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MINISTRY OF NATIONAL PLANNING
(Project Preparation Unit)

NEW HALFA IRRIGATION PROJECT
REHABILITATION STUDIES
PHASE II

Support Measures

ANNEX 6

Cooperative and Private Farm Machinery Sectors
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ANNEX 6

Cooperative and Private Farm Machinery Sectors

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A full cooperative machinery "unit" would consist of the following items(1):

<u>Item</u>	<u>Unit Cost</u>	<u>Total</u>
	<u>In LS</u>	<u>In LS</u>
5 x 75 hp tractors	9,500	47,500
2 x rolling cultivators	2,500	4,000
2 x seed drills	6,000	12,000
2 x groundnut combine	10,000	20,000
3 x trailers	2,000	6,000
3 x planters	1,900	5,700
		<hr/> 95,200

Variations in cooperative size would be accommodated by appropriate adjustment of the above "unit".

Additional to the machinery unit, cooperatives would be supplied where appropriate, with a small (30 m²) farm machinery shed/-storeroom including workbench, fuel drums, and a basic tool set. Each cooperative would be equipped with standardized book-keeping material and simple calculator(2).

Provision of equipment would take place in accordance with the implementation schedule in Table 11.

3.6.2.4 Workshops and Equipment

Supplementary equipment (air-operated tyre fitter, steam cleaner, 60 ton press) would be provided for the Cooperative Union workshop at New Halfa. Additional mechanics and storekeepers would be trained.

A workshop for the cooperatives to be established in the Nomad zone would be constructed at El Sabaat in Year 1. The gradual growth of cooperatives in the area would justify a further expansion of facilities in Year 4. Equipment would be provided to an amount of LS 2,500. A total of ten mechanics and assistants and two storekeepers would be trained for the workshop.

1) See ANNEX 3.

2) Standardized bookkeeping systems as designed by the National Cooperative Development Centre, adapted to local situation.

	<u>Total Area double-ridged (fdns) (rounded)</u>	<u>Cooperative Area double-ridged (fdns)</u>	<u>Per Cent</u>
Year 1	31,400	24,000	76
Year 2	62,700	81,000	100 +
Year 3	97,700	87,000	89
Year 4	137,000	93,000	68
Year 5	182,300	105,000	58

In Year 2, the area in principle under cooperative double-ridging would exceed the Scheme total for that year. All machinery with the exception of the planter can, however, be used for current cultivation methods, so excess capacity in the cooperative sector would be minimal. By Year 5, some 58 per cent of the total double-ridged area in the Scheme would be accounted for by cooperative-controlled farm operations (secondary tillage, planting, groundnut combining and transport)(1).

As a result of the Programme, a marked division of function as between the NHAPC and cooperatives would emerge in those areas where societies operated. The cooperative sector would be responsible for secondary tillage, seeding, groundnut combining, transport, etc. The Corporation would concentrate on primary tillage, employing 105 H.P. crawler tractors.

The relatively modest expansion of the sector over the first five years would, however, mean that on some 40 per cent of the area cultivated in Year 5, the Corporation would still be responsible for secondary tillage operations. After Year 5, and depending on the degree of success of the 35 societies existing at that time, a further expansion of cooperative control of secondary tillage operations might be expected(2).

3.6.2.3 Equipment Requirements

Equipment to be provided to existing and new cooperatives is based upon the requirements of a model cooperative of 200 members cultivating 3,000 feddans of cotton, groundnuts and sorghum(3), and engaging in secondary tillage, planting, combining and transport.

- 1) See also ANNEX 3, Chapter 5.3 for the short-term development of cooperative tillage.
- 2) On the longer-term development of cooperative-controlled tillage operations, see also ANNEX 11, Chapter 2.
- 3) To facilitate calculation, it has been assumed that all cooperative members would be cultivating a full 15 feddans holding, despite reduced water supply.

machinery operations, maintenance, bookkeeping, tractor management and storekeeping. Some assistance would be provided to the New Halfa office of the Ministry of Cooperation. Investment and operating financing would be channelled to the cooperative sector through the New Halfa office of the Agricultural Bank of Sudan. An internationally-recruited adviser on cooperative development would be supplied for the duration of the Project.

3.6.2.2 Implementation Schedule and Effects of Programme

The training, management strengthening and equipping of cooperatives with farm machinery would take place in accordance with the implementation schedule given in Table 11.

ANNEX 6
Table 11 Implementation Schedule:
Cooperative Development Programme

Type of Cooperative	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Halfawyeen operating(1)	8	14	-	-	-	22
Halfawyeen defunct(2)	-	3	-	-	-	3
Nomad(3)	-	2	2	2	4	10
Total	8	19	2	2	4	35

Source: own evaluation.

- 1) Twenty-two societies currently operating, of which the eight strongest would be equipped in Year 1, the balance in Year 2.
- 2) Three non-operating societies (Villages 8, 9 and 22) to be re-organised and equipped in Year 2. The cooperative at Dabarosa has been excluded. A review of management and internal problems in the three villages would take place in Year 1.
- 3) Societies to be established in the Nomad area. For suggested areas of establishment, see 3.6.2.8 below.

This implementation schedule is to be compared with the implementation schedule for double-ridging and improved cultivation methods. Under the latter, the available irrigated area under double-ridging increases by 20 per cent per annum. The development of the cooperative programme is, however, irregular(1). The comparison is made below:

- 1) The irregularity in the second year is imposed by two factors: the need in Year 1 to overall the management in a number of weaker Halfawyeen societies, prior to commencing operations in Year 2; secondly, the need to commence by Year 2 at the latest, some cooperative development action in the Nomad area.

3.6 Cooperative Development Programme

3.6.1 Justification and Strategy

The general justification for Project assistance to farm-machinery cooperatives in the Halfawyeen area is twofold:

- It will increase the existing highly desirable trend towards greater self-management in the organization of agricultural operations.
- The Halfawyeen farm-machinery cooperatives have, despite considerable difficulties in financing and under conditions of Scheme decline, achieved a reasonable level of success, more particularly in the period since 1977. This would not have been possible without the high quality of management of the Union itself, which now deserves to be further supported in its attempt to strengthen member societies.

In the case of the Nomad area, the justification for assistance (the development of greater self-management capacity) is the same. Additionally, however, is the crucial factor of imbalance between the two communities. Appraisal Report proposals foresee replacement machinery and equipment being provided to the Halfawyeen societies exclusively, the net effect of which would be to discriminate even further against the Nomad community. In the consultant's view, it is essential that any cooperative development programme embrace the two communities, in an attempt to begin the long process of restoring some degree of balance in the Scheme.

The need to decentralize control over farm operations to the level of the tenant, and the need to begin to re-equilibrate the Scheme, are thus the two premises which underly the following proposals.

3.6.2 Programme Description

3.6.2.1 Main Features

The Programme would equip a total of 25 cooperatives in the Halfawyeen area with the machinery and equipment to allow them to undertake the secondary tillage aspects of the new cultivation methods proposed in ANNEXES 2 and 3. Additionally, the Programme would promote the establishment of ten similarly-equipped cooperatives in the Nomad area over five years. A cooperative machine workshop would be established at El Sabaat, and additional equipment provided to the workshop (under construction) of the Cooperative Union. A comprehensive training programme would be established for the existing and new cooperatives, embracing farm

ANNEX 6
Table 10

Gaili Cooperative Society:
Balance Sheet 31.12.1978

Liabilities	1977		Assets	1977	
Capital	1,450	1,500	Fixed assets		
Legal reserves	857	445	. Mill and building(1)	2,634	2,214
Provisions			Current assets		
. Social services	129	67	. Debtors	350	350
. Audit fees	170	90	. Cash	2,290	697
. Depreciation	649	312			
Revenue reserves	2,019	847			
	5,274	3,261		5,274	3,261

Source: New Halfa Office, Ministry of Cooperation.

1) Historic cost.

The indication from Table A1 (in Appendix) is that the flour mill is relatively the most successful type of cooperative. Most mill societies were founded in the early 1970s, under the impetus of the self-help movement in the Nomad areas.

Field investigations indicate that the Nomad population is well aware of the advantages derived by the Halfawyeen community from cooperative control of farm machinery. In at least two cases (El Sufia and Rataga) funds have been collected for deposit against the purchase of farm machinery on a modest scale(1). Unsuitability of machinery on the market and difficulties in obtaining guarantees aborted both efforts - a reflection of the general difficulty of the Nomad community in gaining access to credit and influence.

The Nomad community is thus not tabula rasa. The leadership of the predominantly Nomad Tenant Farmers' Union is of the view that, given a structured cooperative development programme with the provision of credit facilities and training, the leadership and financial resources would be forthcoming in the community to begin the formation of farm-machinery cooperatives. The management of NHAPC is prepared to support the general development of mechanized farming cooperatives in the Scheme area as a whole.

1) El Sufia: reportedly LS 4,000; Rataga LS 1,500 (1979). In both cases, funds generated from other cooperative activities.

3.4.4.2 Requirements

The priorities of the Cooperative Union in the short and mid-term are re-equipping and strengthening the existing farm machinery cooperatives, rehabilitating the defunct societies, establishment of the mechanical workshop and expansion of its flour milling capacity(1). It does not see itself as entering the field of crop marketing, or oilmilling (on the grounds that the private sector is clearly established in this latter area). It would appear the Union has played an insufficient role to date in training and strengthening the management of its primary cooperatives(2).

Under the Cooperative Development Programme presented below, it is proposed therefore that the Project provide assistance in the training of cooperative management staff (farm machinery managers and bookkeepers), tractor drivers and workshop maintenance staff (mechanics)(3). Financial assistance would also be foreseen for the purchase of additional equipment for the workshop under construction. Additional and replacement farm machinery would be supplied progressively to the Halfawyeen cooperatives, to meet more demand tillage requirements under the existing system of land preparation as well as to meet the requirements of improved tillage methods to be introduced progressively over five years.

3.5 Development Potential in the Nomad Area

As noted in 3.2.2 above, there are no farm machinery cooperatives in the Nomad area. Nomad experience with cooperative organization has been largely limited to flour mill and consumer societies, and the record has been very mixed(4). The society at Umm Gar-gour, for example, has been non-operational for 2 years, as a result of social conflict between rich and poorer groups in the village(5). The flour mill society at Rataga, on the other hand, starting with an initial membership of 120 and share capital of LS 1,800, has reportedly reserves of LS 3,200. The comparative balance sheet of a more successful society, that of Gaili is presented in Table 10.

-
- 1) The Union no longer attaches priority to participating in the establishment of a textile mill at New Halfa.
 - 2) Possibly on the grounds that this is seen as the task of the local office of the Ministry of Cooperation.
 - 3) For cooperative training, see ANNEX 7, Part C.
 - 4) See details in Table A1.
 - 5) See Map 1 in Appendix.

ANNEX 6
Table 9 Cooperative Union: Fiat Tractor Financing (in LS)

Gross Cost		
- 40 tractors	188,000	
- 50 implements	<u>31,433</u>	219,433
Deposit		<u>48,891</u>
Balance at 1.7.1977		170,542
Repayment by 30.6.1979		<u>75,274</u>
Net owing		<u>95,268</u>

Source: Cooperative union

Foreign exchange requirements for the purchase of additional spare parts (tractors and mill) in the period 1978-80 have been set through letter of credit with the Feisal Islamic Bank at an effective approximate rate of US\$1 = LS 0.85 (\$1 = LS 0.53 + 35 per cent loading + CIF).

3.4.3 Union Expansion Plans

3.4.3.1 Mechanical Workshop

The Union is currently constructing a workshop on the basic Rahad model(1) for the servicing of the cooperatives' farm machinery, and its own machinery and vehicle fleet. This will replace the existing temporary repair shop. Estimated date of completion is May 1981.

Financing for the new workshop building is part Government grant money, part Union. Estimates of final cost vary, but are expected to be of the order of LS 200,000, well over the original estimate provided to the Union. Financing is expected to be as follows:

- Govt. grant (released 2/1980) LS 50,000
- Govt. grant (due 8/1980) LS 50-75,000

The Union has expressed concern over the uncertainty in estimates and financing. If the workshop is clearly under its control(2), it would be prepared to assist in financing to a maximum of LS 30,000.

1) 9,000 m² including offices and stores, brick built, fully enclosed. Construction by New Halfa Ministry of Public Works.
2) It is currently uncertain whether the Ministry of Cooperation would wish to control the workshop.

Source: Cooperative Union, New Hlafa.

- 1) "Profit under adjustment" in cooperatives' balance sheets.
- 2) Balance on financing for subsidized wheat purchases.
- 3) Fiat tractor purchase.
- 4) For wheat purchases.
- 5) See further below.
- 6) Represents outstanding balance on Fiat tractor financing.
- 7) Represents prepaid cost of feasibility study for textile factory for Union - now reportedly blocked by Bank of Sudan.
- 8) Adjustment on purchase of three buses.
- 9) At 8% p.a.
- 10) With Faisal Islamic Bank.

ANNEX 6
Table 7

Cooperative Union: Comparative Profit and
Loss Appropriation Account to 30-6-1979

1977	1978		
47,727	144,639	<u>Net profit</u>	146,758
		<u>To:</u>	
11,933	36,360	25% legal reserves	36,690
2,385	7,232	5% employee incentive fund	7,352
-	723	Doubtful debt reserves	3,214
2,455	2,343	Retirement fund	4,800
30,954	97,981	Net profit for distribution	94,716
			<u>146,772(1) 146,758</u>

Source: Cooperative Union.

1) Discrepancy not explained.

ANNEX 6
Table 6

Cooperative Union: Comparative Trading, Profit
and Loss Accounts to 30-6-1979

1977	1978				
		Sales	1,760,039		
		Stock at end			
		. Flour, bran	17,029		
		. Wheat	502,580		
n.k.	1,824,940	. Materials	75,094	594,703	2,354,742
		<u>Less:</u>			
		Opening stock			
		. Flour, bran	6,640		
		. Wheat	247,360		
		. Materials	49,482	303,482	
		Purchases			
		. Wheat	1,656,693		
		. Spares, sacks	67,989	1,724,682	
		Production charges		128,715	
	1,650,822	Depreciation		18,247	2,175,126
55,641	174,118	<u>Gross trading profit</u>			179,616
		<u>Add:</u>			
	894	Various income		5,062	
	-	Mechanical workshop income		650	5,712
67,790	175,012	<u>Gross profit</u>			185,328
		<u>Less:</u>			
		Salaries		8,618	
		Bank charges		5,249	
		Audit fees		1,500	
		Depreciation		2,804	
		Various expenses		20,399	38,570
47,727	144,639	<u>Net profit</u>			146,758

Source: Cooperative Union (summarized).

3.3.2.5 Rescheduling of Cooperatives' Bank Debts

Seven societies have had long-standing overdue loans from the Sudan Commercial and Agricultural Banks(1), interest payments on which have represented a heavy drain on the societies' profitability. In mid-1979, the Cooperative Union effectively purchased these debts from the two banks concerned, at a discount of all accumulated interest. The societies are to repay the Union interest free (repayment period not known). The situation of the Villages concerned (Nos. 4,6,7,8,12,20,21 and 22)(2) may be expected to improve as a result. The position is set out in Table 5.

ANNEX 6
Table 5

Halfawyeen Cooperatives: Bank Debt Rescheduling

Village no.	Capital & interest o/s at end 1978 (LS)			Interest written off	Balance due to Coop. Union
	Sudan Com.Bank	ABS	Total		
4	5,745	2,767	8,512	5,815	2,697
6	9,648	-	9,648	6,204	3,444
8	-	10,536	10,536	5,541	4,995
12	5,548	-	5,545	3,395	2,150
20	861	-	861	657	204
21	4,189	-	4,189	2,951	1,238
22	-	3,519	3,519	1,552	1,967
Total	25,991	16,822	42,813	26,115	16,695(1)

Source: Cooperative Union (figures rounded).

1) Repaid by Union to banks in July/October 1979.

1) As noted above in the case of Villages 6 and 12.

2) Villages 8 and 12, however, were reported as not functioning in March 1980. The former has no instalments overdue to the Union on Fiat financing. The latter is in a more serious position, with total loans outstanding to the Union of LS 10,419 (LS 8,452 Fiat financing, LS 1,967 rescheduled bank debts), of which LS 1,847 was overdue at 11/1979.

ANNEX 6
Table 4

Halfawyeen Cooperatives: Repayment
of Tractor Credit, 1977-1979

Village no.	Tractors and spares 7/1977 (LS)	Repayments at 11/1979 (3)	Balance o/s at 11/79	Balance o/s and overdue at 11/79
1	11,350	4,657	6,693	-
2	11,225	3,457	7,768	1,033
3	11,480	3,857	7,623	735
5	10,882	4,378	6,504	-
6	10,862	5,457	5,405	-
7	11,035	2,972	8,063	1,442
8	5,367 (1)	2,379	2,988	-
10	11,199	3,957	7,242	523
11	11,298	3,739	7,569	790
12	10,983	3,657	7,326	736
13	11,029	4,257	6,772	155
15	10,772	6,057	4,715	-
16	5,411 (1)	2,478	2,933	-
18	12,153	4,600	7,553	261
19	5,393 (1)	1,728	3,665	429
20	11,090	3,807	7,283	629
21	11,023	2,860	8,163	1,549
22	11,009	2,557	8,452	1,847
23	10,961	2,517	8,444	1,867
24	5,637 (1)	2,000	3,637	255
26	10,792	2,870	7,922	1,447
33	10,970	2,707	8,263	1,681
Total	221,921 2,514 (2)	76,938	144,983	15,379
Total to repay	224,435			

Source: Cooperative Union and own calculations.

- 1) One Fiat and implements, remainder two.
- 2) Increase due to 1978 devaluation, to be shared equally between Union and cooperatives in 5/82.
- 3) Possibly excludes some late repayments.

ANNEX 6
Table 3Halfawyeen Cooperatives: Trading Profit
on Agricultural Operations, 1976-1979

Vil. no.			Gross	Depreciation	Op. costs	Trading profit
1	(1)	1979	27,223	9,059	10,350	7,814
		1977	n.a.	-	-	-
		1976	4,490	1,461	1,757	1,272
2		1979	n.a.	-	-	-
		1978	21,290	7,000 (2)	7,650 (2)	6,640
		1977	13,480	8,500	(3)	(3)
5	(1)	1979	12,361	3,853	5,719	2,789
	(1)	1978	11,221	3,342	7,120	759
	(4)	1976	4,323	380	1,678	2,265
24	(1)	1979	4,334	3,405	3,126	(2,197)
		1978	6,794	1,912	2,941	1,941
		1977	3,056	1,833	1,842	(619)
13		1979	5,055	6,500 (2)	2,688	(4,133)
		1978	6,467	3,020	3,049	398
		1977	5,677	3,200	4,385	(1,908)
6		1979	11,312	4,195	5,614	1,503
		1978	7,406	2,952	3,359	1,095
12		1979	7,549	2,660	3,245	1,644
		1978	7,945	2,534	2,954	2,457
		1977	448	460	739	(751)
19		1979	2,024	1,951	1,268	(1,195)
		1976	967	340	577	50

Source: Cooperative accounts and own calculations.

- 1) Includes harvester.
- 2) Estimates.
- 3) No calculation possible.
- 4) Only harvester.

The cases of Villages 6 and 12 illustrate the particular problems of outstanding loans from the Sudan Commercial Bank for farm machinery purchased well prior to the acquisition of Fiat tractors in mid 1977. Both cooperatives (in common with seven others) were, at 31-5-1979, indebted to the Bank for a total of LS 16,891, including accumulated interest. In 1979, interest payments effectively obliterated an LS 1,500 trading profit of Village 6, and halved that of Village 12. The Cooperative Union has now taken over these debts (see further below), and the situation of the societies may be expected to improve. By commercial standards, the cooperative Village 6 was bankrupt at 31-5-1980, and that of Village 12 very close to it. The overall financial situation of the Village 12 cooperative has, however, been improving over the last three years, with "loss carried forward" reducing from LS 8,708 to LS 6,350.

Finally, the situation of Village 19 has also worsened, with "loss carried forward" doubling over the period 1976-1979(1).

3.3.2.3 Trading Results

The comparative trading profits or losses of the eight societies are presented in Table 3.

3.3.2.4 Repayment of Fiat Tractor Loans

Table 4 below indicates the societies' degree of success in repaying instalments due on the Union's purchase of 40 Fiat tractors in mid-1977. Of the 22 cooperatives taking credit, 5 have no overdue balances, and a further 4 have overdue balances under LS 500. Seven have overdue balances in excess of LS 1,000. Total outstanding and overdue balances represent 6.9 per cent of the total amount of the original credit.

For the eight cooperatives analyzed above, there is no high correlation between repayment record and the financial strength of the cooperative(2). The most successful society, village 2, was over LS 1,000 in arrears at 11/1979; the two societies showing a marked deterioration in their situation (Villages 13 and 24) had minor overdue balances, as did the two societies with heavy outstanding loans from the commercial banks (Villages 6 and 12). A need for tighter financial discipline over the societies would seem to be apparent in a number of cases.

1) Accounts incomplete.

2) Some discrepancies occur between outstanding balances in societies' accounts and those recorded by the Union.

ANNEX 6
Table 2 contd.

Akma Klur Village No.24							
Liabilities	1979	1978	1977	Assets	1979	1978	1977
Capital	9,474	9,462	9,462	Fixed assets			
Legal reserves	3,439	3,439	3,268	. WDV	5,175	7,578	8,168
Revenue reserves	301	3,394	2,918	Current assets			
Provisions				. Debtors	1,708	394	416
. Audit fund	-	40	5	. Stocks	-	237	-
. Suspense a/c	-	-	333	. Cash bank/box	4,223	5,678	4,841
. Social service fund	168	168	134				
Creditors				Long-term investments			
. Coop. Union	2,700	2,700	2,700	. Shares in Coop. Union	22,701	22,701	22,701
. Other	45	76	-	. Other		370	370
Profit under adjustment	17,681	17,681	17,681				
	33,808	36,960	36,501		33,807	36,958	36,501

Eshkeit South Village No.13							
Liabilities	1979	1978	1977	Assets	1979	1978	1977
Capital	10,248	10,248	10,176	Fixed assets			
Legal reserves	2,594	2,527	2,527	. WDV	7,409	12,884	4,700
Revenue reserves	-	-	-	Current assets			
Provisions				. Debtors	168	203	210
. Audit fund	-	-	-	. Repayments	44	49	5
. Other	8	8	8	. Stocks	-	-	-
. Social service fund	99	85	110	. Cash bank/box	252	1,625	77
Creditors				Loss C/F	7,474	2,806	3,070
. Coop. Union	6,400	8,700	-	Long-term investments			
Profit under adjustment	14,145	14,145	14,145	. Shares in Coop. Union	18,145	18,145	18,145
	33,494	35,713	26,965		33,492	35,712	26,965

			El Hassa Village No.6				
Liabilities				Assets			
	1979	1978			1979	1978	
Capital	3,908	3,906	N.A.	Fixed assets			
Legal reserves	379	379		. WDV	8,517	9,912	
Revenue reserves	-	-		Current assets		N.A.	
Provisions				. Debtors	473	398	
. Audit fund	90	85		. Stocks	-	-	
. Social service fund	-	-		. Cash bank/box	898	1,329	
Creditors				Loss C/F	9,534	9,473	
. Coop. Union	5,200	8,200		Long-term investments			
. Sudan Comm. Bank	10,726	9,310		. Shares in Coop. Union	4,580	4,580	
. Various	163	276					
Profits under adjustment	3,536	3,536					
	24,002	25,692			24,002	25,692	

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ANNEX 6
Table 2

Halfwayeen Cooperatives: Comparative Balance Sheets, 1976 - 31.5.1979

		Faras West Village No.1						
	Liabilities 1979	1977	1976		Assets	1979	1977	1976
Capital	6,534	3,712	3,712	Fixed assets	24,014			
Legal reserves	2,058	581	418	. less accum.dep.	10,604	13,410	11,126	1,693
Revenue reserves	5,629	1,434	969	Current assets				
Provisions				. Debtors		2,837	133	428
. Audit fund	340	40	85	. Stocks		-	-	-
. Social service fund	307	86	53	. Cash bank/box		3,734	3,101	2,116
Creditors				Long-term investments				
. Coop. Union	6,000	9,529	-	. Shares in Coop. Union		4,580	4,580	4,536
. Various	155	-	-					
Profit under adjustment	3,536	3,536	3,737					
(1)	24,559	18,918	8,974			24,561	18,940	8,773

		Sarra West Village No.2						
	Liabilities 1979	1978	1977		Assets	1979	1978	1977
Capital	N.A.	3,364	3,364	Fixed assets				
Legal reserves		5,844	4,664	. WDV (2)		N.A.	19,072	19,747
Revenue reserves		10,682	7,378	Current assets				
Provisions				. Debtor NHAPC members			5,394	-
. Audit fund		980	790	. Stocks			1,686	803
. Social service fund		711	475	. Cash bank/box			729	-
Creditors				Long-term investments			3,488	3,222
. Coop. Union		8,700	8,700	. Shares in Coop. Union			7,278	7,278
. Suppliers		1,685	-					
. Sundry		23	23					
Profit under adjustment		5,658	5,658					
		37,647	31,052				37,647	31,050

		Argin North Village No.5						
	Liabilities 1979	1978	1976		Assets	1979	1978	1976
Capital	6,454	6,454	6,454	Fixed assets				
Legal reserves	4,198	3,531	3,025	. WDV		12,074	11,257	1,787
Revenue reserves	4,805	2,937	3,856	Current assets				
Provisions				. Debtors				
. Audit fund	265	150	245	- Members operations	1,155			
. Social service fund	388	255	255	- Members harvesting	2,500			
Creditors				- Various	70			
. Coop. Union	7,129	8,507	-	- NHAPC (cotton)(3)	7,237	10,962	7,625	7,603
. Various	1,148	348	1,023	. Stocks			205	
Profit under adjustment	4,244	4,244	4,244	. Cash bank/box		151	1,794	4,266
				Long-term investments				
				. Shares in Coop. Union		5,446	5,444	5,444
	28,631	26,426	19,102			28,633	26,325	19,100

Halfwayen Cooperatives: Farm Machinery, Equipment and Operations

Village name	Operational tractors(1) make/date	Operational implements(4)				Combines(5) make/date	Oper.	In-Scheme operations 1979 (Feds.)(6)				No. members (7)		
		No. D/H/S	Ridge.	Abu VI ditch.	Trailer			D/H	Ridge.	Abu VI ditch.	Seed.		Combine	
1 Ficus West	2xP	2	2	2	1	1	1xP(71)	1	3,040	3,955	686	770	860	240
2 Sarrat West	2xP, 1xP(65) 1xM(73)	4	2	4	1	1	1xJ	-	3,020	10,050	4,563	1,170	-	190
4 Sarrat East	2xP, 1xP(68)	3	-	2	1	1	1xR(68)	-	-	4,425	300	-	-	192
6 El Hassa	2xP, 2xM(67)	4	2	3	1	1	1xJ	-	2,760	5,240	1,497	1,260	-	276
5 Argin North	2xP	2	1	2	-	1	-	-	3,900	4,400	-	1,410	-	233
7 Hagfir	2xP, 1xM(75)	3	1	2	1	1	1xJ	-	805	2,235	870	1,300	-	185
8 Argin West(2)	1xP	1	-	1	1	1	1xJ	-	-	1,875	-	-	-	189
9 El Mezraa(2)	-	-	-	-	-	-	-	-	-	-	-	-	-	111
10 Marshida	2xP, 1xP(68)	3	1	2	1	1	1xJ	-	640	4,575	215	350	-	221
1 Salados	2xP, 2xM(69)	4	3	4	1	1	1xP(68)	1	6,340	7,405	1,000	1,195	1,090	309
2 Ashkeit North	2xP	2	1	2	1	-	1xJ	-	1,800	2,200	440	1,000	-	166
3 Ashkeit South	2xP, 3xP(67)	5	2	3	1	1	1xJ, 1xR	-	2,975	1,725	453	645	-	198
5 Anka Geima	2xP	2	2	3	1	1	1xJ	-	2,550	4,335	477	750	-	196
6 El Doshat	1xP, 2xM(71)	3	2	3	1	1	-	-	808	6,895	1,700	808	-	150
8 Argash(3)	2xP, 1xP(68)	3	-	3	1	1	1xJ, 1xR	-	-	3,095	318	-	-	217
9 Seres	1xP	1	1	2	-	-	-	-	550	1,030	-	550	-	78
10 El Murda	2xP	2	2	3	1	2	-	-	1,405	820	78	780	-	187
1 Merinli	2xP	2	-	2	1	1	1xJ	-	-	4,775	72	-	-	234
2 Degheim West(2)	2xP	2	1	2	1	1	-	-	40	3,350	50	60	-	149
3 Degheim South	2xP	2	2	3	2	-	1xJ	-	-	2,405	-	-	-	347
4 Alona Khar	1xP, 1xM(67)	2	2	3	1	-	1xP(68)	1	-	-	-	-	250	226
6 Village 26	2xP	2	2	2	1	1	1xP(67)	-	3,230	5,015	267	1,045	-	228
West Khalil	1xM(75)	1	1	1	1	1	-	-	760	1,960	-	535	-	78
Dal	2xM(76)	1	1	1	1	1	-	-	1,330	1,700	-	765	-	n.k.
Dakarsa(2)	-	-	-	-	-	-	-	-	-	-	-	-	-	150
3 Ficus East	2xP, 1xM(74)	3	1	3	1	1	1xJ	-	1,540	7,150	1,284	1,020	-	270
total: 26		59	31	59	21	21	19	3	37,483	90,515	14,270	15,443	2,200	5,020

Source: Dairi investigations

- March 1980. F = Fiat (all 1977), Pd = Ford, M = Massey, B = Belarus
 Currently not operating.
 Classified as Agricultural Coop. in Table A1.
 D/H/S = disc harrow seeder. Village 12 has 1 disc plough (not used); Village 7 has 1 seeder.
 C = Class, J = John Deere, R = Russian.
 D/H = disc harrowing. In 1979 only Villages 1, 2, 6 and 11 operated outside the
 Scheme (415 Feddans seedling).
 From Table A1.

At the level of individual cooperatives, some conclusions may however be drawn. In the case of Village 2, for example, it would seem probable that the cooperative is engaged in extensive ridging in the Nomad area, or elsewhere in the Halfayeen zone(1). Similarly, assuming all 20 feddans (including amlak) of members' landholding were ditched (Abu VI) once, some 750 feddans of ditching would have been done outside the cooperative zone. At the other end of the scale, and excluding the four cooperatives currently not functioning(2), the inability of many cooperatives to meet their members' maximum theoretical requirements is obvious. Villages 18, 21, 23, 24 and 4 clearly fall in this category. Finally, Village 6 (El Hassa) would appear to occupy a middle ground, with disc harrowing on at least 20 feddans of all members' land, two ridgings on almost all members' land, and considerable Abu VI ditching.

The Halfayeen cooperatives thus present considerable diversity in their capacity, scope of operations and ability to fulfill members' requirements.

3.3.2 Financial Analysis

3.3.2.1 General

The reconstructed balance sheets of eight cooperatives for various years in the period 1975/76 to 1978/79 are presented in Table 2(3). The societies were selected by the local office of the Ministry of Cooperation as representing the broadest range of financial situations. The quality of accounts presented is highly variable. In general, the more successful the cooperative, the better the presentation. In no case, however, was it at a level where comparative change in the society's financial situation could be readily understood by members.

Depreciation on farm machinery (in most cases, the principal fixed asset)(4) is straight-line 20 per cent per annum. It is clear, however, that prior to 1977 or 1978, depreciation policy was not strictly observed, and certain cooperatives have been obliged to post heavy accumulated depreciation to 1979.

- 1) On the assumption that the 1,900 feddans of its members' land under cotton and groundnuts (and excluding amlak land) are ridged three times, some 4,000 feddans of ridging would have been done outside the cooperative's area.
- 2) Villages, 8, 9, 22 and Dabarsa. (Villages 8 and 22 carried out some minor operations in 1979.)
- 3) In some cases, only two or three years were available, not always consecutive.
- 4) A number of the societies also operate small local flour mills.

The Nomads are, however, well aware of the advantages derived by the Halfawyeen from ownership of their own farm machinery (both in the sense of controlling operations on their own holdings, and in exploiting the uncontrolled(1) market for machine operations in the Nomad area).

Two areas, El Rataga (on the west of the Scheme area) and El Sufia have both accumulated funds from existing milling and consumer cooperative activity to make deposits against tractor purchase. The potential for cooperative farm machinery development in the Nomad area is discussed further below.

3.3 Halfawyeen Farm-Machinery Cooperatives

3.3.1 Existing Fleet, Equipment and Operations

Machinery

Table 1 supplies detailed information on currently (March 1980) operational machinery and implements, and areas covered (by type of operation). The Table shows that of the total 59 tractors operating, 40 (Fiat) began operating in mid-1977. Of the remainder, 12 were purchased before 1969, 7 during the period 1971-76; 32 per cent of the fleet is thus well over 4 years old, 20 per cent over 11 years old. Only 3 of the total 19 combines owned are currently operational(2). On available information, all combines would appear to be at the limit of their utility.

Implements

Although not shown in the Table, of the total 132 implements and trailers, some 58 were purchased prior to 1970. Of the total, 40 ridgers were acquired in mid-1977, at the time of the Fiat tractor purchase. Of the 22 cooperatives currently operating, only some 12 would appear to have an adequate set of implements corresponding to their serviceable tractors.

Operations

Little can be deduced from the information on area of operations as to the number of members serviced, as the allocation between crops, between Halfawyeen and Nomad areas, and between freehold and tenanted land is not known. The inability of the cooperatives to do combining for members is however readily apparent.

1) Except for wheat combining, as noted above.

2) Figures to be compared with those provided in Appraisal Report.

- Consumer and/or Women's Cooperatives(1)

Some eight consumer cooperatives exist in the Halfawyeen zone(2), with some one thousand total members, supplying basic commodities to the villages. These societies are not members of the Union. Average membership would appear to be in the 130 to 150 range.

3.2.2 Nomad Cooperatives

No farm machinery cooperatives exist in the Nomad Area. The dominant forms are flour-mills and consumer societies, most of which operate only at the level of the single village community(3). The causes of the relative backwardness of cooperative development relate to the broader disequilibrium between the two communities: lower literacy rates, absence of a tradition of contact with wider social (especially urban) groups, lack of access to elite influence groups (financial and political), a perhaps greater uncertainty among the Nomads about their survival chances in the Scheme(4), and absence of sizable cash resources at the onset of resettlement (as contrasted to the cash compensation received by the Halfawyeen). Additionally, both the heterogeneity of village tribal composition and the frequent dispersion of tenancy holdings over large areas are factors which have, in certain cases, militated against the social cohesiveness necessary for cooperation. An absence of positive commitment on the part of Government cooperative supervisors to promote cooperative development in the Nomad areas is also noted.

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- 1) Other types of cooperatives are listed in Table A1 (Appendix).
 - 2) Discrepancies exist between survey data and information gathered independently in the field as to membership and capital. Total share capital appears as LS 24,000 in the Survey Report, LS 11,000 from field investigation. Variations may be due to differences in classification.
 - 3) Eleven flour-mills, seven consumer cooperatives. The unregistered vegetable cooperative at El Sabaat operates for the benefit of Corporation employees. Several at least of the flour mills have suspended operations.
 - 4) Field interviewers confirm the current deep scepticism among Nomad tenants over their future in the Scheme. Absence of inputs (tractor services, seed), poor water control, etc., have created a situation where financial participation by Nomad groups in cooperative enterprises can only be expected to take place against a background of assured Scheme rehabilitation.

Cooperative Adviser would be responsible for coordination of all aspects of the training component, including training of cooperative Boards of Directors. Over five years, a total of 378 employees of all levels would be trained or retrained, of whom 296 would be newly recruited by the cooperatives and co-operative workshops.

As a result of the establishment and re-equipping of cooperatives, a major division of function would gradually develop between the cooperative farm-machinery sector and NHAPC, with the former assuming greater responsibility for secondary tillage, seeding and groundnut combining, and the Corporation concentrating increasingly on primary tillage using crawler tractors. Nevertheless, the proposed slow overall growth of the cooperative farm-machinery sector would mean that by Year 5 cooperative control of secondary tillage operations would be exercised on only some 58 per cent of the then total cultivated (double-ridged) area.

The increasing importance of the cooperative sector would justify its direct representation on the Board of NHAPC. To ensure, however, a balance in communal representation, the question of representation should be deferred until approximately Year 4, to enable cooperative organisation to develop more firmly in the Nomad area. Representation on the Board could then be accorded to the sector on a more equal communal footing.

The enlarged role of the private farm-machinery sector in recent years have been principally a reaction to declining Corporation performance and the inability of the cooperative sector to expand. With the re-equipment of the Corporation's machinery fleet, and the proposed expansion of the cooperative sector, it may be assumed that private sector operations will be largely confined to freehold land in the Halfawyeen area over the next five years. Should however the Corporation's performance decline again, or the cooperatives fail to expand fully into secondary tillage beyond Year 5, then it may be assumed that the private sector will once again respond to the situation.

3. The Cooperative Sector

3.1 Introduction

Chapter 3 draws on the findings and conclusions of the Sociological Survey of the cooperative sector, presented in Appendix 1(1). Additionally, however, it draws on information gathered independently during field investigation, to supplement the sociological data. The principal area of focus is the development of farm-machinery cooperatives.

-
- 1) Where occasional variations in data occur as between the main text and Appendix 1, the former should be taken as correct. Tables in the Appendix are numbered A1, A2, etc.

The Cooperative Development Programme would, over five years:

- promote the establishment of ten farm-machinery cooperatives in the Nomad area, providing them with the machinery, implements and facilities to enable them to undertake the secondary tillage aspects of the new cultivation methods (double ridging, etc.) proposed in ANNEXES 2 and 3
- similarly re-equip 25 cooperatives (22 operating, 3 currently not functioning) in the Halfawyeen zone
- provide a cooperative machine workshop and equipment at El Sabaat for the Nomad cooperative movement
- provide minor additional equipment to the Union workshop under construction at New Halfa
- provide assistance in vehicles and office equipment to the New Halfa Office of the Ministry of Cooperation, Commerce and Supply, so as to upgrade its performance
- provide and coordinate a comprehensive training programme for employees of existing and new cooperatives and cooperative workshops, covering farm-machinery operations and maintenance, bookkeeping, tractor management and store-keeping
- provide an internationally-recruited Cooperative Development Adviser for the life of the Project, to be attached jointly to the Development Planning Unit of NHAPC and the local office of the Ministry of Cooperation.

All financing for the Programme would be handled by the New Halfa Branch of the Agricultural Bank of Sudan, which would receive its funding for the Programme at the concessional rate of 6 per cent, to be on-lent to cooperatives for machinery and equipment purchases at 10 per cent. Farm-machinery investment requirements to be funded by the Bank over five years would total LS 3.3 million(1). The Bank would be responsible for all assessment of loan applications from the cooperative sector, assisted by the Cooperative Development Adviser. The ABS would also be required to evaluate and provide the current operating funds for the newly-established Nomad cooperatives and for a limited number of re-organised Halfawyeen societies.

The Programme's training component for bookkeepers and store-keepers would be operated by the ILO-supported Kassala Regional Training Centre, scheduled for construction during 1981; and by the Project training centre which would be constructed at the New Halfa Agricultural Secondary School (for cooperative tractor managers and workshop mechanics). Tractor operators would be trained in the cooperatives by the Tractor Managers. The

1) Included in estimated total Project farm-machinery investment requirements.

Of the 22 functioning societies, an estimated one third are in a financially strong position. The situation of another third may be expected to improve following a re-scheduling of debts and a reversion to standard rates of depreciation. The situation of a smaller number of societies indicates a need for stringent management overhaul. All societies plough back profits as revenue reserves.

The Cooperative Union, with its flour-mill enterprise at New Halfa, has played a vital role in securing financing for farm-machinery purchases by its member societies, and in ensuring the continued existence of the weakest societies. The Union has been soundly managed in recent years, with net profit for distribution increasing from LS 31,000 in 1977 to LS 95,000 in 1979. Net profit is consistently appropriated to revenue reserves. The Union has a strong record of repayment of credit for farm-machinery purchases. It is currently expanding and modernizing its farm-machinery workshop facilities at New Halfa, and planning an expansion of its flour-milling capacity. The proposed elimination of wheat from the Scheme Area should be counterbalanced by an increased allocation of imported wheat, to ensure that the current strong financial position of the Union is not undermined, thereby creating immediate repercussions on the Halfawyeen farm-machinery cooperatives.

In the Nomad area, no farm-machinery societies exist - a situation reflecting the generally disfavoured position of that community. There are, however, some eight consumer cooperatives founded over the last four years and 11 flour-mill (sorghum) societies of slightly older establishment. The latter would appear to be the more successful type of society. Principal constraints on the developments of farm-machinery cooperatives in the area have been lower educational levels and lack of access to external influence and funding. The Nomad community is, however, aware of the benefits accruing to the Halfawyeens from direct, cooperative control over land preparation operations, and finance has been collected in two areas to fund cooperative farm-machinery purchases. The leadership of the Nomad community and the management of NHAPC respond positively to the general concept of the promotion of farm-machinery cooperatives among the Nomads, *inter alia* as a means to redressing the gross imbalance between the two communities in the degree of self-management by tenants of farm operations.

A Scheme-wide programme of development of farm-machinery cooperatives is therefore proposed, justified by:

- the general desirability of extending tenants' self-management of farm operations
- the reasonable level of success already achieved by the Halfawyeen societies
- in the particular case of the Nomad area, the need to act as rapidly as possible in providing facilities to that community so as to redress the overall communal imbalance.

S U D A NNew Halfa Irrigation Rehabilitation ProjectPhase IICooperative and Private Farm Machinery Sectors1. Terms of Reference

Terms of Reference required the Consultant to review the financial, organizational and managerial situation of existing co-operatives in the Scheme Area with a view, broadly, to defining the future role of the cooperative sector in Scheme affairs. Attention was to be given to relations between the sector and other parties to Scheme organization (Corporation, Tenants' Union, private sector). On the basis of data on cooperative financial and organizational performance, proposals were to be formulated for the development of the cooperative sector, including investment requirements for infrastructure, facilities, etc. The impact of an expanded cooperative sector on NHAPC would be analysed.

2. Summary

The dominant form of cooperative organization in the Scheme Area is the farm-machinery cooperative, found exclusively in the Halfa-ween zone. Twenty-six such societies exist, of which 22 were functioning in early 1980, with a total membership of over 5,000 tenants. The dominance of the Halfaween in the cooperative sector is a reflection variously of earlier experience with cooperatives in Wadi Halfa, higher educational levels, and greater access to external sources of influence and financing.

The current operational farm-machinery fleet is 59 tractors and ridgers, with a lesser number of disc harrows, Abu Sita ditchers etc., and three combine harvesters. Thirty-two per cent of the tractor fleet is well over four years old. With the decline of the NHAPC tractor fleet in recent years, the relative importance of the farm-machinery cooperatives has increased. The cooperative tractor fleet is too light, however, to engage in other than light tillage operations. Halfaween cooperatives operate under agreement with the NHAPC for the preparation of the cotton area, on their members' wheat and groundnut hawashas, and also contract for land preparation in the Nomad area. Negligible work is carried on outside the Scheme.

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