ENCCP POSSIBLE INTERVENTIONS IN THE MARGINAL AREA

(Consultant Report)

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EXECUTIVE SUMMARY

I. General :

1. The report investigates the possibilities of ENCCP interventions in the marginal area, which comprises the part of the project lying north of lat. 13°N. approx.

2. Though emphasis in the terms of reference of the study was on examining project supporting off-farm enterprises, an assessment of the farming potential was included to identify the major constraints for sustained production in the northern area, and verify the viability of farming for project support.

3. The methods applied for researching the questions to be answered by the study included: focus group interviews and a respondent questionnaire.

4. The investigation covered 14 villages, 7 of which were studied in depth applying the above two methods, with 75 samples of respondent questionnaires filled.

5. The basic physical features of the area reflect the dominance of sandy soils over the greater part of it, excepting its north western corner, where isolated jebels, wadis, and loamy and clay soils are to be found. Annual rainfall is in the order of 250 mms.

6. The livelihood of the population is dependent on rain-fed crop farming, gum tapping, livestock raising and some irrigation agriculture in the north western part.

7. The area fully embraces two rural councils and partially two others, with a total population estimated at 150 thousand making about 19 thousand H/holds, with an average H/hold size of about 8 persons. The area is sparsely populated.

8. Community services are existent at many places, and based on their distribution settlements could be categorized into central places, intermediate places and base villages.

II. Crop Farming :

9. Crop farming was considered under 5 types, rain-fed farming on Qoz, jubraka farming, flush irrigation farming horticultural gardens, and gum tapping. Each of these types has its own characteristics.

10. All H/holds own land for rain-fed farming activities. Exceptions are to be found at settlements which recently attracted populations for reasons of water availability. In these settlements the new-comers would obtain land on rental arrangements.

11. Ranked on the size of acreage cultivated, millet and watermelon come highest, followed by sesame, karkadee and okra. Sorghum and lubia are minor crops. On considerations of cash generation, sesame ranks first, succeeded by watermelon and okra. No groundnut is cultivated in the area.

12. Jubraka farming is extensively practised, taking two forms, separate plots on fields, and the cultivation of the house-yard. The latter is more practised in the northern parts of the area. The jubraka crops are the same ones raised in the southern parts of the project area.

13. Farming on flush irrigation is practised in the north western parts of the area on the recession lands of wadis. The acreage cultivated is small and the main crops raised are sorghum sesame and okra. Women have jubrakas too under this form of farming.

14. The horticultural activity is also concentrated in the north western part, and is established on recession irrigation, supplemented from surface water bodies and by extraction of water from wells. Crops raised are various types of vegetables with tomato and okra as the leading ones.

15. The vegetable crops find markets at the central places within the area, while are also marketed at nearby centres within and outside En Nahud Province.

16. The area is traditionally known for gum tapping, more particularly its southern parts. Production levels are showing a declining trend.

17. Livestock is intrinsic to the culture of the area. The 1984 drought had drastically reduced its numbers. Goats owned in small numbers make the dominant type,

sheep in larger flocks are owned by a few H/holds, while most H/holds own donkeys.

18. The assessment of the crop farming and the livestock raising activities reflected the following situations.

19. Rain-fed farming on Qoz experienced crop failure for almost all crops excepting watermelon for 3 out of the last 4 years. Reasons for harvest failure were inadequate rains, damage by pests and lack of seeds for planting, variantly occuring from one year to the other.

20. Jubraka farming experienced the above same levels of production and for the same reasons.

21. Gum tapping showed diminishing production levels, with only depressed quentaties of pounds weights reaching the village shops in some of the settlements surveyed.

III. Livestock :

22. Goats ranked high in the sales and purchases of the H/hold. However, livestock contribution to the H/hold economy is diminished in terms of products availed, and cash generation.

IV. Water Supply :

23. The area is generally scarce in water sources, forming part of what has been known for long as the 'problem area' of Kordofan State in terms of water provision, with a high dependency on water stored in tebeldi trees, the cultivation of watermelon and in recent years the purchasing of trucked water.

24. Settlements may be classified under three categories in terms of water provision, villages with sources of supply, villages at closer distance to sources where water could be fetched and distant villages where water is transported. The majority of villages fall under the last category.

25. The inability to obtain water for the H/hold needs, not only results in human sufferings but most importantly in the disruption of production and the instablity of the population.

V. Enterprises :

26. An inventory of the existing enterprises outside farming and livestock raising was gathered, embracing 45 enterprises, being practised in the area. Of these about 9 enterprsies engage women.

27. The range of enterprises increases with the size of the place, being central rendering services to its surroundings, or a normal village.

28. Outside merchants' activities which include, shop ownership, trade in crops, trade in water, trade in livestock, trade in veterinary drugs, and running of lorries, the rest of the enterprises inventored qualify for project support in terms of targetting.

29. Levels of cash returns from the enterprises reveal clearly the profitability of enterprises compared to crop farming, gum tapping and livestock raising.

30. Households engaged in enterprises showed better levels of house budgets as compared to those in farming only, in terms of expenditures on farming inputs, agricultural labour, H/hold sustenance and the overall economic status of the H/hold.

VI. Prospects of Interventions By ENCCP :

Some Guidelines

31. These principles were stipulated for the formulation of the recommendations :

- Stablization of the population.
- Improvement of the status of food production.
- Enhancement of cash generation.
- Minimization of risks in credit giving.
- Building on locally developed technologies.
- Devoting special attention to womens' roles in H/hold economy.
- Adoption of a zonation frame of development for the area.
- Piloting with workable models.
- Application of a sound community-based extension programme.

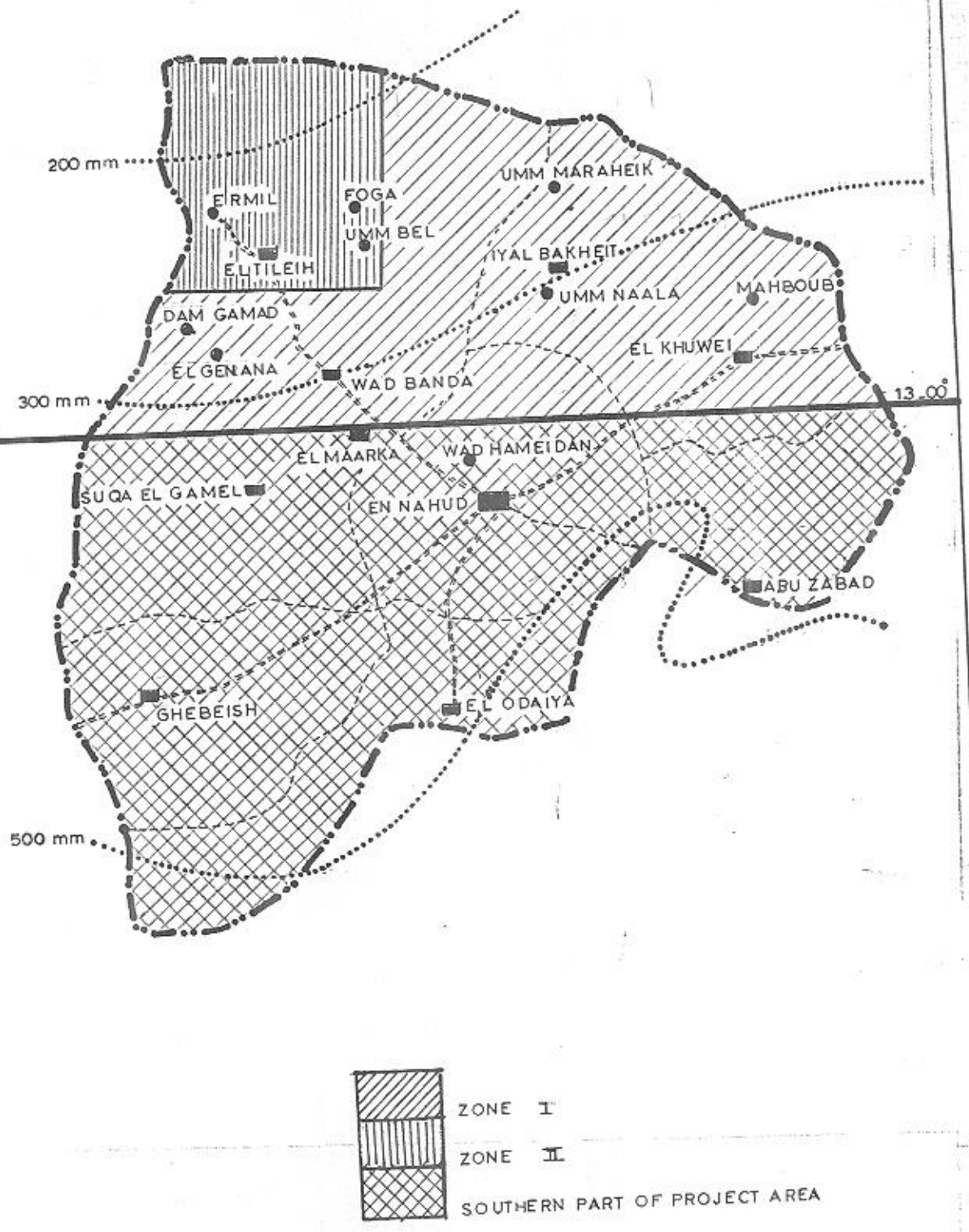
Recommendations :

A Zonation Frame

32. The area is to be divided into two zones, Fig.1, Zone I, centred on rain-fed farming on the Qoz and embracing most of the area, and Zone II comprised of the wadi lands of the north western corner. A package of activities is suggested for each zone.

FIG. (1)

THE STUDY AREA



Recommendations, Zone I :

Crop Farming on Qoz :

33. Crop farming and Jubraka farming on Qoz: provision of limited seeds loans for the millet, the watermelon and the jubraka crops, combined into that a local pest control programme.

Livestock

34. Two credit lines : a medium credit loan for the purchasing of up to 3 goats and a seasonal credit for sheep fattening, again up to 3 sheep. The two lines of credit would be open to both male and female heads of H/holds.

35. Fodder storage is stipulated as a condition for the access to the loans.

36. Para Vets and drug revolving funds programmes are to be pursued by the project with the communities credited.

Water Provision

37. Application of the communal hods programme in the area through availing medium term loans.

38. Enlargement of 'rahads' and 'turdas' through organizing labour intensive works by the communities, to be supported by medium term credit for the purchasing of excavation tools, and fence material, and by availing food for work.

Recommendations Zone II :

Crop Farming :

39. Crop farming and Jubraka farming on Qoz: same as recommended for Zone I.

40. Flush irrigation farming: provision of a seasonal loan on the same credit lines applied in the southern rural councils to support the cultivation of sorghum, sesame and jubraka crops.

41. Horticultural farming: two lines of credit are suggested: a seasonal credit on the same lines applied in the southern rural councils for the support of vegetable farming, and medium term loans for well construction and the purchasing of pumps.

42. Extension of a local pest control programme to cover flush irrigation farming and horticultural gardening.

Water Supply

43. Enlargement of 'rahads' and 'turdas' on the same considerations recommended for Zone I.

44. Medium term loans for well construction; based on the beneficiaries participation in the activity.

Enterprises, Zone I and II :

Individual Credit

45. Thirteen enterprises were singled out by the communities interviewed as meriting support by the project, on consideration that the village community is

going to benefit from them though they would be beneficiary funded. The enterprises are :-

- Animal-drawn ploughs.
- Carts drawn by horses/donkeys/camels.
- Oil-presses.
- Flour-mills.
- Transport and draught animals, donkeys/camels.
- Blacksmiths.
- Leatherworks/shoe-making.
- Tailors.
- Workshops for iron works/carpentary.
- Restaurants, coffe shops, males/females.
- Women in trade.
- Bakeries/females.
- Poultry/females.

Group Credit :

46. To be organized at two suggested centres as a start, concentrating on two activities, wool and palm-leaves products. For the running of these centres the project shall utilize its acquired experiences of organizing women centres, in the southern rural councils.

47. A hydro(geo)logist would be assigned on a short term consultancy, to study the potentialities of Zone II, regarding the surface-ground water farming-based activities.

Piloting :

48. The project would pilot with furrow farming utlizing rain-water collecting in natural depressions, or in man-made ditches, for the irrigation of furrows on the alignments of which jubraka crops would be grown, with the use of animal manure.

49. Animal-drawn ploughs on all types of soils, and especially on the clays and loams of Zone II, using donkeys and camels.

50. Introduction of camel drawn carts, as camels are owned in many villages.

51. Use of lime in hods construction which looks to have high prospects, judged on the existence of some hods in the neighbourhood of Wad Banda, built in 1916 of a mix of gravel, lime and sand. These hods are still in use, which merits piloting with lime, especially that it is available in good quantities in En Nahud Province.

52. Moving people south: the idea was not accepted by the village communities interviewed on considerations that, their land is precious to them to be changed for another home, that they would not be accepted in the southern parts of the province, and that moving out of the area should be left to individual's decision.

ENCCP INTERVENTIONS IN MARGINAL AREAS

I. General :

1. Introduction :

This is the consultant[1/] report on the possibilities of ENCCP interventions in the projects "marginal area'. The consultant was requested by IFAD to examine the issue according to the terms of reference specified in Appendix I of the report.

The consultant spent one month in the project area (Itinerary, Appendix II) during which he reviewed the available literature on the project, giving special attention to the documents refered to in the terms of reference. At En Nahud the consultant dialogued lengthly with the Extension Manager[2/] on the prospects of feasible project interventions in the northern part of the project area. One of the results of the dialoguing was to examine in depth, aside from the specific issue of the project supporting feasible enterprises, the potentials of crop production. The inclusion of crop farming into the investigation was based on two considerations:

1/ M.O. El Sammani, Sociologist.

2/ Isa Osman Sherif.

i. Crops are extensively raised in the area of concern, with each crop having certain attributes. Millet is raised as the main staple grain. Watermelon is a food crop as well as a source of water for humans and livestock, and an important fodder for livestock. While gum and sesame are cash crops, millet and watermelon generate cash too for the H/hold. Accordingly these crops deserve being looked into for credit supporting, depending on their viability which needs to be researched.

ii. Researching the viability of these crops would enable assessing their potentials, for support or inversely not, by the project, therefore making it possible in the light of additional information to reach a concrete stand on the exclusion of the marginal area from the crop credit programme, or not.

With the above issues settled, an outline for the study was developed to guide investigating the following fields :-

a. Crop farming, all field crops raised.

b. Jubraka farming

c. Gum production

d. Enterprises other crop farming

e. Moving the population south.

2. Methods :

For researching these topics the methods used were focus group interviews through meeting beneficiaries, followed by questioning samples of 10 respondents chosen

from each meeting held, using the spread sheet technique. The format for the group interviews and the spread sheets were designed and duplicated prior going to the field, with a file prepared for each village to be investigated to standarise the collection of information. The main topics examined based on the above outline were :-

2.1. Group Interviews :

- Demographic data : population characteristics, migration, ethnic composition.
- Crop farming, rainfed and irrigated (where occurs) : land tenure, crops, labour, assessment of crop performance, reasons behind depressed production.
- Gum production : hashab tenure, gum production levels, reasons behind decline in production.
- Livestock : types, size of ownership, losses during 1984 drought, livestock movement.
- Water supply : sources, accessibility, prices.
- Community services : types, accessibility.
- Community institutions : types.
- Enterprises, arranged under 8 categories: Natural resource based, livestock products, trade in water, trade, transport, food/tea making, traditional/other industries, and artisan activities.
- Exploration of prospects of project support: Crop farming rainfed and irrigated, gum production, livestock raising and enterprises.
- Discussion of proposal of moving people south.

2.2. Spread Sheet (individual questionnaire) :

(main objectives, to generate H/hold budgets)

- Crops produced : assessment of degree of H/hold sustenance and income generation.
- Livestock : income generation.
- Enterprises : main features, income generation.
- Sources of income other than above three.
- H/hold economic performance : expenditure, savings, indebtedness.

A total of 14 settlements were visited for the purpose of the study, Fig. 1, 7 ofwhich were generally surveyed, and the other 7 were studied in more detail where group interviews (males and females separately) were held and individual questionnaires (75) were filled. The selection of the settlements was guided by 4 criteria, to include:-

i. Central places which have a high probability of concentration anddiversity of enterprises outside crop farming.

ii. Ermil, Foga, Umm Bel and El Tileih to explore the possibilities of promoting irrigated agriculture (field crops and gardening) on wadi recession land.

iii. Average villages representing the prevalent types of settlements in the area.

Table 1.1. furnishes data on the 14 villages surveyed The group meetings held at the 7 villages were organized through the help of thev illage sheikhs and the local committees members who were notified about the purpose of the meetings a day ahead. There was effective presence in these meetings as might be judged from Table 1.1.

With the progress of the meetings, and at the juncture of discussing the issues related to enterprises, a sample of 5 respondents, plus, from those present indicating engagement in the inventored enterprises was randomly chosen. The balance to 10 samples was selected from those engaged in farming only, for comparability. The 10 respondents were thereafter individually met away from the general meeting and interviewed by the Extension Manager, using the spread sheets format.

In addition to the data generated through the above two methods, complementary information was gathered at the places visited. All sets of data obtained were utilized in the writing of the report.

II. Main Features of Area :

1. Geographical Setting

The marginal area occupies the northern half, approx. ofthe ENCCP. Topographically it is covered by sandy soils, varying in nature from stablized sand sheets to dune complexes, predominating its central and eastern

Table 1.1. : Settlements Surveyed.

Group I: Surveyed for Collection of General Information :

Settlement	Population (based on Sugar Cards Estimates) : Total	Number of Households	Average size of Household
El Khuwei	7300	1130	6.46
Iyal Bakheit	917	135	6.79
Foga	6000	930	6.45
Ermil	4350	785	5,54
Dam Gamad	5600	647	8.65
Wad Banda	7000	1000	7.00
Suga El Gamal	3721	670	5.55
Totals/Average	34888	5297	6.59

1/

Group II: Surveyed for collection of detailed information :

Settlement	Population (Based on Sugar Cards Estimates) Total	No. of Households	Average size of Household	Number of Respondents H/holds present at meetings: Number Males	% of H/holds in settlement	Number Females	% of H/holds in settlement
Mahboub	1520	145	10.45	75	51.72	10	48.28
Umm Maraheik	2500	250	10.00	95	38.00	23	9.20
Umm Naala	553	73	7.58	45	61.64	37	50.68
Umm Bel	1640	188	8.72	23	12.23	37	19.68
El Tileih	600	70	8.57	40	57.14	53	75.71
El Genana	1410	165	8.55	75	45.45	33	20.00
El Maarka	1475	230	6.41	82	35.65	54	23.48
Total/Averages/ Percentages.	9698	1121	8.65	435	38.80	307	27.39

1/ Plus Wad Hamidan village, one of the failure co-operatives, where a sample of 8 individual questionnaires was applied.

parts. Towards the north west, in the part bordering Darfur State and Sodiri Province the land becomes elevated, with some detached hills, generating wadi flows resulting in patchy loamy and clay soils.

Annual rainfall is in the order of 250 mm. Data from El Khuwei guaging station furnishes the readings given in Table 2.1, which reflect the established characteristics of the dry land rainfall pattern : monthly variability in time and amount and annual fluctuations. Rainfall/soils are the determinent factors of vegetation types, distribution and densities.

Livelihood :

Two forms of economies are practised by the population, crop farming and livestock raising. Under the former the crops cultivated are : millet, watermelon, sesame, sorghum, karkadee, Okra and lubia. This applies to all of the Qoz country, while on the loams and clay patches of the north western corner, sorghum, okra and sesame assume importance, besides irrigated vegetables.

Gum tapping from the hashab tree (Acacia senegal) was extensively practised in the area, which up to the early 1970's was ranked as one of the highest producers of gum in the country. In fact the income generated from gum was a major factor enduring the population to purchase high price trucked water.

Table 2.1. : El Khuwei Rainfall data (mms) 1987-1992.

Year	Months							Annual Total
	April	May	June	July	August	Sept.	October	
1987		2.0	7.0	1.5	65.0	12.0	87.0	
		4.0	3.0	8.5	6.0	1.5	32.0	
		4.0	2.0	1.0	23.0			
		6.0		1.0	7.0			
					27.0			
					1.5			
	0.0	16.0	12.0	12.0	129.5	13.5	119.0	302.0
1988			9.0	3.0	36.0	2.0		
			17.0	7.0	21.0	10.0		
					9.0	10.0		
					10.0	16.0		
					8.0	5.0		
					9.0	40.0		
					1.0			
	0.0	0.0	26.0	10.0	94.0	83.0	0.0	213.0
1989		27.0	10.0	32.0	44.0	39.0	13.0	
		18.0		10.0	124.0	6.5		
		6.0			10.0	39.0		
					31.0	12.0		
					14.0			
	0.0	51.0	10.0	42.0	223.0	96.5	13.0	435.5
1990			5.0	44.5	10.0	18.0	2.0	
				3.0	22.0	22.0		
				2.0				
				14.5				
				7.5				
				4.0				
				4.0				
				3.0				
	0.0	0.0	5.0	82.5	32.0	40.0	2.0	161.5
1991	9.5	9.0		54.0	10.0	18.0		
		7.0		40.0	34.0	5.5		
		11.0		2.0	4.0			
					17.0			
					6.5			
	9.5	27.0	0.0	96.0	71.5	23.5	0.0	229.0
1992			10.0	5.0	4.0	3.0	10.5	
				6.0	38.0	41.0		
					52.0			
					37.0			
					43.0			
					32.0			
					18.0			
					8.0			
	0.0	0.0	10.0	11.0	232.0	44.0	10.5	307.5

Livestock raising assumed a greater role in the livelihood of the population in the past, in terms of H/hold food needs and for cash generation. By origin, the village population had descended from a pure pastoral economy which lostto farming, hence a pastoral heritage, derived from camel and sheep pastoralism is entrenched in the culture of the population.

The livestock economy began to dwindle as of the late 1970's, experiencing a sharp fall as a result of the 1983-85 drought. The main animals presently raised are goats, sheep and donkeys with the presence of noticeable cattle herds in the north western part of the area. Camels are individually found, while cattle, except for the above mentioned part, is hardly existent in the rest of the area.

Apart from the livestock reared by the villagers and besides Hamar nomadic sections originating from En Nahud Province, the area is visited annually during early dry season and early wet season, by camel pastoral group from neighbouring Sodiri Province, namely : Kababesh, Kawahla, Hawawir and Beni Gerar; also by Shanabla from eastern Kordofan, and sometimes by Zeyadiya from Darfur.

3. Population :

Administratively the marginal area comprises the greater part (lying north of lat. 13°N.) of 4 rural councils, the population's of which are given, Table 2.2.

As El Khuwei and Wad Banda rural councils lie wholly above lat. 13°N (taken as the southern limit of the marginal area) and about 1/6th of Suqa El Gamal and 1/5th of En Nahud rural councils (as lying north of lat. 13°N) and based on the population projection to 1990 (Table 2.2) the marginal area has a population of 150,000 persons approximately. Divided by an average H/hold size of 8 persons, this comes to 19,000 H/holds approximately.

Hamar is the main tribe inhabiting the area. Minor ethnic groups: Kaja, Katul, Mema, Berti are to be found in the north western part.

Compared to the southern rural councils (El Odiya, Abu Zabad) the marginal area is sparsely populated with densities of 3-6 persons to the sq.km. The low densities could be attributed to the scarcity of water sources which has resulted in very localized settlement, added to that the effect of low rainfall, especially in the northern parts, turning most of the area into extensive range lands.

Village demographics could be judged from Tables 1.1 and 2.2. Household size varies from one study to the other as reflected by the data in the two tables, with various reasons given for the variation. A more close figure is

Table 2.2. : Population of the Marginal Area Rural Councils.

Rural Council	1983 Census data								Baseline study average size of H/hold	IFADS Rural Councils population estimate 1988	Population Projected from 1983 Census to 1990.
	Area (Sq.Km.)	Total Population	Total No.of H/holds	Average Size of H/hold	Number of villages	Average village size (H/hold)	Average village size (Persons)	Population Density person per sq/Km.			
El Khuwei	9563	39742	6624	6.0	186	36.0	214	4.0	7.8	68000	475000
Wad Banda	17411	61204	11128	5.5	259	43.0	236.0	3.0	8.6	79000	73100
Suqa El Gamal	6422	36719	5922	6.2	210	28.0	175.0	6.0	9.0	44000	43900
En Nahud	4796	64952	10529	6.2	263	40.0	247.0	13.0	8.1	93000	77600

Source : Techno Serve, En Nahud Co-operative Credit Marketing Study, 1990, Table 2.3.

believed to be obtainable from the individual questionnaire run by this study :

Village	Sample size	Population of sample	Average H/hold size
Mahboub	10	76	7.6
Umm Marabeik	9	77	8.6
Umm Naala	10	81	8.1
Umm Bel	10	83	8.3
El Tileih	10	74	7.4
El Genana	10	98	9.8
El Maarka	8	71	8.9
Wad Hameidan*			
Total/mean	75	626	8.3

* Visited as one of the three co-operatives financed in the marginal area, and failed to repay.

Settlements may be categorized (Table 1.1) in terms agglomeration of service facilities and to some degree population size into 3 groups: central places, intermediate places and base villages. In all three types, the population is stable during the rainy season and up to the harvest time in years of good rains. Scarcity of drinking water, its high prices and the search for employment induces the population to migrate at varient dates after harvest, to places of water supply and employment.

4. Population Movements :

4.1. Marginal Area :

Migration for various motivations emerges as one of the main characteristics of the population :

- Short distance migrations occur annually after harvest from villages scarce in water sources to places of water supply. This involves meeting human needs, and herds requirements. Places headed to would depend on H/hold financial abilities to pay

for priced supplies from water-yards or access to free water extracted manually from wells. Into that is also combined the prospects of casual employment at these water centres.

- Long distance migration for gum tapping in South Kordofan, South Blue/Nile and South Kassala Regions. The start of these migrations dates back to the 1940's. Gangs of gum tappers would move annually by October to the above mentioned areas to practise gum tapping there either by renting gum gardens or share-cropping the produce with the owners. The migrating elements would return to the villages by May.
- Migration to South Kordofan, involving many women, for the sorghum harvest in the mechanized schemes. Children are taken too to save on food and water costs during the months of migration being provided freely by the schemes' owners. Women generate cash from sorghum winnowing, and benefit too from the sorghum they obtain in kind which they take back to the villages.
- Migration to the central parts of the country for employment in irrigation schemes and urban centres.
- Emmigration to Libya which has become very familiar in the last 5 years, highly ignited by the passing of the desert route to El Kufra just off the northern En Nahud Province boundary where there exist the customs point at Hamrat El Sheikh. In fact it is normal to find Libyian-based trucks making journeys to villages within the province.

The size of the population migrating annually for employment is estimated at up to 20% of the inhabitants of most villages. The majority of the migrants would come back to the villages before the onset of the rains, utilizing their savings in supporting their crop farming activities.

4.2. Indicative of Kordofan Demographic Trends :

The above movements are not limited to the marginal area, and apply to the rest of Kordofan State, including the southern parts of the project area. The inducing factors for movement are increase in population, decline in productivity, lack of household sustenance from indigenous economies, and the "aspirations gap" as to local means not satisfying economic and social aspirations of the population, especially the young.

Kordofan population over 80 years points to the following increases :-

Year	Population	Source
1903	550,000	Lebon(1956)
1910	590,000	(Ibid)
1913	635,000	(Ibid)
1956	1,761,968	Dept. of Statistics(1958)
1973	2,098,073	" " " (1977)
1983	3,240,000	Anon(1984)

The population growth as such called for more land for cropping. As a result, land under crops had increased in Northern Kordofan alone from 1 million in 1955/66 to 5 million in 1972/73 (Ahmed 1973) without effective increase in food production. The growth of human population, accompanied by demographic changes, growth of animal population and lack of resource management have ultimately led to land misuse of varying intensity in many parts of the region. The unsustainability of means of living, the depressed incomes and the high rates of inflation have triggered population movements from the various parts of the region of the kind described previously for the marginal area.

5. Services :

Table 2.3 furnishes an inventory of the existing services for the main centres and the surveyed settlements. Central and intermediate places have a reasonable concentration of community services, some of the base villages have one or two facilities of different types, with the majority having no facilities.

6. Community Institutions :

The type of institutions existent in the villages could be categorized under traditional/community based institutions

Table 2.3:

Existing Services

(x : indicates existence of the service where the number of facilities is not used)

Settlement	Size of Population	Education					Health			Water Supply				Religious		Administrative, Security, Judicial					Marketing/Business				
		Primary School Boys	Primary Girls	Mixed school	Intermediate Boys	" Girls	Dispensary	Dressing Station/ Health Care	Public Health	Number operating wells	No. non-operating wells	Hand-dug wells	Water by trucks	Mosque	Khalwa	Veterinary dispensary Dressing Station.	Rural Council Headquarters	Police Station/Post	Court	Shartaya centre	Shops	Weekly market	Crop market / marketing	Livestock market/ marketing	Four Mill
I. Central Places:																									
El Khuwei	7300	2	1	-	1	1	1	-	1	2	4	-	-	1	2	1	1	1	1	1	x	x	x	x	2
Foga	6000	2	1	-	-	-	1	-	1	-	-	x	-	1	1	1	-	1	1	1	x	x	x	x	2
Ermil	4350	3	1	1	1	-	1	-	1	1	1	x	-	1	1	1	-	1	1	1	x	x	x	x	3
Dam Gamad	5600	1	1	-	1	-	1	-	1	1	3	-	-	1	1	1	-	1	1	1	x	x	x	x	2
Wad Banda	7000	4	1	-	1	-	1	-	1	1	5	-	-	4	6	1	1	1	1	1	x	x	x	x	4
Sug& El Gamal	3721	2	2	-	1	1	1	-	1	2	3	-	-	1	1	1	1	1	1	1	x	x	x	x	4
II. Intermediate Places:																									
Iyal Bakheit	917	1	1	-	-	-	-	1	1	-	-	-	x	1	1	-	-	1	1	1	x	x	x	x	2
Umm Marabeik	2500	-	-	1	-	-	-	1	-	1	1	-	-	1	1	-	-	1	-	-	x	x	x	x	2
Umm Bel	1640	-	-	1	-	-	1	-	1	-	-	9	-	1	2	-	-	-	1	1	x	-	-	-	-
El Genana	1410	-	-	1	-	-	-	-	-	1	-	-	-	-	3	-	-	-	-	-	x	-	-	-	1
El Maarka	1475	1	1	-	-	-	-	1	-	1	2	-	-	1	1	-	-	-	-	-	x	-	-	-	2
III. Base Villages:																									
Mahboub	1520	-	-	1	-	-	-	1	-	-	-	-	x	1	-	-	-	-	-	-	x	-	-	-	1
Umm Naala	553	-	-	-	-	-	-	1	-	-	-	-	x	1	-	-	-	-	-	-	x	-	-	-	-
El Tileih	600	-	-	1	-	-	-	1	-	-	-	x		1	2	-	-	-	-	-	x	-	-	-	1

and politically founded institutions. The former include: the village sheikh, the shartaiya (the native administration office high than the sheikh) limited to some main centres, parents-teachers councils in places with schools, mosques committees and some co-operative flour-mills committees. Politically founded institutions comprise popular committees, the Nation Youth Organization and the Women Union.

III. Agriculture :

1. Rain-fed Farming on Qoz:

1.1. Land Tenure :

Each village has its known land boundaries. The village sheikh is entrusted with the management of the village land property. It is customary that each H/hold through inheritance owns land in the village. Land which is not owned is entrusted to the village sheikh who would allocate it according to need. Land which is abandoned by users for a considerable number of years is retained as village property.

Each H/hold is owning land for the various uses : annual cultivation, fallow land, and under hashab gardens. Table 3.1 depicts the picture of land ownership for the surveyed villages. The percentages furnished by the table show that the majority of H/holds fall within the categories of 26-200, and 11-50 makhamas of owned and cultivated land respectively. Those owning large lands are the family members of the village sheikh and the heirs of early settlers in the village.

There is a category of non-land owning H/holds. This originates from immigration to places of water-yards e.g. El Genena and Maarka villages. Such H/hold obtain land from the indigenous population of these places, through paying a nominal annual rent, known locally as "ishur", 1/10th of the produce in years of harvest.

Table 3.1. : Ranges of Land Owned, Land Cultivated.

Settlement	Number H/holds present at meeting	Number not responding to question	Number not owning land	Respondents Owning (Makhamas)						Respondents Cultivating 1990 (Makhamas)					
				< 10	10-25	26-50	51-100	101-200	> 200	< 5	5-10	11-15	16-25	26-50	> 50
Mahboub	75	5	0	0	0	5	14	22	29	0	4	13	36	17	0
Umm Maraheik	95	0	0	0	22	40	21	11	1	8	8	23	15	35	6
Umm Naala	45	1	0	0	9	8	7	7	13	0	11	17	11	4	1
Umm Bel	23	2	0	0	8	5	7	0	1	1	9	5	6	0	0
El Tileih	40	2	0	0	2	10	3	17	6	0	3	7	15	12	1
El Genana	75	0	21	6	8	15	11	12	2	1	4	7	16	13	13
El Maarka	82	0	30	0	7	14	24	5	2	0	7	11	9	10	15
Total	435	10	51	6	56	97	87	74	54	10	46	83	108	91	36
Percentages				1.60	14.97	25.94	23.33	19.78	14.44	2.67	12.30	22.19	28.88	24.33	9.63

1.2. Crop Ranking:

Crops raised were ranked by area and cash generation as indicated in Table 3.2. The following points may be generated from the Table:-

- Groundnut is not grown in the area.
- Millet and watermelon rank highest in terms of area cultivated.
- The largeness of the acreage under the two crops may be attributed to:(i) being most suited in terms of soil and rainfall (ii) easiness of raising both crops (iii) as sources of food and cash, and in the case of watermelon the added benefit of water provision, and (iv) the after drought strategies of increasing the area under cereals.
- Sesame and watermelon rank highest as cash generators.
- Though karkadee ranks next to the above two, okra especially raised on wadi flood land assumes more importance as a cash generator.

2. Jubraka Farming :

Jubraka farming is practised by the majority of women throughout the area, as reflected by the data obtained from the surveyed villages (see Table 5.2).

Village	% of women owning Jubraka
Mahboub	89
Umm Maraheik	83
Umm Naala	84
Umm Bel	61
El Tileih	94
El Genana	100
Maarka	57
Average	78

Table 3.2. : Crop Ranking by Area and Cash Generation for Qoz Farming.

Settlement	By Area as number : 1 to 8								By Cash generation as number: 1 to							
	Millet	Sorghum	Water melon	Sesame	Ground-nut	Karkadee	Okra	Lubia	Millet	Sorghum	Water melon	Sesame	Ground-nut	Karkadee	Okra	Lubia
Mahboub	2	N.C.	1	3	N.C.	4	5	6			2	1		3	4	
Umm Maraheik	1	N.C.	2	3	N.C.	9	5	6			1	2		3	4	
Umm Naala	2	4	1	3	N.C.	5	6				1	2		3		
Umm Bel	1	N.C.	2	4	N.C.	5	6		1		2	3		4	5	
El Tileih	1	C	2	3	N.C.	4	5				2	1		3		
El Genana	1	C	2	3	N.C.	4	5				1	2		3	4	
El Maarka	1	C	2	3	N.C.	4			3		4	1			2	

Remarks : N.C. : not cultivated.
C. : Casually

Valuation :
Scores accorded to ranking : 1:12, 2:10, 3:8, 4:6, 5:4, 6:2

Crop	Area	Cash generation
Millet	80	20
Sorghum	6	0
Water melon	74	60
Sesame	54	64
Groundnut	N.C.	0
Karkadee	38	30
Okra	20	34
Lubia	4	0

Two types of Jubrakas are practised, a fenced area in the fields, and cultivating the house-yard. The latter is extensively practised in the northern parts of the area. Jubraka size is in the range of 0.5 makhamas, decreasing in acreage under wadi recession cultivation. The main crops raised are: Najad, Tibish, Okra, Watermelon, Kerkadee and Sesame.

3. Irrigated Agriculture :

Two types of irrigated agriculture are practised in the north western part of the area on the flood water annually carried by wadis: field crops on flush irrigation, and horticultural crops, predominantly vegetables on flush and well irrigation. There has been a growing emphasis on irrigated agriculture as of 1984. The activity is presently practised at about 8 sites: El Hawar, Foga, Umm Bel, Ideid El Farish, Iyal Irebi, El Timeid, El Tileih, Ermil and El Kabra.

3.1. Field Crops on Flush Irrigation :

This type is practised on the flood plains of wadis, known locally as 'lugud' cultivation, referring to loamy and clay soils. Umm Bel and El Teleih were sites visited

and investigated. The area utilized at Umm Bel occupied the flood plain of Wadi Kadome. About $\frac{2}{3}$rds of the H/holds in the village owned plots there, with the majority cultivating $\frac{1}{2}$ to $\frac{3}{4}$rth of a makhamas and with most of the women jubrakas located there. All farms were fenced. The crops raised were sorghum, sesame, okra, water melon, tibish, karkadee and lubia. Okra ranked high in terms of cash generation. The return from the crop is commendable by women i.e. can hold it from the head of the H/hold as a personal earning.

The investigation of El Tileih site yielded similar information. About 300 H/holds from El Tileih and 2 more villages were cultivating at a nearby wadi. Average plot size was in the range of $\frac{1}{2}$ a makhamas.

3.2. Horticultural Gardens :

The activity was introduced in the area at different dates starting at Foga in 1954. Gardens take the form of fenced plots on the edges of depressions filled annually by wadis. The size of plots owned were in the range of less than 1/10th to 1 makhamas, with the majority in the order of 500 sq.m. The magnitude of the activity is revealed by the following figures of garden ownership for 6 places visited :

Place	Number of gardens
El Howar	5
Foga	400
Awlad Ireibi	1
El Timeid	100
El Tileih	60
Ermil	60
	626

A wide range of crops are grown: tomato, okra, cucumber, tibish, watermelon, onion, pumpkins, squash, egg plant, jew mellow, beet, pepper, potatoes, etc..., variant in occurence from one site to the other. Some of the old established gardens have some orchards: lemon, guava and mango.

Gardens are irrigated by different means. At all sites crops are planted on recession land at the start and irrigated thereafter from surface water still standing at depressions using small canals, ditches dug at beds of depressions, and from wells. Crop planting usually starts in November. Dependency on surface water continues up to January, and by February begins water extraction from wells, with the irrigation of some of the crops continued up to April. Water extraction is mostly done by the rope and bucket. The extent wells are used and their characteristics could be judged from the following data:

Site	Number of wells	Depths	Number of wells with pumps
Iyal Irebi	1	33	1
El Timeid	100 *	3-36	1
El Tileih	60 *	22-30	0
Ermil	30	12-18	0

* mostly ditches

The crops raised are marketed locally, especially on market days, at Foga and Ermil, as well as marketed by vendors at distant places: Wad Banda, Suqa El Gamal, El Zarnakh (En Nahud Province), Sodiri, Hamrat Esh Sheikh and Umm Badir (Sodiri Province).

4. Gum Tapping :

The hashab cover decreases from south to north. The shrinkage in its areas has been felt since mid 1970's with variant intensities from one part of the area to the other. Reasons which may be cited are:-

- desiccation of the tree in some parts.
- Expansion of cultivations.
- Neglegence by farmer for some time due to depressed gum prices.
- The drought of 1983-85.
- Some unexplained physiological reasons.

Hashab gardens still constitute, in some of the southern parts, sizeable areas of the H/hold land (Mahboub, Umm Maraheik and El Maarka) as revealed by Table 3.3. As one goes north of the latitude of Umm Maraheik gum production is almost non-existent.

Table 3.3. : Gum Production.

	Number present at meeting	Hashab gardens Ownership Ranges (Makhamas)				Number of Respondents owning	Production of one Kintar and plus	
		< 5	15-10	11-20	> 20		Number producing.	Year Level of production attained
Mahboub	75	0	10	32	32	74	27	1991
Umm Maraheik	95	0	0	1	3	4	0	1968
Umm Naala	45	0	0	7	38	45	0	1987
Umm Bel	23	0	0	0	0	0	0	1970
El Tileib	40	0	0	0	0	0	0	Never Practised
El Genana	75	0	0	0	0	0	0	1970
El Maarka	82	8	8	9	15	40	0	1970
Totals	435	8	18	49	88	163	27	

Frequencies :

% owning	: 37.47
% > 5 (of those owning)	: 4.90
% 5 -10	: 11.05
% 11-20	: 30.06
% > 20 (largest ownership 300 Makhamas)	: 53.91
	100.00

5. Inputs :

5.1. Seeds:

Usually seeds for the planting of rainfed and irrigated crops are reserved from the previous year harvest, in years of successful cropping. In years of bad harvest seeds are purchased from the market, or obtained from a fellow-farmer in the village. Seeds of groundnut, not being cultivated by the majority of farmers since 1984, are scarcely found. The seeds for all crops are of local varieties. Except for some seed treatment by insecticides no other advanced inputs are applied.

5.2. Labour:

Table 3.4 exhibits the modes of farm labour in use in rain-fed Qoz farming. The table shows a high dependancy on H/hold labour, 73%. It also points out to a large percentage 50% of the farming population selling their labour annually to generate cash. Reasons behind selling labour are multi-facet: bad harvest, not producing enough, no cash to meet needs, no livestock to sell and no seeds to plant.

The 'lugud' farmers on wadis, though tend to be better off, show the same modes of labour utilization. As for the vegetable farmers, they are of two categories, those taking farming as their only occupation and those combining farming with other enterprises, mostly to be found in the major centres, Ermil and Foga. In the first

Table 3.4.: Modes of Farm Labour, Qoz Farming.

Settlement	Number present at meeting	Number not Responding to Question.	Modes of Labour: Number using H/hold labour	Number using H/hold labour plus hired labour	Number using only hired labour.	Number using Nafir	Number selling their labour.
Mahboub	75	6	53	6	0	0	41
Umm Maraheik	95	23	53	19	0	22	39
Umm Naala	45	0	42	3	0	0	28
Umm Bel	23	1	22	3	0	10	7
El Tileih	40	0	25	15	0	13	16
El Genana	75	19	39	16	1	21	27
El Maarka	82	23	31	23	5	0	21
Totals	435	72	265	85	6	98	179

Frequencies :

- Number of responding	:	363
% using only H/hold labour	:	73.00
% using H/hold labour plus hired labour	:	23.41
% using only hired labour	:	1.65
% using Nafir	:	27.00
% selling their labour	:	49.31
- Of all modes of labour, total	:	633 (answers)
% only H/hold labour	:	41.85
% H/hold labour plus hired labour	:	13.43
% only hired labour	:	0.95
% Nafir	:	15.47
% Selling their labour	:	28.30
		100.00

case labour is provided by the H/hold members, with a substantial female participation. In the second one, garden owners resort more to hired labour.

6. Livestock Raising :

This is a country of mixed farming, where livestock once assumed a very important role in the economy of the H/hold, with exchanges between crop farming and livestock raising. This role was more exemplified in the northern parts of the area. The 1984 drought had drastically diminished H/hold livestock ownership, brought changes on the types of animals owned and on the herd structure. Table 3.5 detects losses resulting from 1984 drought. Goats, donkeys and sheep registered the highest losses, being the kinds mostly raised by the population, as cattle tended to be, and still is, very much localized in the north western part of the area.

Table 3.6 ranks the existing types of livestock by size. The ranking yielded that goats and sheep follow closely, succeeded by donkeys and cattle. Camels are individually found in some of the villages, while horses are associated with the carts being mostly operated at central places.

Present H/hold livestock ownership is exhibited in Table 3.7. Goats are the highest owned followed by donkeys. Sheep rank third, though in terms of number, they come second to goats, as revealed by Table 3.6. This

Table 3.5. : Livestock Losses during 1984 Drought

Settlement	Number Present at meeting	Number who lost					
		Goats	Sheep	Camels	Cattle	Donkeys	Horses
Mahboub	75	48	33	17	0	26	0
Umm Maraheik	95	61	19	12	20	56	0
Umm Naala	45	28	23	11	0	22	0
Umm Bel	23	18	1	2	14	12	0
El Tileih	40	40	11	1	22	16	2
El Genana	75	51	9	8	22	27	0
El Maarka	82	41	13	0	8	17	3
Total	435	287	109	51	86	176	5

Frequency of Losses :

Of total respondents (435)	%
Goats	65.98
Sheep	25.06
Cattle	19.77
Donkeys	40.46
Horses	1.15

Of total losses (714)	%
Goats	40.21
Sheep	15.27
Camels	7.14
Cattle	12.04
Donkeys	24.66
Horses	0.70
	100.00

Table 3.6. : Livestock Ramking by Size.

Settlement	By Size as Number 1 to 6					
	Goats	Sheep	Camels	Cattle	Donkeys	Horses
Mahboub	2	1	4	N. E.	3	N. E.
Umm Maraheik	2	1	5	3	4	F.
Umm Naala	2	1	4	N. E.	3	N. E.
Umm Bel	1	N. E.	N. E.	N. E.	2	N. E.
El Tileih	1	2	F.	4	3	F.
El Genana	2	1	F.	4	3	F.
El Maarka	2	1	4	5	3	F.

Remarks : N. E. : Non-existent
F. : Few

Valuation :

Scores accorded to ranking : 1=12, 2=10, 3=8,
4=6 , 5=4 , 6=2.

Ranking according to scores: Goats : 74
Sheep : 70
Donkeys : 40
Cattle : 24
Camels : 22
Horses : F/N. E.

Table 3.7 : Household Livestock Ownership

Settlement	Number Present at meeting	Ownership Ranges															
		Goats			Sheep			Donkeys			Cattle			Camels		
		< 5	5-10	> 10	< 5	5-10	> 10	< 5	5-10	> 10	< 5	5-10	> 10	< 5	5-10	> 10
Mahbcub	75	28	7	0	1	5	3	21	0	0	0	0	0	16	0	0
Umm Maraheik	95	18	23	8	*	*	*	28	0	0	*	*	*	3	0	0
Umm Naala	45	17	10	8	4	1	6	22	0	0	0	0	0	9	0	2
Umm Sel	23	12	5	0	0	0	0	16	0	0	0	0	0	0	0	0
El Tileih	40	14	9	15	7	3	7	38	0	0	10	0	0	9	0	0
El Genana	75	25	15	1	1*	4*	7*	39	0	0	0*	0*	0*	1*	0	0
El Masrka	82	13	7	3	3*	0*	4*	31	0	0	3*	0*	0*	7	0	0
Totals	435	127	76	35	16	13	27	195	0	0	13	0	0	45	0	2
Percentages		53.36	31.93	14.71	29.57	23.21	45.21	100.00	0.00	0.00	100.00	0.00	0.00	100.0	0.00	0.

Remarks : * Survey was conducted at time government raised animal taxes, with collection of both the tax and Zhakat going on, hence at least in three villages, people were reluctant to give correct information. With this discrepancy taken into consideration the following results may be concluded from the table :-

Ownership by Type of Animal :

	Number owning	% Respondents
Goats	238	54.71
Sheep	56	12.87
Donkeys	195	44.83
Cattle	13	2.99
Camels	45	10.34

Of all modes of ownership

	%
Goats	43.51
Sheep	10.24
Donkeys	35.65
Cattle	2.37
Camels	8.23
	100.00

is explained by the fact that sheep ownership is not difused in the community, but restricted to a few owners. Regarding sizes of ownership, the majority of respondents fall under the range of owning less than 5 goats, and 1 donkey.

7. Assessment of Crop Performance/Livestock Raising :

7.1. Rain-fed Farming on Qoz :

An assessment of crop performance during the 4 years 1992-1989 was attempted. The assessment was based on testing three parameters : adequacy in meeting H/hold sustenance, generating marketable amounts to contribute to H/hold expenditure, and crop availing seeds for planting next season. The results obtained were summarized in Table 3.8. It clearly emerges that out of the 4 years investigated, the area experienced crop failure for almost all crops except water melon, with sporadic successes of millet, the main crop, in a few villages in some of the years. The rated values at the bottom of the table are indicative of the prospects of the various crops.

Reasons for harvest failure as mentioned by respondents were : inadequate rains, damage by pests and diseases, and lack of seeds for planting. The pests mentioned are :

- Millet : Rhgwa spp (El Nafasha)
  Striga hermonthica (Buda)
- Water melon: Aspongopus viduatis (melon bug)
  Analacophara africana (El Himeira)

Table 3.8: Crop Performance Qoz Farming 1992-1989.

Rating :
- Met H/hold Sustenance : Yes:+, No:-
- Achieved Marketable amount: Yes:+, No:-
- Availed seeds for planting: Yes:+, No:-
- Not cultivated: N.

Year	Settlement	Crops					
		Millet	Sorghum	G/Nut	Sesame	Water melon	Karkadee
1992	Mahboub	-	N	N	+	-	+
	Umm Maraheik	-	N	N	-	-	N
	Umm Naala	+	-	N	+	-	+
	Umm Bel	-	-	N	-	-	N
	El Tileih	-	N	N	-	+	+
	El Genana	-	N	N	-	-	-
	El Maarka	-	N	N	-	-	+
1991	Mahboub	-	N	N	-	+	-
	Umm Maraheik	-	N	N	-	+	N
	Umm Naala	-	-	N	-	+	-
	Umm Bel	-	-	N	-	-	N
	El Tileih	-	N	N	-	+	-
	El Genana	-	N	N	-	-	-
	El Maarka	-	N	N	-	+	-
1990	Mahboub	-	N	N	-	-	-
	Umm Maraheik	-	N	N	-	-	N
	Umm Naala	-	-	N	-	-	-
	Umm Bel	-	-	N	-	-	N
	El Tileih	-	N	N	-	+	-
	El Genana	+	N	+	+	+	-
	El Maarka	-	N	N	-	+	-
1989	Mahboub	-	-	-	-	+	-
	Umm Maraheik	-	N	N	+	+	N
	Umm Naala	+	-	N	-	+	-
	Umm Bel	-	-	N	-	-	N
	El Tileih	+	N	N	+	+	-
	El Genana	-	-	-	-	+	-
	El Maarka	-	N	N	-	+	-

Frequencies :

Totals :

Crop:	N	+	-
Millet	0	4	24
Sorghum	18	-	10
Groundnut	27	-	1
Sesame	0	5	23
Watermelon	0	15	13
Karkadee	8	4	16

Percentages

N	+	-
0.00	14.30	85.70
64.30	0.00	35.70
96.40	0.00	3.60
0.00	17.90	82.10
0.00	53.60	46.40
28.60	14.30	57.10

Sesame : Elasnotomus sordidus (El Raoma)
Belliositernes bellicosus (Termites- El arda)
Millepdes spp. (El Surfa)

Hashab tree (Gum): Anacridium melamorbodon (tree-locust sari El Leil)

Pests common to all crops: Anacidrium melemorbon, Gerbillus sp. (El Far)

Table 3.9 monitors the occurence of rain failure, crop pests and lack of seeds for the 4 investigated years.

7.2. Flush Irrigation :

The acreage cultivated is small in the order of ½ a makhamas. Two crops sorghum and okra seem to be prosperous as reflected by the following production and cash return figures furnished by a farmer at El Tileih:

- 3 sacks of sorghum:	3 x 1200	Ls 3,600
- 3 sacks of okra	:6 x 850	5,250
		8,850

- Costs involved included the value of seeds and the farmers' labour.

Respondents at El Tileih and Umm Bel villages indicated that 'lugud' farming showed a high degree of success since 1984. Rating the performance of the last 5 years yielded the following results:

Table 3.9: Factors Behind Low Harvest, Goz Farming, 1992-1989

Rating : - Adequate rainfall) - No adequate rainfall)
- No pest damage): + - Damage by pests): -
- Adequate seeds) - No adequate seeds)

Year	Settlement	Crops: Millet: Rainfall	Millet: Pests	Millet: Seeds	Water melon: Rainfall	Water melon: Pests	Water melon: Seeds	Sesame: Rainfall	Sesame: Pests	Sesame: Seeds
1992	Mahboub	+	-	-	+	-	-	+	-	-
	Umm Maraheik	+	-	+	+	-	+	+	-	+
	Umm Naala	+	-	-	+	-	+	+	-	-
	Umm Bel	+	-	-	+	-	-	+	-	-
	El Tileih	+	-	+	+	-	+	+	-	+
	El Genana	+	-	+	+	-	+	+	-	+
	El Maarka	+	-	-	+	-	-	+	-	-
1991	Mahboub	-	+	-	-	+	-	-	+	-
	Umm Maraheik	-	+	+	-	+	+	-	+	+
	Umm Naala	-	+	-	+	+	-	-	+	-
	Umm Bel	-	+	-	-	+	-	-	+	-
	El Tileih	-	+	+	+	+	+	-	+	+
	El Genana	-	+	-	-	+	-	-	+	-
	El Maarka	-	+	-	-	+	-	-	+	-
1990	Mahboub	-	+	-	-	+	-	-	+	-
	Umm Maraheik	-	+	-	-	+	-	-	+	-
	Umm Naala	-	+	-	-	+	-	-	+	-
	Umm Bel	-	+	-	-	+	-	-	+	-
	El Tileih	-	+	-	-	+	-	-	+	-
	El Genana	+	-	+	+	-	+	+	-	+
	El Maarka	-	+	-	-	+	-	-	+	-
1989	Mahboub	-	+	-	+	+	+	+	-	-
	Umm Maraheik	+	-	+	+	-	+	+	-	+
	Umm Naala	-	+	-	+	+	+	-	-	-
	Umm Bel	-	-	-	-	-	-	-	-	-
	El Tileih	+	-	+	+	+	+	+	+	+
	El Genana	-	+	-	-	+	-	-	+	-
	El Maarka	-	+	-	-	+	-	-	+	-

Frequencies:

	Millet: Rainfall +	Millet: Rainfall -	Millet: Pests +	Millet: Pests -	Millet: Seeds +	Millet: Seeds -	Water melon: Rainfall +	Water melon: Rainfall -	Water melon: Pests +	Water melon: Pests -	Water melon: Seeds +	Water melon: Seeds -	Sesame: Rainfall +	Sesame: Rainfall -	Sesame: Pests +	Sesame: Pests -	Sesame: Seeds +	Sesame: Seeds -
Totals	10	18	17	11	8	20	14	14	18	10	11	17	11	17	16	12	8	20
Percentages	35.71	64.29	60.71	39.29	28.57	71.43	50.00	50.00	64.29	35.71	39.29	60.71	39.29	60.71	57.14	42.86	28.57	71.43

	Totals +	Totals -	Percentages +	Percentages -
Rainfall	35	49	41.67	58.33
Pests	51	33	60.71	39.29
Seeds	27	57	32.61	67.39

R a t i n g

Year	El Tileih	Umm Bel
1992	good	good
1991	good	good
1990	average	average
1989	good	average
1988	good	good

7.3. Horticultural Gardens :

The case of a garden developed by a local merchant at Iyal Irebi demonstrates the potential of this kind of farming. The area of the garden was 13 feddan, with a well installed with a 2" pump. Pumping capacity was 1500 gallons/hour for 18-24 hours.

The owner was highly interested in horticultural farming, however lacked the technical know-how and suffered from the shortage of skilled labour in irrigated agriculture. Despite these shortcomings his performance during last year (1991)showed a high profit margin as revealed by the following calculations:

Area cultivated : 2 feddans

Cash generated :

- Okra production 6 Kintars(dry) 6 x 5000	Ls. 30000
- Tomatoes 3 Kintars(dry-salsa) 3 x 4000	12000
- Tomato (sold fresh)	4000
- Sweet sorghum canes	7000
- Onion 12 sacks 12 x 800	9600
- Pepper 1 Kintar	2000
- Potatoes 3 sacks 3 x 600	1800
- Sold water	3000
Total	Ls. 69400

- Plus minor products unpriced.

Costs :

- 2 barrels of diesel	2 x 4000	Ls	8,000
- 8 gallons of engine oil	8 x 500		4,000
- Seeds			1,000
- Labour			3,000
			16,000
Profit: 69,400 - 16,000			53,400

In comparison to the above, the average farmer cultivating a small plot, using the rope and bucket makes a substantial profit too. A case of a farmer at El Tileih is illustrative:

Area cultivated: 500 sq.m.

Cash generated :

- 20 boxes of fresh tomatoes	20 x 100	Ls 2,000
- 4 sacks of dry tomato (salsa)	4 x 50 x 15	3,000
Total		5,000

Costs

No costs incurred, seeds from last year harvest plus farmer's labour.

7.4. Gum Production :

An assessment of gum production is given in Table 3.3, which ascertains that only depressed quantities of gum in the order of pounds weights reached the village shops in some of the settlements surveyed. Low production is attributed to a set of factors:

- Lack of sustenance means (food and water) after a bad harvest to keep people in the villages to work their gardens.

- Physical/biological factors: insufficient rain, tree damage by locust, and camel browsing, especially by the herds of the passing pastoralists.

7.5. Livestock :

Table 3.10 furnishes data on livestock sales and purchases during the last 3 years. It is apparent that goats ranked high in the sales and purchases. Selling takes place in small numbers for casual cash generation. Those buying are mainly for breeding purposes. There are also high purchases of donkeys, possibly to compensate for the losses of 1983-85 drought. However, it is evident that livestock contribution to the H/hold economy is diminished in terms of products availed and cash generation, judged on the percentage of those owning animals, change in herd structure, the small number of H/holds selling animals, and the sizes sold.

IV. Water Supply :

1. Main Features of Supply :

The area is generally scarce in water sources, especially its eastern and northern parts, and the part west of En Nahud as one goes towards Wad Banda. For a long time these locaties formed part of the 'problem area' in Kordofan State, in terms of water provision since they lie on the poor ground-water Basement complex formation. Dependency on rain water stored in the tebeldi (boabab) tree, cultivation of watermelon for using its water and

Table 3.10: Numbers who sold/bought livestock during last 3 Years - 1991-1989.

Settlement	Number present at meeting	Livestock											
		Goats Sold:	Goats Bought	Sheep Sold:	Sheep Bought	Camels Sold:	Camels Bought	Cattle Sold:	Cattle Bought	Donkeys Sold:	Donkeys Bought	Horses Sold.:	Horses B.
Mahboub	75	22	13	6	5	0	0	0	1	0	12	0	0
Umm Maraheik	95	46	17	12	8	0	0	7	4	0	16	0	0
Umm Naala	45	30	2	0	0	0	0	0	0	0	3	0	0
Umm Bel	23	21	0	0	0	0	0	0	0	0	0	0	0
El Tileih	40	25	10	16	4	0	0	0	0	0	5	0	0
El Genana	75	43	4	23	7	0	0	0	0	0	7	0	0
El Maarka	82	32	0	15	1	0	0	0	0	0	0	0	0
Total	435	219	46	72	25	0	0	7	5	0	43	0	0

Frequency Selling/buying

Of Total Sample (435)

	Selling %	Buying
Goats	50.34	10.57
Sheep	16.55	5.74
Camels	0.00	0.00
Cattle	1.61	0.92
Donkeys	0.00	9.89
Horse	0.00	0.00

of Total Selling(298) buying (118)

	Selling %	Buying
Goats	73.49	38.98
Sheep	24.16	21.19
Camels	0.00	0.00
Cattle	2.35	3.39
Donkeys	0.00	36.44
Horses	0.00	0.00
	100.00	100.00

in recent years the purchasing of trucked water are of the established features of the water supply situation in the greater part of the area. An exception to the above is the north western part, (Zone II) where the annual running of wadis recharges localized aquifers where hand-dug wells provide amble supplies.

2. Types of Supply :

Settlements may be divided based on the access to water into 3 types:

i. Villages with sources of supply: water-yards, (El Khuwei, Umm Maraheik, Dam Gamad, Wad Banda, Suqa El Gamel, El Genana and El Maarka) and with hand-dug wells (Foga, Umm Bel, El Tileih and Ermil).

ii. Villages at closer distances to sources of supply where water is fetched by H/hold members or hauled by beasts.

iii. Villages at far distances from sources of supply where water is transported by trucks (Mahboub, Iyal Bakheit and Umm Naala).

Water prices follow the above categorization, grading up from the first type to the third one: Ls 2 per tin* at the water-yard gate to Ls 40 per tin at the distant villages at the peak of the hot months. Apart from the inadequacies in the amounts used for basic needs, the high prices of water across the area drain the H/hold income. A mathematical calculation of the average H/hold expenditure on water is in the order of Ls 16,000 based on the following assumptions:-

---

* 1 tin is 4 American gallons, equivalent 18 Litres.

- Average daily consumption per household (8 persons) : 3 tins
- Monthly dependency on trucked water, 9 months (November - July)
- Average price of a tin of water for whole period is Ls 20
- Expenditure on water :

  9 x 3 x 30 x 20 16,000

This figure is indicative, actual expenditure is on the low side of it, being varied by dependencies on other sources like water stored in tebeldis, and or obtained from a good watermelon crop, also by migration to water-yards by those not affording the price of water at the villages.

3. H/hold Strategies :

H/hold water consumption for places distant from water sources is conditioned by the ability of the head of the H/hold to pay the cost of water. His ability is determined by the economic means available to him. The latter seem to work as follows:

Source of Dependency	Months
	Oct: Nov: Dec.: Jan: Feb: Mar: Apr: May: June: July:
i. water melon (in years of good harvest)	
ii. Cash generated from crop harvest, and/or	
iii. Cash generated from livestock.	
iv. Cash generated from gum .	

The above illustration reveals clearly the inter-relations of production systems, between crop farming, livestock raising, gum tapping and people's access to water:

- A reliable water melon crop reduces dependency on purchased water, lessens the amounts purchased and decreases water prices.
- A reasonable crop harvest and/or sales of livestock enable purchasing water, complement dependency on watermelon, and in the case of the failure of the latter become the main source of expending on water.
- Cash generated from crops and/or livestock sales sustains the H/hold up to November or March[1/], by then gum enters as a financer of water purchases.

The above picture presents an ideal situation of a balanced cycle of production. A break in this cycle, which has become a feature of the production systems of the area in recent years, leads not only in strigencies in water provision but most importantly to the disruption of production and the instability of the population, as:

i. Failure of the watermelon crop induces villagers to hasten their harvest.

ii. Low return from the harvest of other crops diminishes villagers resilience to attend to gum tapping.

1/ Depending on the time the tree is prepared (tapped) for production, in October or January/February, being conditioned by the occurence of cold spells.

iii. On the degree of severity of the above adversities, people would be induced to migrate from their villages to centres of water supply, resulting in population instability.

iv. Migrant H/hold would return to villages only at the on-set of the rains, losing the earlier part of the farming season.

Fig.2 1/ breaks the marginal area into water supply migration envelopes showing the orientation of villages during the dry season. The intensity of whole village population migrating decreases with the proximity to water sources, while is maintained for the livestock population, especially for those H/holds owning large numbers.

V. Enterprises :

1. Inventory:

Table 5.1 furnishes on inventory of the existing enterprices outside crop farming and livestock raising for the places visited. This table is supplemented by Table 5.2 which inventors the enterprises practised by women for the 7 villages surveyed.

1/ A map of the marginal ares prepared to the scale of 1:250,000, and delivered to ENCCP for office use. The map is an enlargement of figure 1 referred to at the beginning of the report, and including other data; villages of the area, existing water sources, water envelopes served by some of the existing sources, etc..

Table 5.1: Inventory of Existing Enterprises
(x: indicates existence of enterprise where number is not given)

Enterprises	Times activity is present.	Central Places						Intermediate Place					Base Villages		
		El Khuwei	Foga	Ermil	Dam Gamad	Wad Banda	Sug El-Gamal	Iyal Bakheit	Umm Maraheik	Umm Bel	El Genana	El Maarka	Mahboub	Umm Naala	El Tileih
I. Natural Resource Based :															
1. Fuel wood selling	10	x	x	x	x	x	x	x	x	0	x	0	x	0	0
2. Charcoal selling	12	x	x	x	x	x	x	x	x	0	x	x	x	0	x
3. Hay selling	4	0	x	0	0	0	0	0	x	x	x	0	0	0	0
4. Building material selling	12	x	x	x	x	x	x	x	x	x	x	5	8	0	0
5. Herbs, Plants, wild fruits selling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
II. Livestock Products:															
6. Meat selling	12	x	x	x	4	x	x	x	6	0	7	5	2	0	3
7. Milk selling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. Clarified butter "Semen" selling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9. Chicken raising	12	x	x	x	x	x	x	x	x	0	x	x	x	x	0
III. Trade in water:															
10. Communal "hods"	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Commercial "hods"	4	0	0	0	0	0	0	8	5	0	0	0	x	x	0
12. By lorries	5	x	0	0	0	x	x	x	x	0	0	0	0	0	0
13. Vendor/donkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14. Vendor/cart	10	x	x	x	x	x	x	x	x	0	5	5	0	0	0
IV. Trade:															
15. Shop owning	14	x	x	x	x	x	75	x	x	3	10	11	2	3	7
16. Trade in crops	11	x	x	x	x	x	x	x	x	0	8	11	3	0	0

Cont../...

Table 5.1(Cont..)

Enterprises	Times activity is present	Central Places: El Khuwei	Foga	Ermil	Dam Gamad	Wad Barda	Sug El-Gamal	Intermediate Places: Iyal Bakheit	Umm Marahelik	Umm Bel	El Genana	El Maarka	Base Village: Mahboub	Umm Naala	El Tileih
17.Trade in livestock	12	30	x	x	x	x	x	60	x	0	2	1	12	2	0
18.Trade in vegetables	9	x	x	x	x	x	x	x	x	0	0	0	x	0	0
19.Petty Trade(males)	9	x	x	x	x	x	x	x	x	0	0	x	0	0	0
20.Petty Trade(females)	10	60	x	60	x	50	20	80	x	0	0	x	0	0	x
21.Trade in veterinary drugs	9	x	x	x	x	x	x	x	x	0	0	0	0		x
V.Transport:															
22.Lorries	9	x	x	x	x	x	x	x	x	0	x	0	0	0	0
23.Horse/donkey carts	10	15	x	3	6	40	5	3	x	0	5	6	0	0	3
24.Camel/donkey hire	12	x	x	x	0	x	x	x	x	1	0	2	6	2	9
VI.Food/Tea making:															
25.Restaurents/coffee places(males)	7	60	x	25	2	10	0	5	x	0	3	0	0	0	0
26.Restaurents/coffee places(females)	11	25	x	10	18	15	30	45	4	0	6	2	2	0	6
27.Bakeries	8	x	x	x	x	x	x	x	x	0	0	0	0	0	0
28.Bread baking(females)	11	x	x	x	x	x	x	x	x	0	x	x	0	0	x
VII.Traditional/other Industries:															
29.Oil Presses	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0
30.Four Mills	12	2	2	3	2	4	4	2	2	0	1	2	1	0	1
31.Tanning	4	0	0	0	0	0	0	0	0	x	x	x	x	0	0
32.Leather works	4	x	x	x	0	0	0	0	x	0	0	0	0	0	0
33.Shoe/markoub making	10	15	x	7	3	6	8	5	x	1	2	1	0	0	3
34.Rugs/wool products	14	x	x	x	x	x	x	x	x	x	x	x	x	x	x
35.Mats/Palm leave products	14	x	x	x	x	x	x	x	x	x	x	x	x	x	x
36.Cloth works	10	x	x	x	x	x	x	0	0	x	x	x	0	0	x
37.Wood crafts	14	x	x	x	x	4	5	x	x	2	3	3	4	1	1
38.Pottery	4	0	x	0	0	0	x	0	0	1	0	1	0	0	0
39.Fired bricks	3	x	0	x	0	0	0	0	0	0	0	0	0	0	x
VIII. Artisan Activities:															
40.Hod/well builders	6	x	x	7	0	0	0	3	x	1	0	0	0	0	0
41.Blacksmith	14	3	x	3	2	3	8	3	x	1	2	1	1	1	1
42.Tin Smiths	12	x	x	x	x	x	x	x	x	0	0	1	0	0	0
43.Iron works	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
44.Tailors	13	20	x	25	4	20	40	40	x	2	2	4	2	0	5
45.Carpenters	9	x	x	x	0	3	x	x	x	0	1	0	1	0	0

Table 5.2. 1

Women Activities / Enterprises for Surveyed Settlements

Settlement	Number of Women Present at meeting.	Owning Jubrakas		Having Live-stock at home		In Trade		Owning coff-ee shop Restaurant		Bakes bread and sells		With skills in wool works		With skills in palm leaves works		With skills in cloth works		With skills in pottery		with skills in Tanning		Owning chickens	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Mahboub	70	62	89.00	30	43.00	0	0.00	0	0.00	0	0.00	8	11.00	38	54.00	0	0.00	0	0.00	29	41.00	5	7.00
Umm Maraheik	23	19	83.00	4	17.00	4	17.00	5	22.00	2	9.00	3	13.00	7	30.00	0	0.00	0	0.00	0	0.00	3	13.00
Umm Nasla	37	31	84.00	30	81.00	0	0.00	0	0.00	0	0.00	35	95.00	26	70.00	0	0.00	0	0.00	0	0.00	3	10.00
Umm Bel	37	14	61.00	7	19.00	0	0.00	0	0.00	0	0.00	3	8.00	17	74.00	9	39.00	1	4.34	10	43.00	0	0.00
El Tileib	53	50	94.00	38	72.00	4	8.00	0	0.00	5	9.00	7	13.00	46	87.00	11	21.00	0	0.00	0	0.00	0	0.00
El Genana	33	33	100.00	15	46.00	0	0.00	7	21.00	8	24.00	12	36.00	33	100.00	3	9.00	0	0.00	12	36.00	7	21.00
El Maarka	54	31	57.00	12	24.00	5	9.00	3	6.00	1	2.00	44	81.00	45	83.00	12	22.00	0	0.00	5	9.00	25	46.00
Totals/Percentages	307	240	78.00	136	44.00	13	4.23	15	5.00	16	5.00	112	36.00	212	69.00	35	11.40	1	0.30	56	18.00	40	13.00

The following remarks could be driven from the two tables:

i. The range and size of enterprises increases with the size of the place, being central, rendering services to its surroundings or a normal village.

ii. Practitioners of all enterprises cultivate annually, with the majority considering farming as their main occupation.

iii. Some of the enterprises, especially those based on livestock products, (rug-making) have not been regularly practised since 1984, however the experience is there.

iv. A good number of the enterprises are seasonally or intervally pursued (charcoal selling, hay selling, oil pressing, brick-making, etc..)

v. Outside merchant activities and lorry ownership, and for the majority of the enterprises, the fixed capital, the other production means and the running capital are small.

vi. Some enterprises like horse/donkey carts, tailors' sewing machines, oil presses, flour-mills, fired bricks klins, iron workshops etc, are owned by others, employing worker(s).

vii. In some enterprises the capital is borrowed and the profit is shared (trade in crops, trade in livestock, etc..)

viii. Blacksmiths, carpenters, etc, work in twos, an artisan and an assistant.

ix. For all enterprises consuming materials (blacksmiths, carpenters, restaurants/coffee shops, bread-baking, leather works, etc)acquiring

bulk-supplies would raise the profit margin. For some, purchasing materials from centres outside the area, like blacksmiths buying iron from Elobeid or even Omdurman, would further maximizes the profits raised.

x. Flour-mills are essential in some places to free women, from grinding grains using stones, for their engagement in enterprises and the other household activities.

xi. Women's role in income generating activities requires appreciation and support by the local councils authorities, essential for the licensing of activities and their allocation special quarters at market places.

2. Enterprises Performance :

The data yielded by the 75 individual questionnaires run at the 8 villages surveyed shall be used to assess the economic performance of 21 enterprises investigated, Table 5.3. A total of 68 respondents practising these enterprises were interviewed. Based on Table 5.2 the following results may be highlighted:-

a. Capital

The capital employed reveals these ranges:

i. Highest capital is associated with lorry ownership, shop ownership, trade in crops, trade in livestock, trade in water(commercial hods) and trade in veterinary drugs. In the majority of cases, these activities overlap, being mostly run by the same persons, the traders in the villages.

Table 5.3. : Enterprises : Capital, Season of Activity, Source of Material, Profit generated/season.

Enterprises	No. of Resp. interviewed	Average size of capital Ls.	Season of Activity.	Source of material	Profit Generated Ls. Total	Profit Generated Ls. Per Respondent
1.Trade in Water (Hod)	4	49,750	Nov.-July	El Obeid	51,750	12,938
2.Petty trade	5	21,000	Nov.-July	Local	25,600	5,120
3.Tailor	5	20,000	Oct.-Aug.	En-Nuhud, Hamrat El Sheikh	29,200	5,840
4.Wood-craft	3	350	Oct.-June	Local	1,633	544
5.Tinsmith	2	1,650	Nov.-June	El Obeid	9,250	4,625
6.Blacksmith	2	9,750	May-Aug.	El Obeid	11,500	5,750
7.Shoe-making	1	2,000	June-July	Local	3,000	2,000
8.Tea making	2	1,620	Oct.-May	Local	21,900	10,950
9.Lorry owner	1	1,500,000	Nov.-June	Imported	500,000	500,000
10.Oil Presser	1	38,000	Nov.-April	Local	50,000	50,000
11.Horse cart owner	1	75,000	All year	En Nuhud/El Obeid	50,000	50,000
12.Trade in Veterinary drugs	1	50,000	All year	El Obeid/Omdurman	50,000	50,000
13.Carpenter	1	3,500	Nov.-May	El Obeid	20,000	20,000
14.Butcher	3	5,750 (revolving/week)	All Year	Local	26,000	8,667
15.Trade in livestock	4	65,000	All Year	Local	52,500	13,125
16.Merchant(shop)	3	81,667	All Year	El Obeid/En-Nuhud	55,000	18,333
17.Trade in Crops	4	87,500	Nov.-May	Local	50,000	12,500
18.Selling fuel-wood/Charcoal	11	1,000	Nov.-May	Local	3,445	313
19.Selling hay/Building materials.	9	7,000	Nov.-June	Local	1,748	194
20.Building/Brick making	3	7,500	Nov.-June	En-Nuhud/El Obeid	9,400	3,133
21.Camel/donkey hiring	2	12,800	All Year	Local	10,900	
Total	68	2,038,837			1,032,826	
Minus lorry owner		1,500,000			500,000	
Total		538,837			532,826	
Average		8,042			7,953	

The capital ranges are in the order of Ls 50,000-Ls 1,500,000. These categories of enterprises are financially established, and are to be excluded from the project support as not meeting the project targetting criteria.

ii. The rest of the enterprises fall within capital ranges of Ls 1,000 to Ls 50,000. Evaluated on the economic status of their operators, they all qualify for project support.

b. Season of activity

Only few of the enterprises are active all year round. For the majority of the enterprises the season of business spans the period October to August, with variations. This coincides with the time after harvest, and the passing of the nomads by the central places, both connoting the availability of cash in the hands of consumers or a high demand for certain products like hay or building materials.

c. Source of material

The sources of material are locally obtained. Outside sources include, En Nahud, El Obeid, and in two cases Hamrat Esh Sheikh (Sodiri Province) and Omdurman. Persons who are buying materials from Elobeid strike a higher profit margin.

d. Profit generated

The data reveals wide ranges of profit Ls 300 - Ls 500,000, from low and high earning enterprises:

i. The low earning enterprises are the selling of fuel wood, charcoal, building materials and wood crafts. These are casual activities and have a low market under a rural setting, where the household usually obtains for itself the products of these trades.

ii. The majority of the enterprises qualify as medium earning Ls 3,000 - Ls 12,000, presenting the ones to be considered for project support.

iii. Oil presses and horse carts look to be the most profit earning, Ls 50,000, outside merchandise.

3. Enterprises/other activities :

Assessment of the cash generated from enterprises in comparison to crop farming, livestock raising, and other miscallenous activities is attempted in Table 5.7, drawing on Tables 5.3, 5.4 and 5.6. The underlined percentages in Table 5.7 point out the activities exceeding the enterprises in levels of cash generation. The millet figures present an odd case of merchants cultivating large acreages. As for serghum, the figure was furnished by a case cultivating 'lugud' and stands true as revealing levels of cash returns from this type of cultivation. For the rest of the activities high levels of cash generation look usual, however, since the percentages of the population practising them is small, their economic return can not be generalized for the majority of the population of the area. On the final rating none of the three group of activities

Table Cash Generated From Crop Farming.

Cr[illegible]dent's ges 8	%	All Respondents ~~77~~:75 No.	%	Total Cash generated in Ls.	Average Cash generated by respondent.
1. Water Melo fruits	87.5	66	88	407,070	6,168
2, Gum Arabic	62.5	20	26.7	68,850	3,443
3. Sesame	62.5	16	21.3	64,750	4,047
4. Okra	25	13	17.3	70,230	5,402
5. Tamato	12.5	7	9.3	99,200	14,171
6. Karkadee	37.5	6	8	26,554	4,426
7. Millet	37.5	3	4	46,800	15,600
8. Sorghum	12.5	2	2.7	16,500	8,250
9. Groundnut	12.5	2	2.7	3,000	1,500
Total/Average		135		802,954	5,948

Table 5.5. : Cash Generated from Livestock Sales.

Type of Animal Sold	Respondent's villages // : 8		All Respondents // 75		Total Cash Generated in Ls.	Average Cash generated per Respondent
	No.	%	No.	%		
1. Goats	8	100	34	45.3	150,070	4,414
2. Sheep	5	62.5	14	18.7	150,900	10,779
3. Camel	2	25	3	4	39,000	13,000
4. Cattle	2	25	3	4	47,000	15,807
5. Donkeys	4	50	3	4	7,100	2,367
6. Horses	0	--	0	0	0	0
7. Chickens	4	50	5	6.7	2,200	550
Total/Average			62		396,270	6,391

Table 5.6: Cash Generated from Other Miscellaneous Activities.

Category	Respondent's Villages // 8		All Respondents // 75		Total Cash Generated in Ls.	Average Cash Generated
	No.	%	No.	%		
1. Selling his labour.	8	100	28	37.3	58,950	2,105
2. Other family members selling their labour	8	100	20	26.7	22,490	1,125
3. Generated by H/hold wife	7	87.5	19	25.3	60,380	3,178
4. Remittance	6	75	14	18.7	131,500	9,393
5. Emmigration	3	37.5	12	16(5)	173,000	34,600
6. Migration	3	37.5		(7)	40,600	5,800
7. Civil Servant	1	12.5	1	1.3	20,400	20,400
Total/Average			94		507,320	5,397

Table 5.7. : Enterprises/Other Activities Cash Generation Rating (1991)
Average for Enterprises : Ls. 7,953

Activity	Average Cash Generated	Rating			Average for Activity	Rating		
		Plus 7953	Minus 7953	Percentage 7953		Plus 7953	Minus 7953	Percentage 7953
I. Crop Farming :								
1.Water melon seeds/ fruits	6168	---	1785	77.56				
2.Gum	3443	---	4510	43.29				
3.Sesame	4047	---	3906	50.89				
4.Okra	5402	---	2551	55.39				
5.Tomato	14171	6218	---	178.18				
6.Karkadee	4426	---	3527	55.65				
7.Millet	15600	7647	---	196.15				
8.Sorghum	8250	297	---	103.73				
9.Groundnut	1500	---	6453	18.86				
					5948	---	2005	74.79
II.Livestock:								
10.Goats	4414	---	3539	55.50				
11.Sheep	10779	2826	---	136.53				
12.Camels	13000	5047	---	163.46				
13.Cattle	15807	7854	---	198.76				
14.Donkeys	2367	---	5586	29.76				
15.Horses	00	---	---	---				
16.Chickens	550	---	7403	6.92	6391	---	1562	80.36
III.Miscellaneous:								
17.Selling his labour	2105	---	5848	26.47				
18.Other family member selling his labour	1125	---	6828	14.15				
19.Generated by H/Wife	3178	---	4775	39.96				
20.Remittances	9393	---	1440	118.11				
21.Emmigration	34600	26647	---	435.06				
22.Migration	5800	---	2153	72.93				
23.Civil Servant	20400	12447	---	256.61	5397	---	2556	67.86

presented exceeded in cash returns the amount generated from the enterprises, as could be gathered from the averages for all 4 activities.

4. H/hold Budgets :

Table 5.8 detects the household budgets for households practising farming only and households practising farming and enterprises. The figures and percentages in the table reveal clearly a better performance of the households engaged in the enterprises in terms of expenditure on agricultural inputs, agricultural labour, household sustenance, and the overall economic status of the H/hold.

VI. Prospects For Support By ENCCP

1. Basic Considerations

The activities previously presented shall be discussed and assessed for NCCP support.

1.2. Agriculture

1.2.1. Rain-fed Farming on Qoz

This type of farming, practised all over the area, has low chances of giving a secure return to the H/hold judged on the parameters investigated:

i. Only one of the 4 years studied was promising for most crops raised, plus an additional one of a good watermelon crop.

ii. In all of the villages investigated only a few number of exceptional farmers managed to meet household millet sustenance needs in any one year.

Table 5.8. : Household Economic Performance :

H/holds practising Farming only, and H/hold practising farming and enterprises.

Category	Total Sample Surveyed	Size of sample under category	Expenditure Ls : Number of Respondents											Household Economic Status July 1992		
			Agricultural Inputs (Mainly seeds)				Agricultural Labour				Household Sustenance					
			Zero	< 500	500-1500	> 1500	Zero	< 1000	1000-4000	> 4000	< 1500	1500-4500	> 4500	Saved	Breaks even	Indebted
1. Practising Farming only.	75	27	5	10	11	1	26	0	1	0	3	24	0	7	12	8
Percentages		36.00	18.52	37.04	40.74	3.70	96.30	0.00	3.70	0.00	11.11	88.89	0.00	25.93	44.44	29.63
2. Practising Farming and Enterprises		48	6	14	17	11	28	4	3	13	0	32	16	19	24	5
Percentages		64.00	12.50	29.16	35.42	22.92	58.33	8.33	6.26	27.08	0.00	66.67	33.33	39.58	50.00	10.42
3.All respondents		75	11	24	28	12	54	4	4	13	3	56	16	26	36	13
Percentages		100.00	14.67	32.00	37.33	16.00	72.00	5.33	5.33	17.34	4.00	74.67	21.33	34.67	48.00	17.33

iii. Production levels of all crops decrease substantially as one moves into the northern parts of the area with a high dependency on food aid (in some parts since 1984) and on market purchases.

iv. A high frequency of attack by an array of pests for all crops causing a diminuation of harvest in years of good rains, like 1992.

v. Shortage of seeds and the use of late maturing varieties, with a high dependency on the market.

1.2.2. Jubrakas

i. Practised by women all over the area

ii. Plot size diminshes as we go north; in some villages to only the area of the house-yard.

iii. Established on loamy-clay soils in villages cultivating wadi recession land.

iv. Provides essential food items for the household, and a special income from the sales of okra for the house wife.

v. Seeds are indegenously provided, with a shortage in supply for most crops, and a lack of some of the desired crops.

vi. Production suffers from uncertainity of rainfall and pests hazards.

1.2.3. Farming on Flush Irrigation 'lugud'

i. Practised on low lands flooded annually by wadis.

ii. Utilization of these lands increased after the 1984 drought as a relatively more secure form of production compared to cultivation on the Qoz.

iii. Though the areas flooded may diminish in acreage from one year to the other, it was confirmed that this form of cultivation did not fail to yield a harvest during the last 8 years.

iv. Compared to rain-fed farming on Qoz the plots cultivated are small, yet minimizes risk taking since cultivation is mostly started after the land is sufficiently irrigated by flooding.

v. The acreage is small because the soil is hard to work, in some places water-logged, which requires breaking by more effecient implements, compared to the hand tools in use.

vi. Despite the smallness of the area cultivated yields are very high.

vii. Women participate in this form of agriculture as part of the household labour, raising as well jubraka crops with okra as a leading one.

viii. Production is open to the ravages of pests same as in the case of Qoz farming.

ix. Seeds in use are of indigenous types.

1.2.4. Horticultural Farming

i. Practised on recession lands at sites which are market places or close to market centres.

ii. Some of those practising this form of production are engaged in activities other than farming.

iii. The activity expanded after 1984 as an income generation strategy.

iv. Acreage cultivated is small and is in the form of fenced plots.

v. Irrigation is from surface water collecting in depressions at the start, supplemented from wells at some sites.

vi. Extraction of water is by manual labour, with pumps used at a few wells.

vii. Land is available for future expansion, however there is a high incidence of encroachment on gardens by pastoralists' herds as of April on.

viii. Seeds grown are of locally available types.

1.2.5. Gum Tapping

i. Extensively found in some localities in the southern parts of the area, diminishes in the north eastern part, and scarcely found in the north western corner.

ii. Production started to decline since the late 1960's and drastically reduced all over the area as of 1984.

iii. Production suffers from locust and browsing by the camel herds of passing-nomads.

iv. Petty amounts are currently collected and sold at village shops with no substantial quantaties taken by farmers to auction markets.

v. Lack of sustenance means (food and water) forces the population at villages remote from water sources to migrate by the end of the harvest, hence making gum tapping impossible.

1.3. Livestock

i. Declined as of 1984, with goats as the animal most raised and in small numbers.

ii. Sheep are found too with ownership limited to a smaller number of H/holds.

iii. Most households own donkeys as an important transport animal.

iv. Goats are raised essentially as a source of cash, besides the little milk they give.

v. The year 1990 was considered by the respondents as a drought year, with a severe impact on the goat population, especially in the central western part of the area.

vi. Diseases affecting goats and the other livestock types were reported as inflicting high losses; coupled with this is the lack of veterinary care, particularly drugs which when found are purchased at high prices.

vii. In the villages which suffer scarcity of water households not affording its cost, migrate with their animals to places of supply during the dry season.

viii. Inflation and the rising prices of beef and mutton have shifted consumption to goat meat, hence substantially expanding its marketability.

1.4. Water Supply

i. The non-availability of drinking water is a main problem in most villages, demanding on household labour, draining annual incomes and causing population instability.

ii. The watermelon crop is an essential source of water for the population since in years of good harvest it reduces dependency on purchased water thus saving on household income.

iii. The diminuation of the once substantially contributing sources of income, livestock and gum production, has reduced household ability in obtaining the costy trucked water.

1.5. Enterprises

i. The off-farm enterprises are selectively practised by a sizeable part of the population as integral components of the household economy, substantiating incomes derived from farming and livestock raising.

ii. It is normal that there is a concentration of enterprises at central places compared to the smaller settlements.

iii. The range of enterprises picked by the population varies from one part of the area to the other depending on economic opportunity; availability of raw materials and marketability.

iv. Farmers practising enterprises are economically better-off than those confined to farming.

v. Women are found to be engaged in a large number of enterprises, some of which merit immediate intervention, while others require efforts of organization.

vi. While some of the enterprises targetted for women could be implemented at both market centres and small places, there are some enterprise which need to be piloted with at central places, applying a rural development centre approach.

vii. Village communities viewed some of the previously listed enterprises as more viable for credit support than others, on considerations that their availability in a settlement would promote community prosperity. Also on prospects of co-operative credit guaranteeing, versus enterprises which only promote individual interest.

2. Some Guidelines :

On discussing the support by the project to activities in the marginal area, the following principles need to considered for guiding programme priorities and design:-

i. Activities would aim at stablizing the population, improve on the status of food production and lead to income generation.

ii. Minimization of risk incurred in credit giving, through effective initiation, selection of activities, design of programmes and follow up of implementation.

iii. Building on what is already acquired by the population in terms of drought alleviation strategies, production systems and locally developed technologies.

iv. Devoting special attention to women contribution to household sustenance as producers and income generators through enhancing these roles.

v. Adoption of a zonation frame breaking the area into two units, to enable the application of an integrated development package for each.

vi. The complexity of the development issues in the absence of acquired experiences calls for finding workable models by the project to serve replication over the area.

vii. Aplication of a sound community-based extension programme that would aim at enhancing levels of responsibility, build-up women capabilities, and promote community self reliance and solidarity.

3. Recommendations :

In light of the considerations and the set principles outlined above, the following recommendations are made:-

3.1. A Scheme of Zonation

The area is to be divided into 2 zones with a defined package of activities to be implemented at each zone. This is seen as essential to build a conceptual frame of development for each zone. The division would be based on the ecological characteristics, the potential of each area, the current activities practised by the population, priorities identified by the target groups, and the most feasible interventions.

A map to the scale of 1:250,000 was prepared for this purpose as mentioned previously. The delineation of the zones on the map is preliminary and is to be improved upon as project implementation progresses. The identified zones are, Fig.1:

Zone I :

This zone, and for the purpose of description, is comprised of:-

- an eastern part which extends between Lat. 12°45'[1/]N and the northern province boundary, Lat. 13°50'N, and between Long. 28°15'E, and the eastern province boundary, Long. 29°34'E, and

- a western part which runs between Lat. 12°45'N to Lat. 13°30'N, and extending east-west from Long. 28°15'E to the province boundary with Darfur State, Long. 27°25' approx.

Zone I could be distinctively divided into an eastern and a western part from about the latitude of Wad Banda. The former is devoid of water sources except for the water-yards aligning En Nahud - El Khuwei stretch of the main road going to Elobeid, and except for very localized water sources lying deeper north, such as Umm Maraheik water-yard and a few well sites. The western part commands more water-yards, yet again aligning the stretch of the road going to Darfur.

Of the main characteristics of this zone is the scarcity of drinking water sources with a high dependency, away from the water-yards and the few localized well sites,

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1/ The 13°N latitude should be taken as tentative. All villages immediately lying south of it and showing marginality' are to be incorporated. For this reason Lat 12 45'N. is stipulated. The final boundary could only be set with the progress of the project implementation.

on trucks, hods, tebeldi cisterns and watermelon. Gum was one of the main crops of this zone, presently either none existent or produced in small quantities. Field crops are more on the failure than the success side, however farmers continue raising them from one year to the other, providing for their own seeds. Millet and watermelon are basic crops for food sustenance and for water provision. Jubraka farming is extensively practised to supply some of the household food needs and for cash generation. Livestock mainly goats are being raised by most households. A wide range of off-farm enterprises is practised by both males and females.

Zone II :

This covers the rest of the marginal area, Fig.1, embracing the northern western part of the project area. This is a land of detached jebels, numerous drainage lines, surface water collecting during the rainy season in depressions making 'turdas' and 'rahads', with a noticeable soil diversity, clays, loams and Qoz. The water supply situation in this zone is better compared to the previous one, based on hand-dug wells, as most settlements are located on wadis.

Rainfed crops and gum production on Qoz lands show the same characteristics of Zone I. Two modes of farming other than Qoz cultivation are practised in this zone:

'lugud' and vegetable gardening. Jubraka farming is practised too, with a high emphasis on 'lugud' land. Of the livestock types, goats predominate again in this zone, with a noticeable presence of many cattle herds. A range of off-farming enterprises exists as in the case of zone I.

3.2. Recommendations, Zone I :

3.2.1. Crop Farming:

i. Provision of seeds loan, for the two crops millet and watermelon, on considerations of :

- Farmer is cultivating them annually.
- Farmer ends without seeds in years of bad harvest.
- Securing seeds in time, and in adequate quantities and good quality would maximize the possibility of a reasonable harvest in years of good rains.
- Production of millet and watermelon improves household food sustenance, increases cash generation, alleviates the water problem and enhances population stability.
- In case of crop failure repayment of the seeds loan could be afforded by the farmer as he is actually doing at present (providing for his own seeds).
- Farmers confirmed meeting the repayment of the seeds loans from their own sources (e.g. selling a goat) in case of crop failure, at all villages visited.

ii. Local pest control programme; integrated in the seeds credit for the two crops, a local pest control programme, building on the acquired experiences of the

project, shall be implemented. Farmers showed a high interest in pest control, indicating their readiness to be organized and trained to shoulder the activity, and to pay the costs of the pesticides.

iii. Jubraka Farming: recommended to be supported through a credit loan for the provision of seeds, combined with a programme of pest control, on the same considerations stated previously for crop farming.

iv. Gum Tapping: no credit is to be provided for gum tapping. Emphasis is to be given during the project life-time to the rehabilitation of the hashab tree by both community nurseries development and by direct seeding which is preferred by farmers to the planting of seedlings. Rehabilitation is to be encouraged as a community activity to be promoted by the village co-operatives/associations that would be formed, with participation in the costs involved.

3.2.2. Livestock: Two credits are recommended:

i. A medium term credit, for the purchase of a small number of goats, not exceeding 3 animals, open to both males and females heads of H/holds.

ii. A short-term loan, for sheep fattening in the order of 3 animals and also open to males and females heads of H/holds.

A condition which is to be met for the livestock loan giving which was agreed to by the peoples of the villages investigated was fodder storage. This is to be built on the old practice of 'tabaana' an enclosure set in the house where fodders (mainly hay) used to be stored in the past and resorted to at critical times. It was made clear to participants in the meetings, males and females, that the credit committees formed under the project would not approve livestock loans without applicants securing adequate hay in their 'tabaanas' and the condition was agreed to. Water for livestock remains a problem, especially at places dependent on trucked water, however it was remarked by the respondents that in case water costs are not afforded at the village, animals would be moved to watering places during the period of shortage of supply.

iii. Para vets/drugs fund: the project would initiate a programme of paravets coupled with the establishment of drugs revolving funds. Both activities found high acceptance by the males and the females participants who attended the meetings.

3.2.3. Water Provision: apart from the support to the watermelon crop mentioned earlier, two direct activities addressing the problem are recommended:

i. Hods construction: the project shall continue with the communal hods programme in this area. The accute water situation in the remote villages judged on the high water prices, the meagreness of the amounts consumed, and the poverty of the population, may re-orient the project to give special attention to this zone in programme allocations as compared to the southern parts of the project area.

ii. Enlargement of Rahads/Turdas: the project would look into the possibility of supporting villagers to organize labour intensive works for the enlargement of rahads/turdas to increase the preservation of run-off water during the rainy season. This would require medium term loans for the purchasing of excavation tools and fencing material, also food for work (cereals plus consumables) to motivate village labour. The loan shall be repaid on fixed water rates collections to be decided by the credit committees/associations on the households using the conserved water during the loan period.

3.3. Recommendations, Zone II :

3.3.1. Crop/Jubraka Farming on Qoz/Gum tapping and livestock raising: The same recommendations made for Zone I, are recommended for application in Zone II.

3.3.2. Farming on Flush irrigation (embracing Jubraka on lugud): short-term loans on the lines of the credit applied in the southern half of the project area to support crops grown; sorghum, sesame and the jubraka crops.

3.3.3. Horticulatural Farming: two lines of credit:

i. Seasonal credit on the same lines applied in the southern part of the project to support vegetable growers.

ii. Medium term loans to be availed for well construction, and the purchase of pumps, with the priority to be given to group farming using the same well and/or pump.

3.3.4. Local Pest control Programme: shall be extended on the same lines suggested for Zone I.

3.3.5. Water supply, two recommendations:

i. Enlargement of rahads/turdas as suggested under Zone I.

ii. Medium term loans supported by food for work for the construction of village wells. Villagers have the experience in siting wells, and indicated preparedness in participating in the digging and the construction activities.

3.4. Enterprises, Zone I and II:

3.4.1. Individual Credit:

The following list of enterprises was assessed at the meetings with the villagers as the most feasible for credit support by the project:

	Enterprises	Applicable at : central places	Small Places
i.	Animal drawn ploughts	x	x
ii.	Carts drawn by horses/ donkeys/camels	x	x
iii.	Oil-presses	x	x
iv.	Flour-mills	x	x
v.	Transport and draught animals(camels/donkeys)	x	x
vi.	Blacksmiths	x	x
vii.	Leather works/shoe-making	x	0
viii.	Tailors	x	0
ix.	Workshops for iron works/ carpentary	x	0
x.	Restaurants/coffee shops (males/females)	x	0
xi.	Women in trade	x	0
xii.	Bakeries (females)	x	0
xiii.	Poultry (females)	x	x

The above list was reached through screening the previous inventored enterprises, tables 5.1 and 5.2, by the participants in the village meetings. The criterion used was the degree the village woudd benefit from the enterprise, although it is targetted for individual credit-taking and benefits.

The credit is viewed as needed to meet one or more of three financies; purchase of production means (carts oil-presses, sewing machines, etc.) establishment capital (building of workshops, premises housing women activities, purchasing a herd of layers, etc.), or working capital (purchase of goods and materials, cloth by tailors,

leather by shoe-makers, iron by blacksmiths, etc). Hence some of the proposed activities would require medium term credit, while others would require a seasonal credit.

3.4.2. Group Credit :

Handicraft activities by women entail organization of group efforts, calling for the establishment of women rural development centres, on the same philosophies and approaches applied by the project in the southern rural councils. Rug-making and palm leaves works have high prospects in most villages. The project would aim at availing credit for two centres at the start, one at El Khuwei and the other at Abu Duldug (located near Umm Maraheik). More centres may be encouraged especially at places where women already began organizing themselves like Foga where a centre was started by the Drought Combating and Rehabilitation Project.

The two above suggested places were chosen on considerations of :-

i. Promotion of wool-based industries.

ii. Availability of wool on sale as was cited at Iyal Bakheit and Umm Maraheik markets, and the potential of the available wool on the back of animals if a market is created.

iii. The presence of a large women population at El Khuwei from Maganeen tribe and Abu Duldug of pastoral origin who are highly experienced in rug-making.

iv. The availability of a local expert in rug-making, residing at a village north of El Khuwei (Humeirat El Niaam) who showed interest in leading the activity, also of an educated lady from Iyal Bakheit who could be drawn into the activity as an extension agent.

v. The potential market for rugs, the prospects of profit gains and income generation by women.

vi. The combining of mat-making with the rug-industry at the same centres.

3.5. Studies :

It is recommended that the project would employ a hydro(geo)logist on a short-term assignment to assess the wadi potentialities of Zone II and outline a programme for the project interventions in areas of lugud farming, horticultural gardens, well siting, and the enlargement of rahads and turdas. The latter activity may entail extending his services to Zone I. It will be more pertinent that the study to be conducted by the expert, be guided by proposals that would be received by the project from the beneficiaries groups.

3.6. Piloting :

It is recommended that the project pilots with the following activities:-

i. Furrow Farming; on different types of soils in the two zones. The emphasis at the start would be on Jubraka crops. The idea centres on excavating small ditches in or close to Jubrakas for rain water collection or by utilizing the small bodies of water collecting in depressions during the rainy season for irrigating furrows on alignments of which crops would be sown. The spacing of furrows would be determined by the type of crop, okra and the cucurbet types. The furrow would be elevated at one end and of a smooth gradient towards the other end. Water would be taken manually from the ditch and poured at the elevated end to irrigate the whole length of the furrow. Animal manure would be used to fertilize the edges of the furrow where crops are planted. The piloting is targetted to test:

- Prospects of using the collecting rain water for supplementary irrigation especially during intervals between the rains.
- Generation of a more effecient farming system through introducing better farming practices.
- Increasing the production of Jubraka crops under precarious rainfall hence enhancing the household food supply and women incomes.

ii. Animal drawn ploughs; to be piloted with under all types of soils, Qoz, loams and clays, with emphasis on the use of donkeys and camels, the two animals which are already possessed by some households. A break-through, through the use of ploughs is vital for increasing production,

reducing the costs of weeding (Ls 800-1000) to the makhamas (1992), and for expanding the acreage cultivated, especially on the 'lugud' soils which are hard to work by the implements in use by the farmer.

iii. Camel drawn carts: A small number of camels are individually owned in some villages. The type of cart in use is horse-drawn and in some cases donkey-drawn. The presence of carts is important in the villages for various transport purposes. The camel is cheaper to feed and maintain compared even to the donkey, since it depends on browse material with no need for supplementary feeds (cereals). Also its drinking interval is longer, up to 11 days, and can reach the places of water. Camel drawn carts though not widely in use in Sudan are to be found at some places in Kordofan. On our way to the project area we stood (the consultant, the extension manager, and some of the research staff of WSARP) on a farmer at Khor Taqqat village, near El Obeid, utilizing his camel in draughting a plough, operating an oil press and drawing a cart. With minor alterations the two-wheeled cart presently in use in the project area, and drawn by a horse could be adjusted to be drawn by a camel. It is recommended that the project runs one camel-drawn cart at En Nahud for the purpose of dessimination and adoption of the idea possibly through getting the previously mentioned farmer who showed interest to En Nahud to demonestrate the experiment.

iv. Using lime for Hod construction: During the colonial period lime was extensively used as mortar in the construction of buildings. The technique continued up to the mid 1950's. On visiting Wad Banda, we came on 4 cisterns (capacity 1.5 x 1.5 x 2 m) with 20 cm wall thickness, built of a mix of gravel, lime and sand with, no steel reinforcement. These hods date back to 1916 and were constructed to conserve water gathered from tebldi cisterns for the use of the army sent for the pacification of Darfur. One of these hods is presently utilized by a farmer during the rains to supplement irrigating Jubraka crops. More of these hods exist on the route which was followed by the military campaign, and need to be mapped and utilized for the furrow irrigation piloting proposed earlier. Yet more importantly, and since these hods are standing solidly up to the present day (76 years) the project would look into the possibility of using lime in hods construction. The expertise of an engineer, preferably one who worked during the colonial period, could be sought. Since lime is locally available in the area, hods' costs could be drastically reduced, schedules of implementation often delayed by the long waiting for cement quotas could be brought under control, and the steel for the reinforcement of hods structures might not be required.

3.7. Moving People South :

This proposal which was specified in the terms of reference was thrown to the different communities visited to obtain their responses which may be summarised as follows:-

i. This is our land which we inherited from our forefathers and as says the proverb "my home and not satisfying my hunger."

ii. Our land has a healthy environment, mild weather and less attacks by malaria, compared to the southern areas. The same applies to our livestock in terms of good quality grazing and less disease occurence.

iii. We will not be accepted by the people of the southern areas. Land had already been colonized there, and there will not be enough for our use.

iv. Those who wanted to move already had left as individual families especially after the 1984 drought. The places they moved to included south Kordofan, south Blue Nile, the irrigated schemes and the towns of central Sudan. Hence the decision to move is to be left to individual's wishes.

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Appendix I

Terms of Reference

General

- Propose financially viable enterprises other than crop farming which are able to be financed by [illegible]

Specifics

Over-view of:-

- Demographic characteristics
- Household productive activities
- Based on above and identification of the major constraints for sustained production in the northern area, the consultant should develop proposals for alternative smaller credit lines which could be extended to farmers and rural women.
- In developing these alternatives the basic objectives of the project should be kept in mind, as well as the environmental consequences.
- The possibilities of developing a loan package in line with the Government policy that might assist farmers to migrate to the southern part of the project area, should also be considered.

- Finishing the field visit the consultant within 20 days will complete a report satisfactory to IFAD outlining or recommending the proposals.

- The report which should include a bibliography of small scale enterprises, trade and demographic trends in Kordofan and an executive summary will be submitted to IFAD, with a copy to Project Co-ordinator for En Nahud, and UNDP/OPS outpost in Nairobi.

Appendix II

Itinerary

1 - 2 Nov. 1992	: Khartoum, preparations for the field trip.
2 - 3 Nov.	: Elobeid: consultation with WSARP staff.
3 - 11 Nov.	: En Nahud: Review of literature, consultation with Project staff, design of research format.
11 - 21 Nov.	: Field trip to the marginal area.
21 - 30 Nov.	: Data analysis, discussions with Project staff, drafting of report.
30 Nov.-10 Dec.	: Khartoum: report finalization, typing and map work.

APPENDIX III

Bibliography of Small Enterprises.

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Fig. 1. The Study Area