7.2 Allocation Criteria.

Before any scheme of allocation could be devised, a reconnaissance of the two Regions was undertaken, when contact was made with Regional Directors of Agricultural Departments, all projects and the many agencies operating in the area. Population data was also collected and the appropriateness and size of the seed package discussed. Many offers of assistance were forthcoming for both help with the distribution and transport.

It was unfortunate that there was little advance knowledge of the Household Garden Project and much explanation was necessary. No one reported having heard the radio broadcasts from Omdurman.

6.4.5 List of Contacts.

The following individuals all contributed to the successful distribution of seeds in Kordofan Region and should be contacted if assistance is required during any follow up programme.

Title and Position	Village	Pop	Area	Name
Acting Commissioner, South Kordofan Province		244		Jibril Tia
Assistant Commissioner, South Kordofan, Kadugli		170		Musa Salim
Director General, Ministry of Agriculture El Obeid		2		Abdel Qasim
Director General, Ministry of Finance, El Obeid		58		KORONGO ABDALLAH
Director of Agriculture Services, El Obeid		82		Ahmed Abeidallah
Assistant Director of Agriculture Extension, El Obeid				Abdurahman Omar Hakim
General Manager, NMAPC		800		Hamza Abu Gaballa
Director of Agriculture, NMAPC		452		Sheikh El Din
1st Executive Officer, Rashad District		200		Abdalla Hamad
Senior Inspector Agriculture, Kadugli District		782		Hashim Hassan
Senior Inspector Agriculture, Dilling District		1279		Mohamed El Taib
Senior Inspector Agriculture, Rashad District		242		Mohamed Saleh Abdalla
Senior Inspector Agriculture, El Fula		350		Tahir El Rashid
Extension Officer Kadugli		250		El Agib Bilal
Horticultural Officer, Rashad		250		Hamid El Rigerg
Horticulturalist, Karshola R.C		260		Essam Mur
Horticulturalist, Um Berembeita R.C		270		Ibrahim Hassan Musa
Officers of the Rural Councils in		640		
Delami		1170		EL BURAM
Abu Zabad		122		TABAYNA
El Odaiya		272		ANGILO
El Fula		300		EL AFIN
Regional Director, CARE, El Obeid		200		SERAF ALGORI
Merchant Dilling		400		TUKSWANA
		272		Mr. Roland Roone
		389		Yusuf Shami
		267		TRISI ABD EL
		393		SALAMA
		640		SERAF EL DAL
		256		MURTA
		230		HAMRA
		222		MIRAK ALLA

## CHAPTER SEVEN

### CENTRAL AND EASTERN REGIONS

#### 7.1 General

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Before any scheme of allocation could be devised, a reconnaissance of the two Regions was undertaken, when contact was made with Regional Directors of Agricultural Departments, all projects and the many agencies operating in the area. Population data was also collected and the appropriateness and size of the seed package discussed. Many offers of assistance were forthcoming for both help with the distribution and transport.

It was unfortunate that there was little advance knowledge of the Household Garden Project and much explanation was necessary. No one reported having heard the radio broadcasts from Omdurman.

It transpired that gardens or "Jubraka" as practiced in Darfur and Kordofan are not a feature of the agricultural systems in the regions, although planting of vegetables and fruit, primarily for sale in the larger towns is a common practice, but in nearly all cases, crops are grown under supplementary irrigation with little or no rainfed production.

On the basis of this reconnaissance tour it was decided that :-

- people in the Eastern Region were experiencing far greater hardship than those in Central Region.
- the distribution of seeds would therefore be biased in favour of the East.
- in view of the urgency of delivering seed before the onset of the rains, the support of projects, Horticultural Departments, and agencies with suitable administration and village level contact would be sought generally, the number and size of seed packets was inadequate to meet the demand and that it was inevitable that some communities could not be assisted.

Distribution of seed packets for whole area is shown at Table 7.1 and the seeds left Khartoum by lorry on 25th May.

TABLE 7.1 SEED DISTRIBUTION  
CENTRAL AND EASTERN REGIONS

REGION	LOCATION	NO.OF PKTS	AGENT
CENTRAL	WAD MEDANI	45,600	DEPARTMENT OF HORTICULTURE AND PLAN
EASTERN	GEDAREF	4,500	DEPARTMENT OF HORTICULTURE
EASTERN	AROMA	9,000	QASH AGRICULTURE CORPORATION
EASTERN	PORT SUDAN	6,600	TOKAR AGRICULTURE CORPORATION
EASTERN	PORT SUDAN	600	OXFAM
EASTERN	PORT SUDAN	35,400	JOINT NUTRITION SUPPORT PROGRAMME
	TOTAL	101,700	
EASTERN	GEDAREF	12,900	UNHCR. All incomplete packets using surplus seeds , mainly maize for distribution at refugee camps.

### 7.3 Central Region.

7.3.1 Agriculture. Leaving aside the big commercial irrigation schemes, there remains many small farmers living in villages of anything from 100 to 5,000 people. Those near the Nile with easy access to water grow mainly vegetables for sale and in addition work as seasonal labour in the commercial sector, using the money earned to buy grain. Crops favoured are tomato, okra, water melon and sweet melon, cucurbits, radish, carrots and egg plant. Moving away from the Nile a similar system is practiced but on a smaller scale using surplus water from domestic wateryards and hand dug wells. Sorghum is also grown by these farmers. Where groundwater is not available rainfed agriculture become the norm with sorghum the most important crop, but even here, okra, onions and tomatoes are also grown. Average farm size is around 5 feddans, and the "Seluka" water spreading technique is used.

In all areas a shortage of seed at prices farmers can afford was reported and this was particularly true of vegetables. Imported tomato seed was available from Khartoum at Ls. 70 per Ib tin, but disturbing reports of non viability were heard throughout the area. Tests carried out at Wad Medani by Horticultural Department staff showed germination as low as 5 percent for tomato and farmers are being advised to bring samples of seed to the Department for testing before they commit themselves to purchase.

7.3.2 Distribution Organisation. With the exception of Gezira East District, in which the American Foster Parents Association, PLAN undertook all distribution, extension and technical supervision, the Department of Horticulture acted as the Project's main agent. Compared to many Regions, the Department is well staffed and has a vehicle in most Districts. Field programme are however curtailed due to a lack of funds to purchase fuel. Discussions with the Regional Director Agriculture and the Director of Horticulture were held and allocations of seed to Districts on the basis of need, population and agricultural potential were agreed. Horticultural Department accepted responsibility for an equitable distribution as possible within the Districts, working through Executive Officers at District level and the local Sheikh at village level. Farmers Unions were also to be used as a good source of contact for relaying information and all numerous advisory leaflets produced by the Project were issued.

It was also agreed that they would provide technical supervision and follow up although most farmers in the area are experienced with vegetables growing. The PLAN organisation is well established in Eastern Gezira District and has an office in Wad Medani . They employ two agriculturalists at Headquarter level and have a good working relationship with Abu Haraz Agricultural College. The District is sub-divided into five areas, each having a CoOrdinator based at Amara Um Asha, Abu Gelfa , Dallawat and Sherif Barakat. In addition there are 36 social workers covering 58 villages. Amongst others, the promotion of small gardens is one of PLAN objectives and thus the seed distribution programme was complementary to their work. A survey had recently been completed which high lighted a seed shortage problem and this and other information was used in their distribution plan.

Details of District allocation are given at Table 7.2 and village allocation at Table 7.3. This information is incomplete due to the time factor, but arrangements were made for information to be sent to HTS Khartoum Office when available.

7.3.3 Transport . The 152 boxes containing 45,600 packets of seed had left Khartoum on 25th May and had arrived safely at Wad Medani early morning 26th May . By arrangement PLAN collected their allocation and arranged transport to villages using their own vehicles. The balance was transported to District HQ's by Horticultural Department vehicles for which the Project provided fuel and some small spare parts. With the exception of Sennar District where a vehicle was hired and Gezira North where the Department of Agriculture kindly offered the loan of their vehicle, all Districts had adequate transport . Sufficient fuel was procured to facilitate distribution and some follow up and supervision. In total 8 drums of Diesel and 15 drums of Petrol were purchased and charged to the Project.

7.3.4 Staff . The Regional Directors of Agriculture Dr. Abdul Moniem and the Director of Horticulture Dr. Abas Mohamed Abas were both instrumental in drawing up the Regional plan and S/d Semir El Abid , Senior Inspector Horticulture was assigned as counterpart to accompany the consultant on field trips , brief all District level staff and supervise the operation generally.

TABLE 7.2 DISTRICT SEED ALLOCATION AND STAFFING - CENTRAL REGION

DISTRICT	PRINCIPAL TOWNS	POPULATION	ALLOCATION	STAFFING	REMARKS
Gezira North	El Hasahheisa	309,944	2,400	Ahmed Mhd Saleh Mhd El Haj Abdu Hurera Ali Said	
Gezira East	Rufa'a	271,961	4,200	PLAN Staff	PLAN
Southern Gezira	Hag Abdullah	342,044	5,100	Ali Abdu Hai Aboud Miss Ahowia Sid Ahmed	
Central Gezira	Wad Medani	238,014	3,600	Abdulla Aziz Ibrahim Adel Abdul Karim A/Rahman El Nour Mohamed Omar	
Upper Gezira	El Bageir	206,143	1,800	Ismael Sadig Mhd Ahmed El Hadi Ahmed Sulaiman Ala Eldin Abu Galala Adam Yahia A/Rahman Mhd Nur	
Du:ini Shabasha	El Dueini	261,708	4,500	Sadig Mustafa El Faki Gasmalla	
Kosti	Kosti	309,923	3,600	Mac Buthana Faldon	
	Rabak	202,259	2,400	Salah Abubakar	
Sennar	Sennar	296,986	4,500	Abdul Gadir Hassan Nar ElMin Zakaria Osman Abdel Rasoul	

TABLE 7.2 DISTRICT SEED ALLOCATION AND STAFFING

CENTRAL REGION

DISTRICT	PRINCIPAL TOWNS	POPULATION	ALLOCATION	STAFFING	REMARKS
Singa	Singa	69,654	2,400	Safian A/Rahman	
	Abu Hagar	166,133	1,800	Mohamed Ahmed Ali	
Suki	Suki	135,541	3,000	Ali Bashir Ahmed El Fadlu Rabi Ronsht Mohamed Sadig	
Rosieres	Rosieres	264,391	3,600	Abdulla Shamsa El Din Yousif Mhd Tom Abdulla Abdel Rasour	Poor access due to rain

TOTAL POPULATION AND ALLOCATION CENTRAL REGION:-

3,075,721 345,600

TABLE 7.3 VILLAGE SEED ALLOCATION

DISTRICT EASTERN GEZIRA

Village	Population	Packets	Village	Population	Packets
O.SAAD	3,000	68	ABUGALFA	4,500	48
O.IBRAHIM	1,100	68	TALBAB	350	44
W/ ELFADNI	800	64	OMTALA	600	44
KAIRAN	1,200	64	OMASHA	700	44
GARA'A	500	64	BALALAB	700	44
T.NAFA'AB	2,200	64	OMTALALTA	800	44
TAMMARI	1,300	64	GARFA	507	44
T.ABUKHRAIS	1,700	64	OMHIRIZAT	1,000	44
KEMELAB	300	64	HASHISH	700	44
FERDOS	400	64	OFFINA	600	44
HAMDABAB	600	64	HAMATALLA	800	44
GALABEES	450	64	RADMA	700	44
MARZOOG	450	64	WFD SAGORTA	800	44
SHEIKH BARAKAT	10,000	120	WAD ADAM	600	44
SHEIKH BAHAR	1,500	120	WAD EL SHAFI	150	44
SHEIKA FOAG	1,200	120	WAD EL AMEAN	800	44
OMELAYLER	1,500	120	OUMAKASH	650	44
KOMOR	2,000	120	HADABA.M	700	44
SHEIKH HAIBAB	1,700	120	HADABA.A	800	44
AHAMDA	1,500	120	FINABAB	1,500	94
AMARA	2,500	80	HAJ NAGER	1,200	94
RABDA	1,000	76	HAJ AKOOD	1,000	93
KHAMSEIN	1,500	76	DALLAWAT	5,000	94
OMTARTARA	1,500	76	D.FOAG	500	93
WAD WILE	1,500	76	RUFFAREN	800	93
HAJ MUSA	1,200	76	R.FOAG	400	93
WADEL KASHIF	1,000	76	AHAMDO II	200	93
MALAXAB	250	76	AHAMD III	250	93
KHABIFA	350	76			
WADEL BUR	650	76			
MAGABBA	900	76			

TABLE 7.3 VILLAGE SEED ALLOCATION

DISTRICT CENTRAL GEZIRA , SOUTHERN GEZIRA, UPPER GEZIRA, SINNAR DISTRICT

Village	Population	Packets	Village	Population	Packets
HANTOUB	4,469	300	SABIA DALIEB	1,172	300
ETTIKAILAT	975	150	ABU SUGRA	2,000	300
ALIRIBAB	3,701	200	HILAT DAFALK	900	300
EL SHABAROGA	4,438	300	EL DENIEGIELA	2,500	300
FALLA	610	30	MIZIEGIELA	3,000	300
EL JAMAAB	622	30	FARIS	5,000	300
EL BAPSA	2,415	300	ELDIM EL MASLYKHA	7,000	300
EL BAYAH	536	30	WAD EL HADAD	5,000	300
ABD ELKNA	536	50	ELSHUKAB EL NUR	1,400	300
EL BIHANAB	407	100	WAD ELMAGOY	4,000	300
WAD AAGBENA	963	100	UM DAGRSY	5,000	300
EL BARSII	1,032	200	EL ABDELAB	3,000	300
KURDUGAILY	738	50	EL HELALA	3,000	300
NUR EL DIEN	94	30	EL KASAMBER	4,000	120
ALHJLIJ	620	300	EL TRABY	5,000	190
UM SUNNUT	3,560	300	EL TAKALLA	5,000	130
ABU SHINAIB	3,290	300	FADUL	4,000	70
BARAKAT	4,100	300	EL BASHGRA	5,000	40
ELSORIEBA	3,500	300	EL TIKENA	12,000	550
WAD EL NOUR	530	150	EL KAMLIN	25,000	300
KIMIAR FAZARY	490	150	EL GADID	975	300
EL GIRIGIRIEB	2,010	300	EL GADID	5,000	300
FADASI HALIMAB	3,120	300	EL GAGEIR	5,000	300
FADASI AMRAB	2,300	300	EL GAGEIR	5,500	300
WAD EL MAGDOUB	2,110	300	BUTRI	5,000	300
ELDASIES	983	300	NURSERY	300	300
EL GISIERA	1,329	300	RIEH BALAK	250	100
EL DALIEBA	1,300	300	LUKHA	700	300
WAD YAHYA	750	300	DAR ESSALAM	900	300
KORIEDA	600	300	HELET ISMAEL	600	100
EL AUGDA	2,670	300	HELET ALBEIR	5,600	300
EL SHUKABA ELTAB	960	300	ALHIGERAT	2,500	300
EL KHUR	5,000	300	ERLEDIBA	1,500	300

TABLE 7.3 VILLAGE SEED ALLOCATION

SINNAR , SINGA , ABU HUGAR , EL SUUKI DISTRICTS

Village	Population	Packets	Village	Population	Packets
SHERIGF BAI BUJ	600	600	OMBIENEIN	5,000	300
HELMYABBASS	21,229	300	SAIRO	2,600	300
HILET MAHMOOD	316	300	ABU HUGAR	12,800	300
GAGHERRASULE	1,870	300	DAR AGEEL	3,475	300
BANAT SALAMT ELBASHA	624	600	WAD ALAIS	5,000	300
KELA	561	300	WAD ALRIF	2,500	300
WAD ELGTZOLI	2,200	300	HILAF YOUSIF	5,000	300
EL DABKRA	1,600	300	HILAF SAID	2,800	300
UM: SHOKA	8,000	300	WAD SALMAN ABU J... ALBANCT	2,000	300
EL SHALAL	6,400	300	ABU GORA	5,000	300
EL RAYAT	300	300	SHASHEONA	700	300
EL RAMASH	7,200	300	FARHANA	1,335	300
EL AZAZA	500	200	BANSO	750	300
SINNAR TOWN		400	ALGUBA	600	150
EL SABONABI	6,000	300	AL GAZIER	850	150
DAR EL SALAM	850	300			

7.3.4 Continued.

In Eastern Gezira PLAN staff were used, headed by the Resident Assistant Director, Don Mc Phee. A staff list is available at their Wad Medani office, while names of District Horticultural Staff working on the seed project are included in Table 7.2

7.3.5 Extension and Training. Both these aspects were fully catered for by the various staff involved. There were no complications with womensorganisations as farms were run by men and local knowledge and experience with the crops to be grown was good.

7.3.6 Questionnaires. Ten General Questionnaires were completed and returned and Market Information was collected at 8 centres.

The description of agriculture at 7.3.1 is based upon information collected and all completed questionnaires are filed for future reference particularly for use during an evaluation. Okra, and tomato were grown in all areas near the river where onion and cucurbits were also reported. In the drier areas sorghum became increasingly important. Details are to hand of local varietal preferences.

The market survey showed a good availability of both grains and vegetables with prices highest in Wad Medani and lowest in Kasala, the current source of production. Sorghum grain averaged around Ls. 170. per sack. This data in original form is also being retained.

#### 7.4 Eastern Region.

7.4.1 Agriculture. The large mechanised farming area around Gedaref, reported to be some 1 million feddans in extent, dominates the rainfed sector. Land here is almost exclusively planted to sorghum. The small farmer sector is very much dependent upon water for irrigation. There are two major water spreading schemes, both run by government and farmed by tenants. They are at Aroma, on the Qash river, and in the Tokar Delta 150 km south of Port Sudan. Elsewhere, there are small settled farming communities growing sorghum and vegetables irrigated from small rivers, hafirs and wells. The majority of the area is used by the many nomadic tribes who live traditionally on milk, meat and grains purchased locally. To the north of the Region desert prevails and inhabitants are few. Standards of nutrition are poor and a WHO/UNICEF Joint Nutrition Support Programme based in Port Sudan, was established in July 1984 to combat this problem. The Departments of Horticulture, Soil Conservation and Health are primarily involved, but the Rural Water Corporation and Ministry of Education provide support and co-operation. This programme covers the five Districts of Sinkat, Haiya, Derudieb, Tokar North and Tokar South.

7.4.2 Questionnaires and Documentation. General and Market Questionnaires (Appendix C) were completed in as many locations as possible and in some cases left with staff involved in the distribution exercise to complete. This information has been used in describing the agriculture at the various locations. Much other useful data on crop and varietal preferences was also collected and all remains filed at the Consultants Office for future reference. Many waybills, consignment notes and other miscellaneous documents were also used, but not all are to hand. Where it was not possible due to time factor to collect all this information, arrangements were made for it to be forwarded at a later date to the Consultants Office.

7.4.3 Distribution Organisation. Discussion were held at Regional level with the Regional Director, Agriculture , S/d Mohamed Sulieman, S/d Karam Mhd Karam the Deputy Governor and later with the acting Regional Director of Horticulture, S/d Abdulahi Mhd El Haj. In view of the unusual nature of the agricultural systems prevailing, it was decided that no central distribution organisation was feasible, and that instead ,separate plans would be drawn up using existing projects, corporations and institutions. Those selected were:-

- Qash Agricultural Corporation.
- Department of Horticulture - Gedaref.
- Tokar Agricultural Corporation,
- Joint Nutrition Support Programme ( JNSP ).
- Oxfam Port Sudan.
- UNHCR Gedaref.

Overall distribution is included in Table 7.1 and detailed distribution organisation is discussed separately for each area.

#### 7.4.4 Qash Agricultural Corporation:-

A. General . The Qash Agricultural Corporation has its Headquarters at Aroma, just north of Kasala and is headed by a Director General , Dr. Mustafa Abas, supported by a Deputy , S/d Babikir Mohamed Ali and an Assistant Manager, S/d Tahib Ahmed Badawi . The scheme covers an area of 80,000. feddans watered by a canal system taking water from Qash river when it is in flood. The actual area under cultivation in any one year depends upon the amount of water available . The scheme has 12,000 tenants farming between 5-20 feddans and land is allocated on an annual basis. Six sub-stations have been established at ; Kasala, Makale, Dugein, Tendelai, Mitatib and Hadaliya each being responsible for organisation of an agricultural block, and staffed by a Senior Agricultural Inspector with supporting staff. Blocks are of roughly equal size and each has two or three villages in which the tenants reside. Contact between tenants and the corporation in each block is formalised through Agricultural Production Committees, chaired by the Senior Inspector and having 13 members . Farmers Unions are also well developed and play an important role in Corporation / tenant relationships.

The Corporation imposes a cropping plan and tenants plant one third of their area to Castor , the main cash crop , and two thirds to sorghum for food and sale. Castor seed is provided by the Corporation who take 45 percent of the

crop in lieu of rent. It is understood that vegetable production in the main cropping season is not allowed, but tenants plant large areas to watermelon if there is still sufficient soil moisture after the main harvest. This crop brings in a considerable income in good years, with Port Sudan being the best market. Last season due to a water shortage the crop was much reduced, and as a result prices as high as Ls. 3,000 per souk lorry load were reported. Notwithstanding the above, some small scale vegetable production is common and tomatoes and okra are the most favoured crops.

Tenants are allowed to keep cattle and small stock which feed on crop residues to supplement the sparse grazing. Sorghum stover is also sold when in surplus and high prices are commanded in dry years.

Irrigation normally starts in early July followed by planting in late July/early August.

A current feature of the established villages within the scheme area, are large temporary encampments of related tribal groups, drawn to the area in search of food, water and stock feed. This is imposing a strain on already depleted food reserves.

**B. Distribution Organisation.** Discussions were held with the Corporation Management and the Assistant Manager, Syd Tahih Ahmed Badawi was assigned as counterpart to oversee the operation. It was agreed that meetings would be held at each agricultural block and that once land allocations had been completed, seed packets would be given to those wishing to have them. It was also suggested that several areas of 5 feddans would be made available, rent free, near the settlements and irrigation water provided. Those wishing to plant vegetables would then do so on an individual or informal group basis. Actual allocation of seed is shown at Table 7.4.

**C. Transport.** The 30 boxes of seed were delivered direct to the Corporation Head Quarter and all internal transport requirements will be met by the Corporation using their own vehicles and at no cost to the Household Gardens Project.

**D. Staff.** Sayed Tahih Ahmed Badawi was put in overall charge of distribution extension, training and follow up and the Senior Inspectors at each block would supervise operations in their respective areas. Their names are given in Table 7.4.

TABLE 7.4 SEED ALLOCATION - QASH AGRICULTURE CORPORATION

Agriculture Block	Village	No. of Tenants	Seed Packets	Officers in Charge	Remarks
KASALA	GOLOSIT	2000	1200	MOHAMED AHMED FADLALA	
	TOGLEI				
MAKALE	MAKALE	2000	1500	ABDUL RAHMAN OSMAN	
	JANMAN				
DUQEIN	DUQEIN	2000	1500	IBRAHIM TUNISI	
	TAMBE				
MITATIB	OLEB	2000	1500	HASHIM ADAM	
	MITATIB WELLS				
HADALIYA	WAGAR	2000	1800	ABDUL BAGI AHMED ALI	Many displace person in locality
	HADALIYA SABUN				
	TOTAL	12000	9000		

In addition to the organisational aspects, it was considered advantageous to involve, the extension staff of the Department of Horticulture . Two staff were assigned this task , S/d Ohaj Sadig and S/d Mustafa Medani. Sufficient Project funds were allocated to Horticultural Department to mobilise their Landrover for this work. The extensionists would travel independently to each block and attend meetings called by the Senior Inspectors. This would be followed by smaller meetings at village level and it was planned to start the extension exercise in mid July before seed distribution and planting . Close liasion would be maintained between the extensionists and Corporation staff and coordination would be at counterpart level.

#### 7.4.5 Gedaref.

**A.General .** Although the mechanised commercial sector dominates agriculture in the area , there are many small villages practising subsistence agriculture in the poorer areas. These communities comprising mainly migrants from Darfur and Kordofan who had settled many generations ago, were reported to be suffering extreme hardship. Traditionally these farmers keep small stock , grow vegetables in small plots watered from hafirs and work as labour on the mechanised schemes, on which they depend for their cereals for consumption.

**B. Distribution Organisation.** The Department of Horticulture at Gedaref is staffed by an Inspector , S/d Abdulla Ahmed Hamid , two Technicians , S/d Mohamed Ahmed Mohmoud and S/d Hassan Mohamed Shaib and a driver, and together they formed a team to organise and distribute the 4,500 packets of seed allocated to them. Using their only vehicle , an old Landrover , for which the Project provided some funds for repairs and a drum of fuel, seeds were distributed to nine villages. In all cases they worked through the local village committees, who arranged contact with farmers by calling meetings. Extension follow up and supervision will be provided by the Horticulture staff . Full details are given in Table 7.5

TABLE 7.5 SEED ALLOCATION GEDAREF DISTRICT

VILLAGE	POPULATION	NO. OF PACKETS	REMARKS
KAMARA	420	300	
ASAR	3,000	300	
AMBASSA	1,500	300	

TABLE 7.5 SEED ALLOCATION GEDAREF DISTRICT

VILLAGE	POPULATION	NO.OF PACKETS	REMARKS
KASAB	8,000	1,200	
DELASA	2,000	300	
KAJARA	1,000	300	
GEDAREF	90,000	1,200	Mainly urban people
WAD EL DAMAK	800	300	
REBESHA	6,000	300	
<b>TOTAL</b>	<b>112,720</b>	<b>4,500</b>	

7.4.6 Tokar Agricultural Corporation.

A.General. The Tokar Agricultural Corporation manages the water spreading scheme in the Tokar delta 150 km south of Port Sudan. It has a manager S/d Farouq Abdel Wahab , an assistant, S/d Mohamed Nasser Serora supported by field staff.

Unlike the Qash scheme it is not canalised . It has a total area of 406,000 feddans of which 250,000 are cultivable . However the area irrigated , which is dependent upon water availability, varies between 50 to 70,000 feddans annually. Three irrigation regimes have been identified on the basis of water availability, these are good , moderate and poor irrigation. Cotton is planted in the best area, and sorghum and millet in the others. Vegetables , mainly okra, eggplant, tomato, chiles, peppers, beans, cowpeas, and squash are grown in the good and moderate areas at the ratio of 1 feddan vegetables to 5 feddan other crops. Surplus produce is marketed in Port Sudan , with some finding its way to Kasala, Atbara and Gedaref.

Cotton seed is provided by the Corporation which takes 14 percent of the net income from the crop in lieu of rent. Some attempt is made to provide a source of vegetable seed for sale to farmers at cost price. This years' seed supply is summarised in Table 7.6

TABLE 7.6 AVAILABILITY OF VEGETABLE

## SEED

CROP	QUANTITY AVAILABLE	PRICE TO FARMER
TOMATO	5 Ibs	Ls. 7.00 per ounce
MELON	4½ Ibs	Ls. 2.00 per ounce
EGGPLANT	2½ Ibs	Ls. 1.00 per ounce
OKRA	90 Ibs	Ls. 0.50 per ounce

In a normal year flooding starts in July and continues until September and planting takes place in September and October. No primary cultivation is practised and planting is by hand. Weeding is a major problem and access to the cultivated areas after flooding is difficult.

The area is divided into seven blocks, four in the north and three in the south. Tenants, who number 24,000 and hold permanent allocation rights, all reside in Tokar town, but during the cultivation season, they establish temporary villages near their land. All tenants belong to the Tokar Delta Farmers Union which is represented at the North and South Tokar Production Councils. Monthly meetings are held, chaired by Corporation staff.

B. Distribution Organisation. Planting in the Tokar Delta area does not normally take place until late September / early October and there was therefore no urgency in making the distribution of seed. An allocation of 6,000 packets was made and a distribution organisation agreed with the Corporation Management. Meetings would be held at each block and seed packets allocated equally. After a full explanation of the Seed Project, farmers would be given seeds to plant in their land, under the supervision and guidance of Corporation staff. A formal agreement between the Seed Project and the Corporation was drawn up, detailing responsibilities.

Details of actual distribution will be provided later by the Corporation. The text of the agreement is given at Appendix D

C. Transport. The Corporation is relatively well provided with transport, their fleet comprises 3 Landrovers, 1 Toyota and 3 Austin "Souk" type lorries. Collection of the 22 cartons of seed from World Food Programme store in Port Sudan, using Corporation transport was agreed and all internal transport requirements would be met at no cost to the Seed Project.

D. Staff. The Resident Horticultural Inspector S/d Idris Saleh Hasri was assigned as counterpart to oversee and supervise the distribution and provide technical advice. As planting techniques in the area are specialised, the Horticultural Inspector agreed to provide an explanatory technical leaflet for distribution with the seed packets as an alternative to the leaflet prepared by the Coordinators for general use, which was inappropriate to planting conditions in the Delta. Organisational assistance using the Field Officers North and South and officers in charge of blocks was also agreed. The names of staff involved are given in Table 7.7.

TABLE 7.7 NAMES OF STAFF INVOLVED

AREA /BLOCK	RANK	NAMES
Whole Project	Horticultural Inspector	Idris Saleh Hasri
Northern Blocks	Field Officer	Mustafa Mhd Saleman
Block 1 North	Agricultural Inspector	Mhd A/Gadis Ismael
Block 2 North	Snr. Agriculturalist	Ahmed Mhd Azreg
Block 3 North	Agriculturalist	Tahir Hashim Osman
Block 4 North	Agriculturalist	Muktar Osman Saleh
Southern Blocks	Field Officer	Baggir Osman Issa
Southern Blocks	Agricultural Inspector	Hassan Osman Abu Ali
Block 1 South	Snr. Agriculturalist	Mhd Abdulla Nornit
Block 2 South	Snr. Agriculturalist	Idries Musa Mahmoud
Block 3 South	Agriculturalist	Hassan Berg O Haj
Whole Project	Senor Storeman	Mhd Ali Ahmed

#### 7.4.7 World Health Organisation / UNICEF Joint Nutrition Support Programme.

A. General. The Red Sea Hill Province is not noted for its agriculture. Rainfall to the south is around 350 mm tailing off to 50-100 mm in Port Sudan and only traces of rain and semi desert conditions prevailing to the North. It is inhabited by many nomadic tribes, principally Hadendowa and Beni Amir who graze the range with a variety of cattle, camals and small stock. The enviroment is harsh and living conditions for the people very hard.

Over the years small groups have settled in villages near water supplies or where special conditions make agriculture a possibility. The Tokar Delta is the largest of such areas but similar small areas, where river flooding occurs also exist. In some places where groundwater is abundant, settlements have developed and vegetable production for the local markets has become a feature.

Where conditions are suitable, mainly near watercourses, short season millet and sorghum are planted. Some nomadic groups form temporary settlements and also grow grain crops, moving on after harvest.

With most people subsisting on meat, milk and grain, malnutrition is widespread and it was to combat this situation that WHO/UNICEF established a Joint Nutrition Support Programme in 1984. During the last few years increasing numbers of people have become unable to support themselves, due to drought and consequent heavy stock losses. Large numbers are currently being fed by the aid agencies but deaths are still reported to be occurring.

The JNSP has its Headquarters in Port Sudan and provides support to the Horticultural and Soil Conservation Departments. The Ministries of Health and Education and the Rural Water Corporation are also closely involved with the programme.

The primary objective of the JNSP is to combat malnutrition through providing primary health care and promoting vegetable and fruit production. In addition to improving the very weak infrastructure through their support of the various government departments, training in both health care and gardening is a major feature of the programme. To date 66 Primary Health Care Units have been established at village level staffed by a Community Health Worker to facilitate training and provide supplementary nutrition, medicines and vaccines. At District level, coordination links have been established with Executive Officers.

Assistance with promoting horticulture has focussed mainly on training and assistance with borehole construction. Thirty seven boreholes have been drilled to date with JNSP assistance and their programme for 1985 includes a further 70.

Crops recommended are tomato, watermelon, cucumber and okra. The programme covers the administrative Districts of Sinkat, Haiya, Derudieb, Tokar North and Tokar South and rural Port Sudan and is scheduled to run for a five year term.

B. Distribution Organisation . JNSP seemed ideally suited to act as agent for the household Garden Project and detailed discussion were held with UNICEF and senior Departmental staff.

In brief the following organisation was agreed.

1. Seed would be transported from WFP store in Port Sudan to Districts using Food Aid scheduled trucks.
2. Seed would be consigned to a three man committee at each District, comprising the Executive Officers, the Horticultural and Soil Conservation Officers. Details of allocations are given at Table 7.8 which also shows population figures.
3. Village allocations within Districts based upon the agreed criteria would be the responsibility of the Districts Committees.
4. Training courses would be mounted by Horticultural and Soil Conservation Staff at 24 centres in the five Districts, each covering an average of six villages, with an overall cover of more than 120 villages.
5. Up to five representatives from each villages would attend the training course and on completion would take their village seed allocation home with them . They would then be responsible for village level meetings and individual allocation of seed packets.
6. JNSP would organise an orientation course for the training teams, and through District Executive Officers, organise farmer transport to training centres , transport of seeds to centres, subsistence allowances etc.

TABLE 7.8 SEED ALLOCATION THROUGH JNSP

DISTRICT	POPULATION	CONSIGNEE	NO.OF PACKETS
SINKAT	66,225	Executive Officer	6,300
HAIYA	44,533	Executive Officer	4,200
DERUDIEB	62,522	Executive Officer	6,000
TOKAR NORTH	107,908	Executive Officer	10,500
TOKAR SOUTH	<u>85,798</u>	Executive Officer	<u>8,400</u>
TOTAL	366,986		35,400

Full details of staffing , costs , training centres and villages covered are set out in Appendix E , while the text of the formal agreement between the Household Garden Project and JNSP is given at Appendix D.

C. Staff. In addition to staff involved in the training and distribution exercise the following senior staff were involved.

- S/d Fida Hussain UNICEF Project Officer JNSP.
- S/d Said Awadala UNICEF Assistant Project Officer JNSP.
- S/d Mhd Tahir Hamid Project Manager JNSP.
- Dr. Abdel Hamid Abdul Magid Director of Horticulture.
- S/d Abdulla Musbah Director of Soil Conservation.

7.4.8 UNHCR - Gedaref. During general discussion with UNHCR staff in Gedaref, the question of whether it was politically wise to distribute seed to refugees was raised. While it was agreed that they should not be involved in the general distribution, it was felt that some assistance was justified. When the packaging of seeds for the Project was completed, some incomplete packets were produced and a surplus of maize and pigeon pea remained, and this provided a convenient solution to the refugee question. In total 43 boxes containing mainly maize seed was given to Mr. Piers Vigne, the UNHCR Agriculturalist, for distribution at his discretion to the refugee camps. Full details were not available at the time of writing out, but will be forwarded to the Consultants Khartoum Office at a later date.

7.4.9 OXFAM Port Sudan. Oxfam Port Sudan headed by Mr. Tim Foster, are intimately involved with the food distribution programmes, providing much useful survey data on which the various agencies could make rational decisions. In their travels, staff come across many needy cases, and an allocation of 600 packets of seed was made for handing out in villages in which they were working. A copy of their survey report was promised and will be available as additional background information during the proposed evaluation phase.

Executive Officer	6,300	
Executive Officer	4,200	
Executive Officer	62,522	
Executive Officer	107,208	
Executive Officer	82,728	
TOTAL	352,400	352,986

## CHAPTER EIGHT

### PROJECT EVALUATION

#### 8.1 Initial Reaction to the Project.

In general the Project was well received . The aims of providing good quality seed were appreciated as was the emphasis on helping those people who have no other source of seeds. The Jubraka Project was seen as complementary to the efforts of other donors : The EEC have organised purchase and distribution of local millet and groundnut seed , and USAID have provided sorghum and millet seed . It is early to judge the reaction of farmers themselves , but there are several indications that the programme was very welcome . The publicity given to the Project has resulted in large numbers of requests for seeds at MOA and Rural Council Offices. In Darfur Region two teams from the WSDC Project Monitoring and Evaluation unit took 250 seed packets with them on a routine crop survey conducted in late May and reported a great interest amongst farmers. Similarly, the Monitoring programme being undertaken by CARE in South Kordofan has shown that the packets have been distributed by the Village Councils and that the farmers were pleased to receive the seeds.

The seeds are welcome for two reasons:- First there does appear to be an absolute shortage of seeds ( mostly okra ) in many areas, but the main problem appears to be that the poorest people do not have the money to buy them ; and second people anticipate that seeds coming in a packet from the United Nations will be of good quality. Reports from WSDC Settlement in Darfur where some of the earliest deliveries were made indicate good germination. Although the initial reaction is generally favourable several technical criticism of the programme have been raised . The first is that no matter how good the quality of the seed, the performance of the selected varieties is uncertain under the specific conditions existing in any particular location. This point was raised by the MOA staff in all the Regions receiving seed . The following points were made regarding the content of the seeds packet:-

- local water melon seed is usually available in large quantities; this crop succeeded even in North Darfur last year.
- neither pigeon pea or chick pea is commonly grown in Darfur, Kordofan , Eastern or Central Regions.
- although dabar is a medium maturing sorghum ( about 110 days) , it is later than those usually grown in the Jubraka ; early maturing najad or feterita types are more suitable.

- tomato seeds are freely available by extraction from salsa (dried tomatoes) which is on sale in most areas, including those where tomatoes are not widely grown. It was also mentioned that tomatoes are often self sown from the previous crop. In Eastern/Central tomatoes tend to be grown as a commercial enterprise using imported canned seed.
- locally popular cucurbits such as firquz and tibbish were not included.

The most serious criticism raised, however, related to the quantity of seed in each packet. It was felt that the amounts of okra and sorghum in particular were simply too small to be of any real significance. Jubraka in Darfur and North Kordofan are not considered to be just the small household garden on which the Project was based. On the goz soils, the Jubraka usually consist of about 1.5 feddans of early maturing sorghum, 0.75 feddans of okra and a smaller area of other crops. Water melon and lubia are often interplanted in the cereal crop; water melon may also be planted on fallow land to maintain tenure.

Whilst the crops included in the seed packets all have a potential role in rural diets, it must be pointed out that the "hungry period" is essentially a time of energy shortage. Okra, tomato and watermelon make virtually no contribution to the energy content of a diet; whilst the quantities of sorghum, maize and pulses were very small in relation to need and will substitute only marginally for aid-provided grain.

## 8.2 Criteria For Crop Selection.

8.2.1 General. It is important in any future aid project which provides seeds to improve the availability of food and / or the nutritional status of the small holders, that the seeds are the right varieties of the right crops.

There are several factors which affect the farmers choice and the following paragraphs should improve the chances of any future seed project providing, as nearly as possible, the seeds which the farmer would choose himself.

8.2.2 Environment. The two main factors are soil type and availability of water either as rain or irrigation from any source. Although the soils can be subdivided into many categories, for the purpose of this exercise they can be split into two main types, each with an associated sub-type.

a) Goz. Farmers on the Goz will usually grow bulrush millet and sorghum as their cereal crops with the former being the first choice in the low rainfall areas of N. Darfur and N. Kordofan. Other crops include groundnut,

watermelon and okra. Within the areas of goz there are smaller areas of heavier and deeper soils of alluvial origin . Where these soils occur near the water courses the farmers like to grow tomatoes, chillies and leaf vegetables in addition to the main crops listed above. Other minor crops grown in the goz are kerkadeh , cucurbits , sesame and cowpea . Growing conditions on the goz are far from ideal, with both the quantity and distribution of rainfall being major constraints affecting production . The varieties of crops grown are all adapted to local conditions and to date these "baladi" varieties have always outyielded imported and improved varieties in local research programme.

b) Cracking Clays. These are the heavy alluvial clays of the Nile Valley on which the main crops are sorghum, sesame and cotton ; on the irrigation schemes groundnuts and wheat are also grown. There are areas of lighter soils associated with the heavy clays on which the farmers grow short term sorghum, cucurbits, maize , okra , cowpea and other vegetables.

The rainfall in the clay areas in South Kordofan can be quite high but in Central Region it is much lower and irrigation is necessary . In general growing conditions are better than on the goz and there is a greater choice of crop varieties , for example sorghum ranges from the short term ( 90 days) commercial varieties such as Gadam El Hamam to the long term ( 180 days ) local varieties such as Kurgi.

Even though the choice of crop is easier on the clay soils, it is important that where possible and regardless of soil type, any future programme should obtain the seed locally; if this is impossible then the selected varieties must be locally approved as being suitable for the prevailing conditions.

c) Water Availability . The rainfall ranges from more than 800 mm in the south of S.Kordofan to almost nil in the Red Sea Hills. The availability of water has a similar range from zero over most of N. Darfur and N.Kordofan to almost unlimited quantities for farmers located on the banks of the Nile.

8.2.3 Farming Systems. The following list includes some of the farming systems which are practiced in the Regions covered by the recent Project. It shows quite clearly that the systems are very varied and that it is not possible to provide a common seed package which would be acceptable to all the farmers.

a. Millet-Groundnut System occurs throughout the goz areas, millet is the staple grain crop while groundnuts are grown for sale. Minor crops include Kerkadeh , sesame, cowpea , watermelon and gum arabic , vegetables are seldom grown.

b. Millet -Migratory Herding System - this occurs in western South Kordofan and in South Darfur. It combines millet cultivation with livestock production, the latter is the primary enterprise with the millet being produced where and when possible.

c. Clay Plains System - occupies the clay plains of South Kordofan ; sorghum is the main crop, other crops include groundnuts , sesame, maize , okra and vegetables.

d. Smallholder Jebel System - the entire holding is on jebel footslope soils because there is no easy access to the clay plains . This system occurs in the Nyima and Heiban Jebel areas of S.Kordofan ; the main crops are sorghum, groundnuts , sesame , okra , cucurbits and vegetables.

e. Smallholder Mechanised System - occurs in S.Kordofan on those schemes administered by the NMAPC . Mechanisation services are provided for cotton and sometimes for sorghum, other crops grown on the household plot include groundnuts, sorghum, maize , okra , cucurbits, and vegetables.

f. Large Scale Mechanised Farming - these are schemes coming under the Mechanised Farming Corporation . Farms are large ( 1000-1500 feddans) and the crops grown are sorghum and sesame.

g. Irrigated Fruit/Vegetable System - this system occurs in areas where there is ground water near to the surface ( Bara in N.Kordofan , Abu Gubeiha in S. Kordofan , the main wadi complexes in S.Darfur, and near the high rivers in Eastern/Central Regions ). Farmers specialise in producing fruit and vegetable crops for sale but they also produce their own food crops under normal rainfed conditions.

h. Irrigated Farming in the Nile Valley - these are large schemes or small individual plots between the schemes. They grow mainly cotton , sorghum and vegetables.

This list of eight farming systems is by no means exhaustive but it does illustrate the wide diversity that exists in the current Project Area and the choice of crops grown in each system .

8.2.4 Nutritional Status . The primary objective of the Project is to improve the nutritional status in the smallholder farming sector. First this can be done by providing energy foods as without energy it is not possible to cultivate ones holding, or secondly one can assume that farmers will have access to some grain seed so the distribution of vegetable seeds would improve the quality of their food intake. A third possibility is to try and cover both these needs as was done in the current Project when the seed packet included both grain/starch and vegetable crops. Thus the selection of seeds to be included in the packet also depends on the nutritional objective.

8.2.5 Seed Availability. Good quality seed is not always available in the Sudan , particularly in the more remote areas such as N,Darfur. The selection of crops for any future project must be made with the knowledge of first, what is available locally and second what is available from sources such as the Sennar Seed Farm.

8.2.6 Summary . The variation in soil type and water availability in the different areas of the Sudan has a profound effect on the crops which can be grown . Other factor affecting the choice of crop and crop variety include nutritional requirements , farming systems , seed availability and farmers preferences.

During the current Project it was evident that distributing similar packets of seeds in all areas was unpopular with the MOA and some of the farmers. It is regrettable that the time constraint and the availability of seeds restricted the choice of crops. An assessment of the six crops included in the current Project and an identification of the crops to be distributed in any follow up Project will be an important part of the evaluation exercise.

### 8.3 Evaluation of the Current Project.

8.3.1 Introduction. It would be unwise to make recommendations for future assistance towards a follow up project without definite indications of the success of the current Project. The initial phases of seed procurement, packaging and distribution have been completed successfully with the seed packets reaching the farmers just before or just after the onset of the rains. It is believed , however, that a further evaluation phase is essential to assess the overall impact of the Project.

8.3.2 Evaluation . This would be done by one person and would involve visiting all the areas in which seed has been distributed.

Those questionnaires already handed out, as was done in S. Kordofan , would be collected while a simple questionnaire survey would be undertaken in the other Regions . The information to be collected would include:-

- an analysis of individuals receiving seed.
- the proportion of people who did not plant the seeds and the reasons for failure to plant.
- the farmers' own assessment of production levels.
- the farmers' preference regarding the seeds issued.
- the farmers' preference for crops to grow in household gardens.
- names of preferred varieties .
- the farmers' ideas regarding a follow up Project.

Opinions and ideas would be sought also from Government staff and personnel of the charitable organisations.

In addition to the information obtained while visiting the Regions, all the records left behind by the Seed Distribution Co-ordinators would be available for further analysis.

8.3.3 Work Programme. It is estimated that on arrival the Consultant would require to spend one week in Khartoum . This would provide an opportunity to meet UNDP/HTS, Voluntary Organisation and Government staff; it would also be used to arrange transport, finance, travel schedules etc.

This time required in each region will be about three weeks . This would mean very tight schedules which may involve some slippage if travelling is difficult because of adverse road conditions. Finally some three weeks will be needed in Khartoum to analyse the data and to write the report . This gives a total of three man months which is well under the balance of six man months which remain in the budget.

Experience gained in the current Project emphasises the need for making an early start if UNDP approves a follow up Project in 1986. It is proposed , therefore , that the evaluation phase should start at the beginning of September, 1985 when the crops in S.Kordofan and S.Darfur should be well advanced . The evaluation report would be submitted to UNDP by the end of November.

8.3.4 Costs. It is proposed that the cost of the evaluation phase should be met from saving made in the original budget. The estimated costs are as follows:-

a. Professional Staff	US\$
3 man months at \$ 5,400	16,200
b. Subsistence Allowance.	
Professional Staff 27 days Khartoum	5,100
15 days El Obeid, Kasala etc.	
48 days other stations	
Extension staff.	650
Driver	370
c. Fuel 7000 km at 20 km - 350 gallons 8 drums of diesel	
( El Obeid price )	1,400
d. Oil, Vehicle spares	700
e. Airfare London / Khartoum /London	1,200
f. Visas , communications , office facilities	750
g. Report Preparation (Khartoum )	500
	<hr/>
Total	26,870
h. Contingencies	2,500
	<hr/>
Grand Total	29,370
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Out of the original Project budget the credit balance at 30.6.85 was sufficient to cover the cost of the evaluation phase.

## APPENDIX A

### TERMS OF REFERENCE

#### I. Background and Justification.

The household garden is an essential part of the rural economy. Normally planted at the onset of the rains the household garden is intended to provide food for the family in the "hungry months", just prior to harvesting of the main field crops.

As estimated 763,000 people in Darfur Region, 1,268,000 in Kordofan, 1,185,000 in the Central Region, and 1,156,000 in the Eastern Region

have been severely affected by drought. Among the consequences of the

continuing drought has been the massive migration of households from rural

areas to towns, and from areas of inadequate rainfall and/or water supply

to areas better supplied, as well as the impoverishment of many families.

Few are well equipped to take advantage of the 1985 growing season should

the rains come in adequate quantity. Large donors are now investigating

ways of providing farmer families with improved seed for staple crop

production (sorghum, ...). No similar effort is under way for vegetable

and household production.

It is not entirely clear what seed supplies are available to drought affected households. Seed preservation has traditionally been practiced, but successive seasons of drought, it is believed, have depleted reserves.

Some seeds are sometimes available in local markets, but these require cash for purchase and are beyond the means of the most seriously affected household.

Research in the country has focussed on cash crops and field production.

There is some indication that the productivity of household gardens has been declining in recent years but that a variety of measures could reverse this trend.

The diet of most drought-affected populations is now based on aid-supplied dura, with small supplies of lentils. Oil, and dried, whole fortified milk reaches some groups. The most affected populations have little access to the

dried chile pepper, okra (bamia, ladyfinger) onion or tomato which might normally be part of a vegetable stew served with the cereal. Four to five tomatoes in the El Fasher market cost (\$ 0.50) (January 1985). Vegetables and fruit are needed in the diet to develop and maintain resistance to disease as well as to avoid deficiency diseases. Data on nutritional status is scanty.

A UNICEF - funded study in the Red Sea Hills in 1983 suggested high levels of severe and moderate malnutrition have been present for some time. A recent survey carried out by the Red Crescent Society in North Darfur and in a small number of South Darfur locations , suggests that 50 to 80 percent of young children in families who have recently migrated are malnourished; for children in established families the rate of malnutrition was 30 to 50 percent . An oxfam - UNICEF survey in Kordofan in November 1984 showed about 50 percent of children under 5 to be malnourised, of which about 10 percent were judged severely malnourished.

While drought has increased malnutrition , estimates by medical personnel and clinical evaluation of nutrition - related conditions suggest that malnutrition is not a new problem . The inadequacy and inconstancy of food production , the heavy work burden of females in some areas, improper food preservation , shortage and preparation practices which lead to food or nutrient loss, and intra-family food distribution practices which discriminate against group nutritionally at risk, all contribute to malnutrition and call for a longer term development effort.

## II Project Activities.

1. Preparation of sufficient number of seeds to fill 300,000 seed packets. Choice of seeds should be made in consultation with relevant agriculture officials in the four regions and with the Seed Propagation and the Horticulture Departments in the Central Ministry of Agriculture. Seed should include only these foods traditionally cultivated and consumed in the designated project areas, and should include vegetables providing Vitamins A and C, iron and vegetable protein. Seed should be drought - resistant and of true breeding line.

2. Packaging of seed in 300,000 household packets and preparation and printing of simple , visual instructions.

3. Identification of target households and development of networks for distribution of seeds to target groups relying on existing government / and non -governmental agencies.

Such as the School Gardening and Nutrition Education Division of the Ministry of Education, the Social Welfare Department , the Sudanese Socialist Union, Women's Union , the League of Red Crescent Societies. Some seed packets should be reserved for distribution to schools , particularly boarding schools, and youth and other community groups.

A P P E N D I X B

ITINERARIES

B.1 J. Harvey , Co-ordinator , Darfur Region.

April 22nd Travel London - Khartoum

23rd Briefing with Chris Howse (HTS).

Meeting with Abdel - Gufaar and Robert Watkins (UNDP) .

24th Meeting with Marianne Nolte.

Meeting with Arthur Holcombe, Sue Holcombe, and Robert Watkins.

25th Meeting with Robert Watkins and Rafik Shukor ( UNDP).

Meeting with Andrew Timpson ( Save the Children Fund ) .

27th Preparation of basic extension leaflet.

28th Travel Khartoum - Nyala (WSDC charter ) .

Meeting with George Calderbank and Hussan Abd El Gaadar of WSDC to discuss seed provision to WSDC settlements.

29th Meeting with Chris Eldridge and other staff of SCF to discuss assistance with distribution.

30th Meeting with James Ogborne and Osman Wad Hajali (agronomists ) of WSDC to discuss jubraka production . Meeting with James Morton (Monitoring and Evaluation, WSDC) to discuss population census data.

Travel Nyala - El Fashir ( car ) .

May 1st Meeting with Dr. Ahmed Ibrahim Yusif and Ali Mohamedein ( Regional Ministry of Agriculture ) to introduce project.

2nd Meeting with RMA and Abbas Abd El-Manar ( Drought Committee ) to discuss seed allocation criteria.

4th Meeting with Ali Mohamedein to discuss distribution channels and appointment of counterpart manager.

Inspection of UNDP vehicles with Sydney Tailor (UNV). Check out UNDP radio.

5th Meeting with M.Zegers of Red Cross to discuss assistance with distribution .

Meeting with Yvonne Ayoub and Omar Zakharia Bakhiet.

6th Travel El Fashir - Nyala (bus).

7th Meeting with SCF staff to discuss seed storage and transportation .

8th Travel Nyala- Zalengei.

Meeting with Mohamed Abdullah El Hadi , Deputy Chief Agricultural Officer , Jebel Marra Rural Development Project, to discuss seed requirements and distribution in project area.

4. Motivation , orientation and training of field workers from the above organisations.
5. Meetings with the Area Council and Rural Council members in target areas to discuss the emergency programme and to elicit their support and involvement.
6. Development of radio programmes for multiple airing in support of project objectives.
7. Preparation of a project proposal for a longer term development of household gardens and for improvement of household food preservation, storage and preparation practices and of nutritional behaviours.
8. Midterm and Harvest monitor of project progress by Regional Counterparts. Preparation of final report assessing project impact according to agreed - upon indicators.

- 22nd Meeting with WSDC Project Monitoring and Evaluation Unit to arrange for collection of additional survey data on Jubraka cultivation, seed availability, and farmer reaction to seed distribution.
- 23rd Complete repacking of seeds.  
Meeting with Geoff Warren (SCF) to arrange transport contract.
- 25th Meeting with El Amina Saakin Ahmed, SGNEP, to discuss assistance with seed distribution.
- 26th Move seed to SCF office.  
Arrival of Robert Watkins and Chris Howse.  
Meeting with Imam Malik, Robert Watkins and Chris Howse to discuss implementation of project.
- 27th Printing distribution documentation.
- 28th Travel Nyala - Jumeiza (WSDC Research Farm) (car).
- 29th Travel Jumeiza - Buram - Wad El-Hajjam - Tullus - Nyala.
- 30th Repair Rented Landrover.
- 1st Meeting with Adib Mahjoub, Information Officer, Ministry of Regional Affairs, to discuss scripts and schedule for radio broadcasts.  
Meeting of Drought Rehabilitation Technical Committee to discuss latest population update figures.  
Meeting with Area Council Executive Officers to discuss seed distribution (UNDP, EEC, and USAID).
- 2nd Travel Nyala - Kas - Nyala (car).
- 3rd Meeting with WSDC, PMEUE staff - analysis of Jubraka survey data.  
Second Radio Broadcast (news item)
- 4th Meeting with Fatha El Rahim to arrange direct seed transportation by Rural Council Officers.
- 5th Travel Nyala - Shari'a - Nyala.
- 6th Travel Nyala - Zalengei.  
Meeting with Chris Lomas, Chief Agricultural Officer JMRDP to follow up seed distribution.
- 7th Travel Zalengei - Nyala.
- 8th Data Collection at WSDC (land systems, household consumption).  
Renegotiation of contract directly with SCF sub-contractor.  
Third Radio Broadcast (interview).
- 9th Travel Nyala - El Fashir.
- 10th Meeting with Dr. Ahmed and Ali Mohamedein (RMA) to report on Progress with seed distribution. Discussion of staff incentives and proposed UNDP assistance with small - scale irrigation projects.  
Travel El Fashir - Nyala.

- 9th Meeting with JMRDP senior extension staff and El- Tayeb Saleh Gaddal, Community Development Officer, to discuss distribution, problems in reaching women farmers, and JMRDP's experience with posting women extension assistants. Meeting with Yusif Ahmed Sharif El-Din, Horticultural Officer, to discuss suitability of seed for rainfed cultivation.
- 10th Visit to Dankuch pilot irrigation scheme.
- 11th Travel Zalengei - Nyala (Bus).  
Meeting with Yusif Ali Mahdi ( Director of Agricultural Production, RMA ) to introduce project.
- 12th Arrival of Imam Malik ( Counterpart Manager ).  
Meeting with Ahmed Musa Said ( Director of Extension ) to discuss possible involvement of RMA staff in seed distribution.  
Meeting with Mohedein El Amin, Senior Executive Officer, South Darfur Province, to discuss seed distribution through the administrative network.
- 13th Briefing with Imam Malik to establish project base in Horticulture Department, RMA.
- 14th Inspection of vehicles available for hire.
- 15th Delivery of rented vehicle. Service and maintenance.
- 16th Meeting with Area Council Officer to adjust population census data and discuss distribution criteria.
- 17th Travel Nyala- El Fashir (car).
- 18th Meeting with RMA (Ali Mohamedein) to approve final distribution schedule modified according to information provided by Area Council Officers.  
Meeting with Nafisa Sinaari and other staff of the School Gardens and Nutrition Education Department of the Regional Ministry of Health to discuss participation in seed distribution and possible involvement in longer term nutrition /agricultural projects.  
Meeting ( Department of Statistics) to discuss movement of migrants.  
Meeting with Idris Jizu, Senior Administrative Officer, Central ( El Fashir) District Area Council, to discuss movements of migrants.
- 19th Travel El- Fashir-Nyala (car).  
Seed arrive in Nyala (SCF store).
- 20th Arrange repacking of seeds.  
Meeting with Adrienne Martin ( Oxfam Consultant ) to discuss vegetable production and family nutrition.  
First Radio Broadcast ( new item )
- 21st Repacking seeds.  
Meeting with Nigel Talyor ( Oxfam Nutritionist) to discuss contribution of vegetables in rural diets in Darfur.

- 17th Meeting Jibril Tia ( Agricultural Commissioner S. Kordofan )
- 18th Visit villages round Kadugli , seed arrive Dilling.
- 19th Kadugli - Dilling - Kadugli , collect seed.
- 20th Two visits to Dilling to collect seed.
- 21st Distributing seeds in Kadugli and El Buram Rural Councils.
- 22nd Distributing seeds in Kadugli and El Buram Rural Councils.
- 23rd Distributing seeds in Kadugli and El Buram Rural Councils.
- 24th Collect seeds from Dilling.
- 25th Deliver seeds to Kadugli Rural Councils.
- 26th Travel Kadugli - Dilling - Delami , distributing seeds Delami Rural Council.
- 27th Delami - Um Berembeila - Dilling , deliver seeds Un Berembeila and Rashad Rural Council.
- 28th Dilling - Kadugli meeting with Agricultural Staff to plan continuation of distribution programme.
- 29th Meeting Jibril Tia regarding Transport.
- 30th Kadugli - El Obeid - Dilling seeds to El Obeid and obtained fuel for Dilling
- 31st Dilling - Abu Zabad - El Odaiya, delivered seeds to Abu Zabad and El Odaiya Rural Councils and arranged distribution schedules.
- June 1st El- Odaiya - El Fula - Dilling deliver seeds to El Fula MOA office, collect seeds from Dilling.
- 2nd Dilling - Rashad, deliver seeds to MOA office Rashad and arrange a distribution schedule; also deliver seeds for Abbasia R.Council.
- 3rd Rashad - Abu Gubeiha - distribute seeds in Abu Gubeiha Rural Council.
- 4th Abu Gubeiha - Rashad - Karshola - Dilling distribute seeds in Abu Gubeiha Rural Council, deliver seeds to Karshola Rural Council and MOA Office.
- 5th Dilling - Kadugli , deliver seeds for Kadugli MOA office.
- 6th Finalise all arrangements in Kadugli , meet commissioner, NMAPC, MOA staff to say thank you for assistance.
- 8th Kadugli- Dilling - El Obeid . Finalise all arrangements in Dilling, load last boxes of seeds for El Obeid.
- 9th El Obeid - Rashad - Seneih - El Obeid distribute seeds in Rahad Rural Council and deliver balance to R.C.staff.
- 10th Distribute seeds in Hartagat and Kazigail R.Cs of El -Obeid District.
- 11th Deliver seeds to MOA offices and to CARE.
- 12th Finalise arrangements in El -Obeid , meet MOA staff to say thank you for assistance.
- 13th El- Obeid - Khartoum.
- 15th Meeting R.Watkins , debriefing with C.Howse.

- 11th Project Administrative matters.
- 12th Project Administrative matters.
- 13th Replacement of SCF transport sub-contractor with new agent for remaining 60 bags of seeds.
- 15th Flight Nyala - Khartoum cancelled.
- 16th Travel Nyala - Khartoum (WSDC charter ).
- 17th Report Writing .
- 18th Report Writing.
- 19th Report Writing.
- 20th Depart Khartoum.

**B.2 R.Briggs , Co-ordinator - Kordofan.**

**April 27th Travel London - Khartoum.**

- 28th Briefing with Chris Howse ( HTS ),  
Meeting with Robert Watkins ( UNDP ), W. Chastain ( CARE )
- 29th Arranging Transport, meeting C.Tapp ( CARE ) . S.Holcombe Consultant who devised the origin Jubraka Seed Distribution Project.
- 30th Meeting with A.Carter ( UNICEF ) ; drafting radio programme and extension leaflet for translation.

**May**

- 1st Meeting Hamza Abu Gaballa ( NMAPC )
- 2nd Meeting C. Tapp and R. Roone ( CARE ) , R. Watkins ( UNDP )
- 4th Arranging transport , vehicle spares , fuel.
- 5th Travel El Obeid .
- 6th Meeting Abdel Qasim , A.O.Hakim to discuss Regional Programme.
- 7th Meeting at Ministry of Agriculture to discuss transport , fuel , staff seed distribution . Meeting with Hashim Hassan.
- 8th Arranging drivers, trying to contact Khartoum (UNDP) by radio.
- 9th Ministry of Finance /refuel requirements, obtaining data population.
- 11th El Obeid - Dilling - El Obeid to arrange store for seeds.
- 12th El Obeid to Kadugli .
- 13th Meeting with Sheik El Din (NMAPC) , El Agils Bilal (MOA) Syd Mansow (NWC)
- 14th Arranging distribution schedules for Kadugli District.
- 15th Arranging distribution schedules for Kadugli District.
- 16th Arranging distribution schedules for Kadugli District.

- 22nd Return to Khartoum . Detailed discussion of proposed distribution organisation, transport costs timing etc.
- 23rd Drew up final distribution plan, prepared estimate of costs, tour.
- 24th Itinerary and arranged despatch of seed from Khartoum,
- 25th Travelled to Wad Medani , visits to Director Horticulture and PLAN office for discussion.
- 26th Visit PLAN office and agreed detailed distribution plan for Gezira East District . Finalised plan with Department Horticulture, obtained permit for fuel etc.
- 27th Visited Sennar and Suki Districts , met and briefed Horticultural staff, met Executive Officers.
- 28th Visited Gezira North and Upper Gezira Districts and briefed Horticulture staff and met Executive Officers.
- 29th Travelled to Gedaref and drew up programme for distribution with department Horticulture.
- 30th Visited Kamara, Assar, Kasab, and Kajara villages with Horticultural Inspector and met village committees.
- 31st Travelled to Kasala.
- June 1st Visit Qash Corporation and drew up detailed plan of distribution
- 2nd Visit Northern part of scheme , met Farmers Union Representative and staff.
- 3rd Visit Qash to resolve minor problems, discussion with Directors of Horticulture and Regional Director Agriculture.
- 4th Visit Southern part of scheme.
- 5th Travelled to Port Sudan.
- 6th Arranged programme with Joint Nutrition Support Programme , visit UNICEF and UNHCR and made transport arrangements with WFP.
- 7th Travelled to Tokar.
- 8th Discussed distribution and drew up detailed plan with Tokar Corporation Management . Travelled to Port Sudan.
- 9th Complete detailed plan with JNSP.
- 10th Made all final arrangements.
- 11th Travelled to Kasala via Derudie where met Executive Officer.
- 12th Travelled to Wad Medani via Gedaref to check on distribution and collect forms
- 13th Collect forms and check on distribution with Department of Horticulture and PLAN then travel to Khartoum.
- 14th up to 20th Preparing reports and debriefing etc.

- 15th Meeting R.Watkins , debriefing with C. Howse.
- 16th Meeting A.Holcombe (UNDP) , and R.Watkins.
- 17th to 25th Preparing report , finalising accounts, transport, fuel.
- 26th Depart Khartoum.

**B.3 P.W. Humphreys , Co-ordinator , Central and Eastern Region.**

May 4th Arrive Khartoum.

- 5th Briefing with Robert Watkins and contact with W.F.P staff.
- 6th Purchased maps and preparing outline plans.
- 7th Further discussion with Robert Watkins and assembling equipment
- 8th Received UN vehicle , purchased spares, but experienced fuel problems.
- 9th Left vehicle at Toyota Agents.
- 11th Further problems with UN car.

12th Travel to Wad Medani and visit Department of Horticulture and Director General of Agriculture. All away in Khartoum and now news of seed scheme.

Made arrangements to call back on return trip. Discussed problems with Musa Mahgoub , Acting Chairman of Committee for Combating Drought and Destertification . Made contact W.F.P office to enquire about transport, population figures and communications . Traveled to Gedaref.

13th Traveled to Kasala.

Met Acting Directors General Agriculture Eastern Region and Deputy Governor for general discussion . Made contact Dutch Team and CARE.

14th Meeting with CARE staff to discuss transport . Further discussions with Acting Regional Director Agriculture and obtained letters of introduction to Qash and Tokar Agricultural Corporation. Visit Souk .

15th Visit Qash Agricultural Corporation for discussion with Management then travelled to Port Sudan.

16th Made contact with WFP, UNHCR, CARE , OXFAM, and UNCIF Joint Nutrition Support Project to obtain background and assess situation.

18th Visit Tokar Agricultural Corporation , Met executive officer - Tokar District and discussed project.

19th Meeting with UNICEF Joint Nutrition Support Project staff and drew up provisional plan . Then travelled to Kasala.

20th Travelled to Gedaref, made contact UNHCR and Department of Horticulture draw up provisional plan then travelled to Wad Medani.

21st Met Director General Agriculture, Central Region , and Director of Horticulture Discussed project and draw up provisional plan including local supervision and transport requirements.

UNITED NATIONS DEVELOPMENT PROGRAMME

GENERAL QUESTIONNAIRE

To be completed by Coordinator:- Name-----

Name of Village----- Area-----

Population----- Date of Visit-----

Are household gardens part of farming system-----

If not is there any provision for "Hungry months"-----

Describe alternative system -----

Who in the household is responsible for garden-----

Approximately what size are the gardens-----

What percentage of population have gardens:-

This year-----

Last year-----

If gardening no longer practised what are the reasons:

Shortage of land-----

Lack of rain-----

Others-----

Is produce for house consumption or sale-----

Is there access to irrigation water-----

What is the source of irrigation-----

Complete following in respect of crops usually grown:-

Crop	Variety	Source of Seed	Area	Yield
Sorghum				
Maize				
Cowpea				
Pigeon pea				
Groundnuts				
Chili				
Okra				
Tomato				
Pumpkin				
Cucumber				
Onion				

UNITED NATIONS DEVELOPMENT PROGRAMME

GENERAL QUESTIONNAIRE

To be completed by Coordinator:--  
 Name-----  
 Area-----  
 Date of Visit-----  
 Population-----  
 Are household gardens part of farming system-----  
 If not is there any provision for "hungry months"-----  
 Describe alternative system-----  
 Who in the household is responsible for garden-----  
 Approximately what size are the gardens-----  
 What percentage of population have gardens:--  
 This year-----  
 Last year-----  
 If gardening no longer practised what are the reasons:--

A P P E N D I X C

FORMS USED DURING THE PROJECT

Complete following in respect of crops usually grown:--  
 What is the source of irrigation-----  
 Is there access to irrigation water-----  
 Is produce-----  
 Others-----  
 Lack of rain-----  
 Shortage of land-----

Crop	Variety	Source of Seed	Area	Yield
Sorghum				
Maize				
Cowpea				
Pigeon pea				
Groundnuts				
Chili				
Okra				
Tomato				
Pumpkin				
Cucumber				
Onion				

UNITED NATIONS DEVELOPMENT

PROGRAMME

MARKET QUESTIONNAIRE

To be completed by Coordinator .

Name of Village ----- Area -----

Population ----- Souk day -----

Name of Coordinator ----- Date of visit -----

Vegetables , fruit and seeds on sale.

Item	Source	Availability	Unit	Price
Sorghum				
Maize				
Cowpea				
Pigeon pea				
Groundnuts				
Sesame				
Chili				
Okra				
Tomato				
Pumpkin				
Egg plant				
Cucumber				
Melon				
Onion				
Orange				
Lime				
Paw Paw				
Tangerine				
Banana				
Onion Seed				
Okra Seed				
Pumpkin Seed				
Tomato Seed				
Others.				



List which crops were most popular-----

-----

-----

-----

-----

Would respondents like similar assistance with seeds next season.

Yes ----- No -----

What seeds/ varieties would they prefer.

Crop	Variety

Any other relevant comments:

of the seed packets, criteria for selection of farmers to whom the seeds be given, technical and nutritional advice.

3. Meetings will then be arranged in each of the seven agricultural blocks the Horticultural Inspector, supported by Field Officers and Agricultural with responsibilities in the respective blocks, will again explain the UM Project to as wide a farmer audience as possible.

4. With the aid of farmers representatives in each block and with reference the criteria for distribution, seeds will then be given to deserving farmers.

5. Supervision and technical guidance will be provided by Tokar Project staff under the direction of the Horticultural Inspector.

6. It is understood by both parties that an evaluation process will be under later in the year, ideally in November.

7. The UNDP agrees to provide TA allowance for staff while they are assisting with the Household Garden Project as per the attached schedule.

General Manager Tokar

Signed

UNDP Coordinator

Signed

A P P E N D I X D

TEXT OF FORMAL CONTRACT AGREEMENT

UNITED NATIONS DEVELOPMENT PROGRAMME

REHABILITATION OF HOUSEHOLD GARDENS PROJECT.

SEED DISTRIBUTION AGREEMENT

This agreement, dated 8th June 1985, is between the Tokar Agricultural Corporation as represented by the General Manager, and the UNDP Rehabilitation of Household Gardens Project, represented by the appointed Coordinator, P.W. Humphreys.

UNDP agrees to supply under provision of the Household Garden Project 22 boxes each containing 300 packets of seed, a total of 6600 packets.

Arrangements will be made by the Co-ordinator to release the seeds from the World Food Programme store in Port Sudan upon production of suitable authority from the General Manager of the Project.

The Project agrees to the following distribution and technical support procedure

1. Seed to be collected from Port Sudan in Project transport and taken to the project store in Tokar.
2. The Agricultural Inspector in charge of the North and South sections will call meetings of their respective Production Councils on which the Farmers Union is represented. These meetings will be addressed by the Horticultural Inspector, who will explain the purpose of the UNDP Project, the contents of the seed packets, criteria for selection of farmers to whom the seeds shall be given, technical and nutritional advice.
3. Meetings will then be arranged in each of the seven agricultural blocks where the Horticultural Inspector, supported by Field Officers and Agricultural staff with responsibilities in the respective blocks, will again explain the UNDP Project to as wide a farmer audience as possible.
4. With the aid of farmers representatives in each block and with reference to the criteria for distribution, seeds will then be given to deserving farmers.
5. Supervision and technical guidance will be provided by Tokar Project Staff under the direction of the Horticultural Inspector.
6. It is understood by both parties that an evaluation process will be undertaken later in the year, ideally in November.
7. The UNDP agrees to provide TA allowance for staff while they are assisting with the Household Garden Project as per the attached schedule.

Signed

Signed

General Manager Tokar

UNDP Coordinator

Date 8th June

UNITED NATIONS DEVELOPMENT PROGRAMME

REHABILITATION OF HOUSEHOLD GARDENS PROJECT.

This agreement dated 10th June 1985 is between the WHO/UNICEF Joint Nutrition Support Programme (JNSP) as represented by the Project Manager Mohamed Tahir Mamad and the UNDP Rehabilitation of Household Gardens Project (UNDP) as represented by the Co-ordinator, P.W.Humphreys.

UNDP agrees to provide 142 cartons of seed, each containing 300 packets, ex World Food Programme (WFP) store, Port Sudan. A copy of the authority to release the seed is attached.

Seeds will be distributed as follows:- Sinkat District 21 cartons, Haiya Districts 20 cartons, Derudieb District 14 cartons, Tokar North 35 cartons and Tokar South District 28 cartons. Transport from WFP store to Districts is specified in the attached authority.

Full details of the training and distribution organisation are set out in the attached paper which forms part of this agreement. List of villages to which seeds will be distributed and staff involved in the training and supervision are also shown, as is a budget specifying how the costs will be met.

The sum of Ls. 8,290 being the UNDP component of the budget has been paid to JNSP.

## A P P E N D I X E

### DISTRIBUTION , TRAINING AND STAFFING PLAN WHO/UNICEF JOINT NUTRITION SUPPORT PROGRAMME

#### Orientation of Farmers in Horticulture.

Sponsoring Department Horticulture.

Cooperating Department Soil Conservation and District Councils.

Objective :- To promote and encourage kitchen gardens and to orient the farmers in using the seeds.

Duration :- 2 days for orientation plus one day travel for each centre.

Components:- 1 orientation of farmers.

Six trainers will form 3 teams . The trainers are staff of the Horticultural Department working at district level as assistant inspectors . They are from Sinkat , Haya , Derudeib , Erkawit, Dolabiyai and Tokar.

A short training for trainers will be undertaken by the Director of Horticulture and Soil Conservation departments so as to prepare them on training aspects in the field. These training will be through the UNDP officer Khartoum.

24 training places have been identified for training of farmers/ household . Each team will cover 8 places ( see annex I ) .

The District executive officer will collaborate by informing the people and bringing them to the training centres .

Small pamphlet on the use of seeds soil and land preparation will be undertaken . There will be 25-30 farmers at each centre .

#### 2. Kitchen Gardens.

To promote kitchen gardens seeds and equipments will be provided to the farmers.

The seed packets will be provided by the UNDP. The equipment and implements will be provided by UNICEF and by the JNSP.

There is a possibility of extending this household level activity by providing seeds for dura and millet to be cultivated in larger space.

#### 3. Supervision and Monitoring .

The technical supervision and monitoring will be provided by the departments of Horticulture and soil conservation . The day to day supervision will be done by the Executive Officer.

Proper monitoring forms will be developed to check the distribution of seeds and the follow up system for growing of the seeds.

Village Committees will be formed together with a committee at the district level under the district officer to provide a monthly report on the activities.

SPHERE

**B U D G E T**

Team orientation course ( 8 teams x 2 people ) UNDP

Place : Port Sudan	Duration : 1 day + one day travel.		
Transport cost: Public Transport	Ls. 30 x 16 =	Ls. 480	
Trainers stipends	Ls. 20 x 16 x 2 =	Ls. 640	
Honoraria for trainers	Ls. 25 x 3 x 2 =	Ls. 150	
Sub-total		<u>Ls. 1,270</u>	

Farmers orientation course : JNSP will pay.

Travel for farmers	25 x 10	Ls. 250	
Stipends for farmers	25 x 10 x 2	Ls. 500	
Trainers' transport	2 x 25	Ls. 50	
Sub-total		<u>Ls. 800</u>	
Cost of 24 centres	24 x 800	Ls. 19,400	

Trainers' fees : UNDP

16 trainers x 2 days x Ls. 20 x 3 courses		Ls. 1,920	
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Supervision : UNDP

2 persons 2 x 42 days x Ls. 25		Ls. 2,100	
Fuel , oil etc (JNSP vehicle )		Ls. 4,000	
Sub-total		<u>Ls. 6,100</u>	

UNDP Total Expense	<u>Ls. 9,290</u>	JNSP	<u>Ls. 19,400</u>
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STAFF OF THE HORTICULTURE  
AND SOIL CONSERVATION  
PARTICIPATING IN FARMERS  
TRAINING IN THE JNSP

SPHERE

	<u>B U D G E T</u>		
1. Mohamed Ahmed El Sheikh		Horticulture	
2. Nasr Nikola Bashi		Horticulture	
3. Mohamed El Falif Mohgoub		Horticulture	
4. Nawal Abdel Hafeez		Horticulture	
5. Tahani Ahmed Abdalla		Horticulture	
6. Bakri Osman Hassan		Horticulture	
7. Bashir Suleman		Horticulture	
8. Ohag Osman		Horticulture	
9. Omer Kamil Ahmed		Horticulture	
10. Omer Mohamed Nour Khalid		Horticulture	
11. Abbasher Omer El Hassan		Horticulture	
12. Abdel Gadir Haj Ali		Soil Conservation	
13. Samira Abdel Samad		Soil Conservation	
14. Ibrahim El Sanosi Ahmed		Soil Conservation	
15. Ahlam Saeed		Soil Conservation	
16. Sami Fhalil		Soil Conservation	

MASTER TRAINERS

	<u>B U D G E T</u>		
1. Dr. Abdel Hamid Abdel Magid		Horticulture	
2. Mr. Abdalla Mohamed El Musbah		Soil Conservation	
3. Mr. Mohamed Ahmed El Sheikh		Horticulture	

ANNEX I  
TRAINING PLACES

TOKAR NORTH DISTRICT

SINKAT DISTRICT.

- Sinkat Centre:  
Villages : Adit, Sumit, Tawaya, Titia, Tikak, Aboshidal, Sinkat.
- Gebeit Centre:  
Villages: Erba, Dalab, Asot, Tedyowe, Mantouab, Gbab.
- Bramyo Centre:  
Villages : Bramyo, Shakan, Ashef, Maerit, Hiyiyab.
- Adrous Centre:  
10 Wadis

TOKAR SOUTH DISTRICT

HAYA DISTRICT

- Haya Centre:  
Villages : Haya , Oker, Mamiscit, Kmot, Atayi, Ameit.
- Tahamiam Centre:  
Villages : Tahamiam , Asot, Tolak, Emerein, Erhaib, Al Kilo.
- Shediab Centre:  
Villages : Amasa , Enha, Kas, Wadis, Shediab.
- Telegeraio Centre:  
Villages : Meninias, Sarouhiyyi, Akhabyiet, Harborra, Telegeraib.
- Musmar Centre :  
Villages : Musmar, Sigoudieb, Rogel, Habob, Jabalmusmar.
- Aryab Centre :  
Villages : Akiedyi, Cureit, Wadis, Aryab.
- Tojnia Centre :  
Villages : Zahateib, Albak, Al Klas, Tojnia, Ojrein.

DERUDEJB DISTRICT.

- Derudeib Centre :  
Villages : Tuhilla, Wadis , Ganota, Derudeib.
- Adrot Centre :  
Villages : Tauleague, Amasa , Wadis, Adrot

TOKAR NORTH DISTRICT

- Tokar Centre:

Delta

- Dolabayai Centre:

Villages : Oser, Triktayai, Odwan, Dolabayai.

- Ashat Centre:

Villages : Ashat, Wadis.

- Eiram Centre:

Villages : Eiram, Wadis

TOKAR SOUTH DISTRICT

- Agig Centre:

Villages : Agig, Adobna, Eideb, Gawi, Adam's, Cafi house, Derhaib.

- Marafeet Centre:

Delta, Wadis, Marafeet.

- Agitayai Centre:

Adarat, Wadis, Agitayai

- Ayterba Centre :

Villages : Malagit, Ayat, Hatatra, Jalhanti, Ayterba.

- Garura Centre :

Villages : Sarobat, Handa, Waorheit, Malayeit, Garura.