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Aktenzeichen

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Titel

Berichte Gossner Service Team (GST), Zambia

Band

1

Laufzeit

1981 - 1984

Enthält

Jahresberichte aus Zambia: Jahresberichte GST 1980/1981 (dt) und 1982/83 (engl.) mit Berichten einzelner Mitglieder des GST zu ihren Spezialprojekten, z. B. ländliche Entwicklung, Irrigation, Rural Work and Dryland Farming, Health Services, Reparaturwer

Anlage:

el C. 56.

"Final Financial Statement
ist nicht veröffentlicht

• Bitte nachrichten wenn möglich

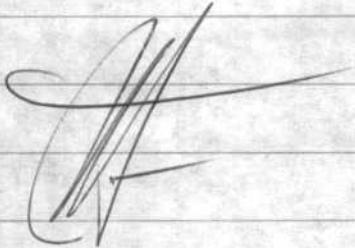
Bitte nicht veröffentlichen:

Die Namen der zitierten:

D. M. = David Mutinta

H.B.S. = Hansell Banda Sanguazi

S.C.K. = Shiloh Charles Komamlo



GWEMBE SOUTH DEVELOPMENT PROJECT

Final
Financial
Statement
Satwiinda
Irrigation
Scheme

Exzension

1982 + 1983

Hans Fuchs
Gossner Service Team
P.O. Box 11
Sinazefu, Zambia

Syatwiinda Irrigation Scheme Ex

1982 No	Salaries	allow. working building exp.	Tools	Fuel+oil	G.S.R	Others
4/10 232 salaries	125,46					
5/10 234 NPF	14,20					
2/11 261 salaries	1,454,64					
17/11 270 allow. mechanic						10,28
14/11 271 sub. allow. working.			128,-			
27/11 284 km allow. AA						20,5
204 sub. allow. supervisor			290,-			
204 salaries	1,084,32					
22/12 305 salaries	514,08					
247 sub. allow. mech. ing.		176,-				
27/12 220 " " " "		76,-				
24/12 200 cleaning House						7,
24/1 4 sub. allow. supervisor		120,-				
1982 total	3202,70	810,-	-	-	-	37,90

1982						
24/1 5 salaries		103,68				
8 " "		514,08				
17/2 21 sub. allow. working.			60,-			
2/2 31 " " " "			60,-			
32 overtime working.		184,-				
25/2 25 sub. allow. " "			120,-			
26 salaries		80,-				
4/3 38 "		514,08				
45 tools				111,55		
47 sub. allow. supervisor			20,-			
48 " " working.			40,-			
49 overtime "		102,85				
10/1 53 G.S.R					6,000,-	
56 salaries		100,80				
25/1 66 tools			51,20			
72 km allow. AA						25,52
73 sub. allow. working.			96,55			
29/2 77 G.S.R					1722,-	
24/2 78 salaries		554,60				
22/4 95 Diesel				2,682,12		
11/5 98 oil				78,-		
101 medicine						12,15
102 salaries		486,76				
11/5 108 Diesel a. oil				237,-		
25/5 107 allow. mechanic						20,-

sion - final financial statement 1982 / 1983

		allow.	tools	fuel+oil	GST	others
		Salaries	material building sup			
1983						
	carry over '83	2.641,25	356,55	162,75	2.777,12	722,-
31/5/121 Salaries		585,36				
3/6/120 wine				262,50		
151 oil					88,-	
14/6/121 tools					32,90	
172 wine					195,-	
173 grace sum					41,90	
169 salaries		632,16				
2/184 Diesel				2-	2.552,25	
26/7/120 tools					48,-	
27/7/124 "					48,-	
115 salaries		726,88				
116 NPF		74,80				
212 GST						5.000,-
3/8/200 tools				26,65		
119 202 Salaries		768,26				
24/9 214 GST						2.320,70
219 salaries		768,24				
29/9 224 GST						6.000,-
7/11/251 salaries		753,48				
252 tools				107,69		
26/11/262 NPF		14,20				
9/12/271 Salaries		88,-				
274 "		472,92				
10/279 Compensation						20,-
16/12/281 salaries		767,76				
22/12/288 GST					2.777,95	
289 "					1.582,25	
290 repair						2365,-
26/12/292 salaries		700,-				
300 tools				175,-		
1983 Total		9.014,29	356,55	1.100,79	5.640,37	30.613,- 2.622,02
1982 Total: 4.050,60		3.202,70	810,-	-	-	37,90
1983 Total: 4.9342,02		9.014,29	356,55	1.100,79	5.640,37	30.613,- 2.622,02
Total 1982/83: 53392,62		12.216,99	1.166,55	1.100,79	5.640,37	30.613,- 2.659,93

p.t.o.

Compilation

	salaries	allow.	feels	fuel+oil	GST	others
<u>Statement 1982</u>						
salaries + feels	3.858,26					
GST					30.612,-	
allowances		810,-				
	3.858,26	810,-	-	-	30.612,-	-
<u>Statement 1983</u>						
clearing of land	1.177,70		520,-	1.880,-		
fencing	3.411,94		404,22			
dam construction	2.274,64		90,88	1.880,-		
canals	2.274,64		181,78	1.880,37		
allowances		995,52				
	9.098,52	995,52	1.116,88	5.640,37	-	-
<u>Conclusion (21. 12. 1983)</u>						
<u>1982</u>						
salaries + others	3.202,70					37,90
allowances		810,-				
1982 total	4.050,60	3.202,70	810,-	-	-	37,90
<u>1983</u>						
clearing of land	1.177,70		520,-	1.880,-		
fencing	3.327,71		404,22			
dam	2.274,64		90,88	1.880,-		
canals	2.274,64		85,69	1.880,37		67,67
main canal			175,-		10.612,-	
allowances		356,55				
1983 total	49.347,03	9.014,29	356,55	1.100,77	5.640,37	20.612,-
						2.622,03
1982	4.050,60	3.202,70	810,-	-	-	37,90
1983	49.347,03	9.014,29	356,55	1.100,77	5.640,37	20.612,-
	53.397,63	12.216,99	1.166,55	1.100,77	5.640,37	20.612,-
						2.659,93

Kundindala, 12. Jan. 1984

Hans Fuchs
Gossner Service Team
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H A N S F U C H S

G O S S N E R S E R V I C E T E A M

GWEMBE SOUTH DEVELOPMENT PROJECT

Report on my work
1981 - 1982 - 1983
within the Gwembe Valley - Zambia
at

Syatwiinda Irrigation Scheme
and

Dryland Farming within
Senior Chief Mwemba's Area

This short report should describe the experience I got during my time as a member of the Gossner Service Team (GST) within the Gwembe South Development Project (GSDP) in Zambia. It should cover Syatwiinda Irrigation Scheme (Irrigation/Scheme), Syatwiinda Irrigation Scheme Extension (Extension), Dryland Farming in Sen. Chief Mwemba's area (DLF) and all informations for my successor.

All datas and facts are, if nothing different is mentioned, available in the files of the GSDP or GST.

This report is intended ONLY for the Gossner Mission - Berlin, the Gossner Service Team - Zambia and Gwembe South Development Project - officers!

Kanchindu, 29. January 1984

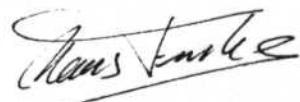

Hans Fuchs

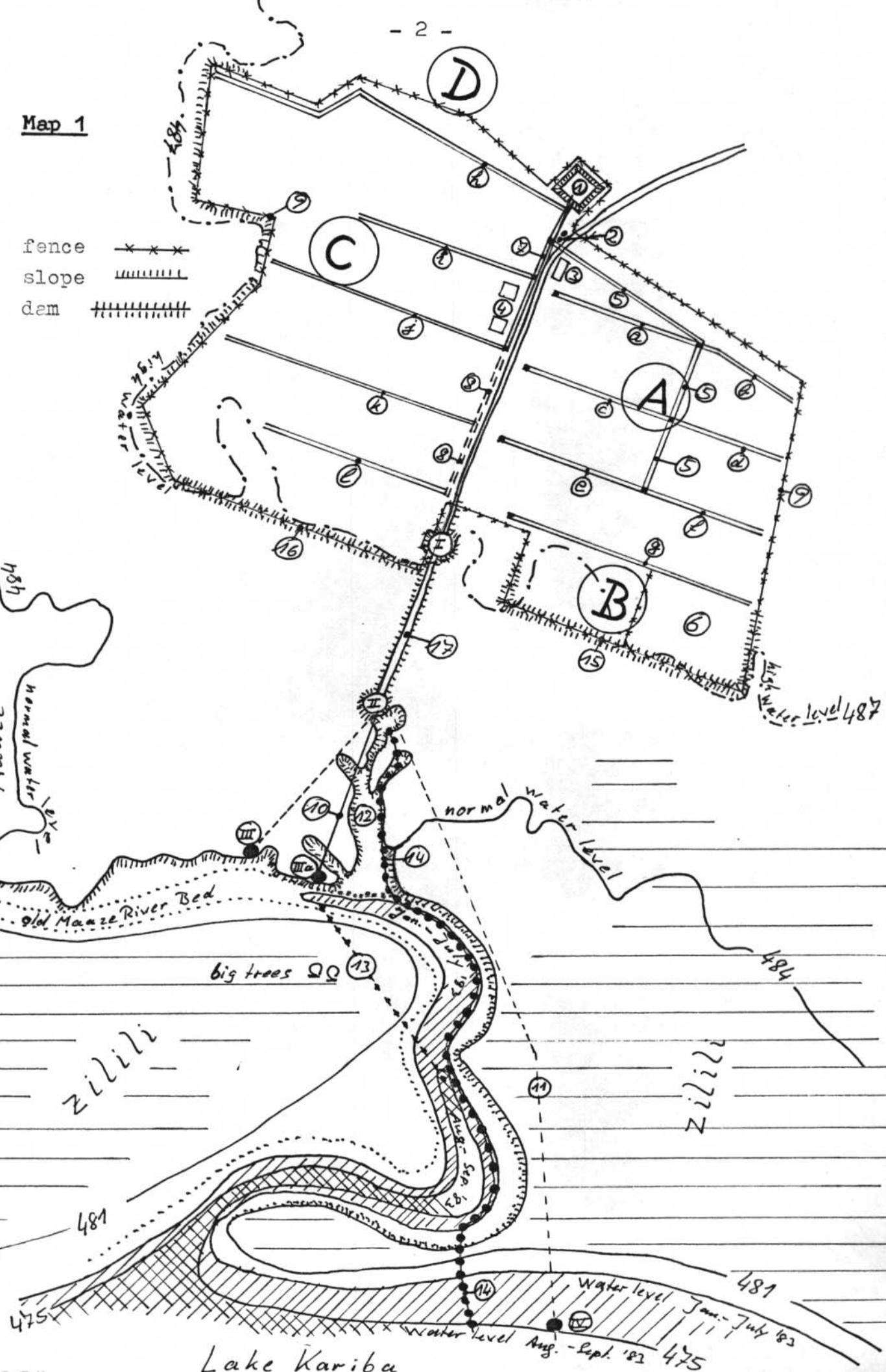
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Map 1

fence × × ×
slope └└└└└
dam ┌─┐─┐─┐

- 2 -



Explanation of map 1

A old scheme - 22 - with:

1. reservoir
2. dieselstore
3. shelter
4. houses
5. main canal with:
a - f irrigation canals

B reclaimed area - 7 ha - with:

6. research area - 4 ha - and
g irrigation canal

C extension - 30 ha - with:

7. main canal - completed
8. main canal - planned and
h - l irrigation canals under construction

D planned extension area, 3. stage

9. fence
10. pipeline
11. pipeline proposed for emergency cases but not economical
12. channel to main pumping station II
13. canal digged by the farmers in July '83 to come to the deeper water, failure!
14. proposed canal, promised by Mr. Schäfer
15. dyke to reclaim area B
16. dyke for extension C
17. dyke between pumping station I and II

I first pumping station

II second (main) pumping station with a permanent house

III third pumping station

IIIa new third pumping station

IV nearest point of the deep water, 1.200 m from II

Beginning of 1981 the lake reached the high water level, about 487,5 m ASL. During the year it sunk down to the normal level of about 484,3 m ASL. The channel (12) to the main pumping station (II) could supply the pump with water up to Aug.'82.

Pumping station III became dry in Jan.'83.

Pumping station IIIa (new) became dry in Aug.'83.

The whole area between 484 m ASL and 481 m ASL is used as "ZILILI".

I. SYATWIINDA IRRIGATION SCHEME

When I took over Syatwiinda Irrigation Scheme in April 1981, the Scheme had already a long history as everybody knows. In this report I shall not describe the whole story. Only a few sentences to the past:

The first aim of the GST in Gwembe South District was to erect Syatwiinda Pilot Irrigation Scheme. Excerpt out of: "Syatwiinda Pilot Project - Report for 1970 by Mr. J.G. van Keulen, Project Officer, Gossner Service Team.":

"On the invitation of the Presidents Office, a study was prepared on the possibilities of the development in the Gwembe Valley. In this study it was recommended, that irrigation could be a possibility.

The Central Government provides the funds and the Technical Planning Committee is responsible for all technical aspects. The Gossner Mission (Berlin West), known in Zambia as Gossner Service Team, provides the technical staff who will work together with their Zambian counterparts.

The project started in June 1970 on bush level.

.... The aim of the project is to learn whether in the Gwembe Valley the practice of dry land subsistence farming could be changed into commercial irrigation farming regarding physical and human conditions. Experience will be gained on furrow irrigation on mopane land and under the special climate of the valley."

1. What I found when I undertook Syatwiinda Irrigation Scheme

I arrived in Zambia already in October 1980 and visited the Scheme frequently with my predecessor Mr. I.J. Krisifoe. My main job during this time until I took over the whole responsibility for the Scheme was the work at the new pump, e.g. erecting the pumping house, assembling the piping and the electrical installation of the Diesel engine.

When Mr. Krisifoe left in April 1981 I was well prepared to take over. The condition of the Scheme in April 1981:

a) Irrigation Scheme lay out

In all reports I read before, I got the impression Syatwiinda Irrigation Scheme covers about 32 ha irrigated land. But in reality the Scheme contains 110 plots of each 0,2 ha, all together 22 ha. (plus 1 ha irrigated land within the 4 ha of the Mochipapa

Research Station). The fields are irrigated through 4 channels. The channels a,c,e and g (map 1) can only be watered through the pipeline, the others (b,d *and* f) only through the main channel (5) from the reservoir. The plot size is about 133,5 m x 15 m (2.000 m²) with 0,5 % slope.

b) Crops

In April '81 only 20 plots were grown with rice. 65 plots were under preparation for okra, tomato and onion. The rest of the 110 plots were not used. The number of active farmers was recorded with 60.

c) Pump Unit

In 1979 money for a new pump unit was donated by Gossner Mission - West Berlin (GM). End of 1979 the pump unit was bought and a permanent building for this pump was led off at pumping station II (map 1). End of Jan. '81 this building was completed. But still the pump was not yet ready. It could be started in March '81. Up to this time the old pump had to deliver all the water required.

d) Syatwiinda Farmers Executive Committee (FEC)

The FEC was working under the leadership of the officer i/c from the GST/GSDP. All decisions were taken or approved by him. Far reaching decisions even needed the approval of the GSDP-secretary or the GSDP-staff-meeting (e.g. one farmer acted contrary the agreement and the instructions given by the FEC. The FEC wanted to expel him and wrote a letter to the GSDP-secretary. But the Secretary did not agree, even after this farmer had cut down bananas from an other plot. The FEC could not expel him. They complained very **angry** to me.)

e) Marketing

Some years ago the catchword was created: "Marketing Problem", not knowing that there is a difference between POLICY OF SALES (= marketing) and market conditions or transport. For every farmer in Europe it is clear that a farmer has to produce for

the market and not: the market has to buy what the farmer is growing. Also in the GDI - Report it was stated, that the valley is too far from the market places to produce vegetables. (GDI - Report: Report on the development possibilities of Gwembe South Region - part C - page 27: "Every sort of vegetable that can be grown within Gwembe South can also be grown on the Plateau with the same production technique. Thus the transport situation enters the argument. Therefore, vegetable production in Gwembe South should not be taken up above the ongoing level of local production on individual small scale farms and perhaps a few small-scale irrigation projects.") Syatwiinda Irrigation Scheme was producing e.g. tomatoes at a time when all over Zambia tomatoes were plenty. As long as Zamhort was buying them it was only the problem of Zamhort. But when Zamhort closed down the farmers met the problems of selling their tomatoes.

2. 1981

When I started in Syatwiinda Irrigation Scheme I gave all the responsibility for the day to day work to the FEC and the administration to the Agricultural Adviser (AA) i/c - Mr. David Mutinta - and I promised to back all their decisions in the GSDP-staff-meeting. My object was to get the internal work at the Scheme independent from the GSDP.

The system of giving private or GST - loans to the farmers, buying seeds and fertilizer for them and giving free private transport for their produce I stopped. The farmers should not be dependent on me. This was a very hard but very useful gaining of experience for the farmers, specially when the tomatoe harvest began and Zamhort closed down. During the year the farmers learned to organize themselves and to hire transport. Very often they loaded a big lorry and could only sell a few kg of their tomatoes. Sometimes they had to unload (in the ditch) 2 or more tons. The fee for the lorry VSP always deducted straight from their sales. (e.g. Once the farmers tried to sell 3.500 kg tomatoes in Livingstone. But they could only sell for K 400. The fee for the lorry was 320 K. So the income was only K 80. In Syatwiinda every farmer got for his delivered tomatoes 2,3 Ngwee/kg % deductions for waterfees.) To avoid quarrels, the group of salesmen, going with the lorry to sell the tomatoes, changed every time. So all farmers

got the experience how difficult or impossible it is to sell tomatoes on a market full of tomatoes.

During this time, Mr. Mutinta and me were very busy to explain - very often in individual talks - the system of marketing: the farmer has to produce for the available marked (lokal market and Maamba) in order to meet always the demands of the customers. It was very difficult because in the years before all risks were taken away from the farmers. Zamhort bought what ever they produced straight from the field (and made the losses) and if there was still a problem the GSDP or the GST gave free transport. In the beginning the farmers struggled against but later they accepted the idea.

Since the new pump was working sufficient water was supplied to the fields. The lake level was high enough till the end of the year. The harvest the farmers got in 1981 was the highest they ever got. They harvested (sold) about 14.000 kg (12.480 kg) rice, 15.600 kg (12.600 kg) okra, 60.000 kg (41.100 kg) tomatoes, 5.500 kg (3.400 kg) onions, 1.000 kg (520 kg) potatoes and 1.500 kg (150 kg) others, all together nearly 100 tons (71 tons).

In October and November farmers prepared for rice. During my leave (Dec.) the lake level sunk down. The canal to the pumping station was closed by mud. The old pump was still at the GSDP-workshop at Nkandabbwe for repair. So there was no water till I came back from leave.

3. 1982

In Jan.'82 the old pump was brought to the pumping station III. End of Jan. the pump started but the out put was not sufficient and very often it stopped because of minor break downs. Beginning of Febr. we decided to clean the canal to the permanent pumping station. The farmers opposed and argued that it is impossible to shovel mud. We employed 20 workers and after two weeks we could start the new pump at the main pumping station again. But now it was too late for the rice. Most of the planted rice was dry, only a few farmers could harvest rice (2 ha - 3,2 tons).

Early in the year nearly all farmers planted okra (68 farmers - 10,4 ha) and only a few tomatoes (0,8 ha) were planted instead

of the 4 - 6 ha during the last years. All okra was sold straight from the field to the customers, sometimes from Lusaka and Kabwe. Nothing remained on the fields. The farmers were happy because they had seen that the so-called "marketing problem" is depending on the crops they are growing.

But the total harvest was lower (37,7 tons) than 1981. First because okra does not reach the high yield of the tomatoes and second the lake level went on sinking down. Mr. Mutinta and some active farmers organized the farmers to keep the canal clean and to deepen it. Sometimes I found up to 80 farmers (men and women) in the marsh shoveling mud. Till August '82 the farmers managed to keep step of the sinking lake level. In August the suction head became ~~too~~ high so that the suction pipe was sucked flat. Beginning of Aug. the old pump was connected again to pump from the pumping station III. But the out put was very poor. During August the new pump was reconstructed to a movable pump. Beginning of September we could replace the old pump by the new one at the pumping station III. Conditioned by the 200 m longer distance and the 2 m lower lake level the out put was only about 66 % of the previous out put of this pump. All this affected the harvest 1982 badly.

Waiting for the rainy season '82/'83 farmers prepared the fields for rice and bought 150 kg rice-seeds from Zamseed - Lusaka. Within all planted rice nurseries there were enough rice plants for 32 ha, 10 ha more than required. But no rain came and the lake continued sinking down. Caused by the low pump out put and the dry and hot weather rice could not be transplanted. End of Dec. '82 the water at pumping station III became shallow.

4. 1983

About 100 m north of pumping station III we plumbed deep water with connection to the lake. Beginning Jan. '83 farmers (men and women) digged a new ditch from the main pumping station (II) to the lake shore, digged out the pipeline from pumping station II to pumping station III and shifted the pipes to the new ditch. Middle of Jan. '83 the new pump started pumping at the new pumping station IIIa. Again it was ~~too~~ late for most of the rice. Only 2,3 ha were transplanted and the harvest was 2 tons. From the new

pumping station IIIa the pump pumped until the end of June '83 and after some digging till the end of July '83.

For all that early in the year farmers started working in the Scheme very actively. 95 % of all farmers (76 out of 80) planted okra, about 14,2 ha (65 % of the land). With 18 ha land under cultivation Syatwiinda Irrigation Scheme reached the highest percentage (82 %) after the year 1980 (19,6 ha = 89 %). If we would not have had the cut in July caused by the low water level of Lake Kariba the utilization of the Scheme (about 53 %) would have been the highest in the whole history of Syatwiinda Irrigation Scheme at all (see table 4). But still the harvest of okra was about 14 tons, rice 2 tons and tomatoes, onions and others 4,6 tons. Beginning from May the farmers were also busy cultivating the land at the lake shore, following their old method of Zilili, and had always enough to eat, sometimes also to sell e.g. okra, green maize and water melons (see map 1 - Zilili).

5. Waterfees

Since some years the farmers had to pay a nominal water fee of K 18 per plot (0,2 ha). During the last years it became difficult to get enough funds from the GRZ to meet the running costs of the Scheme like fuel, oil etc. So the idea was developed: farmers should pay the whole running costs themselves. In oct. '81 the GSDP-staffmeeting decided that the farmers of all Irrigation Schemes (Syatwiinda Irrigation Scheme, Boleya Malima Irrigation Scheme, Nkandabbwe Irrigation Scheme) have to pay the whole water costs. After some meetings with the chiefs and the FECs all farmers of the 3 Schemes met at Syatwiinda Irrigation Scheme. After long discussions Syatwiinda farmers agreed. The water fees should be deducted from the rice harvest, about K 95 per 0,2 ha per year. But during the following 2 years there was each year a very poor availability of water in the hot season and therefore no rice harvest.

Because of the low lake level the pump could not deliver the calculated volume. Therefore and conditioned by the higher prices the running costs for Syatwiinda Irrigation Scheme rised from K 95 in 1981 to K 115 in 1982 and K 210 in 1983. No farmer could pay these costs.

6. Rainfall and Lake Kariba Level 1972 - 1983

The rainfall in Gwembe South varied during the last decade from 483 mm ('81/'82) to 1827 mm ('77/'78). The 25-years-average for Kanchindu/Syatwiinda area is 612 mm (Thayer Scudder - Kariba Studies Volume II - The Ecology of the Gwembe Tonga). But even if the amount of rain reaches the average the distribution during the rainy season is very different:

Table 1

	July	Aug	Sep	Oct.	Nov.	Dec.	Jan.	Febr.	March	April	May	June
72/73	-	-	-	15	51	10	176	237	21	21	-	-
73/74	-	-	-	-	81	303	477	511	100	47	-	-
74/75	-	-	-	-	83	292	226	260	100	7	-	-
76/77	-	-	2	3	8	104	49	92	292	-	-	-
77/78	9	-	-	-	57	486	275	494	390	103	-	13
78/79	6	-	-	17	24	373	99	111	199	5	-	-
79/80	-	-	-	20	52	186	46	50	265	13	-	-
80/81	-	-	-	-	75	130	235	579	114	24	-	-
81/82	-	-	-	2	91	43	215	78	42	3	9	-
82/83	-	-	-	26	43	66	396	101	12	8	-	-
83/84	2	-	-	18	10	296	121	-	-	-	-	-
25-years average	-	1	2	8	44	146	159	130	107	13	2	-

The rainy season '80/'81 started middle of Nov. and it was cloudy till middle of March. Nearly every week were some rainy days (except 1. and 2. week of Dec.). For the rice within the Scheme it was very good.

The season '81/'82 had very poor rainfall, always with some dry weeks in between. The weather was very hot, the average temperature was 3,5°C higher than in the year before. The pump capacity is calculated on rainfall during the rice growing season in Dec., Jan. and Febr. Since it was not enough rain the pump could not manage to pump the required water.

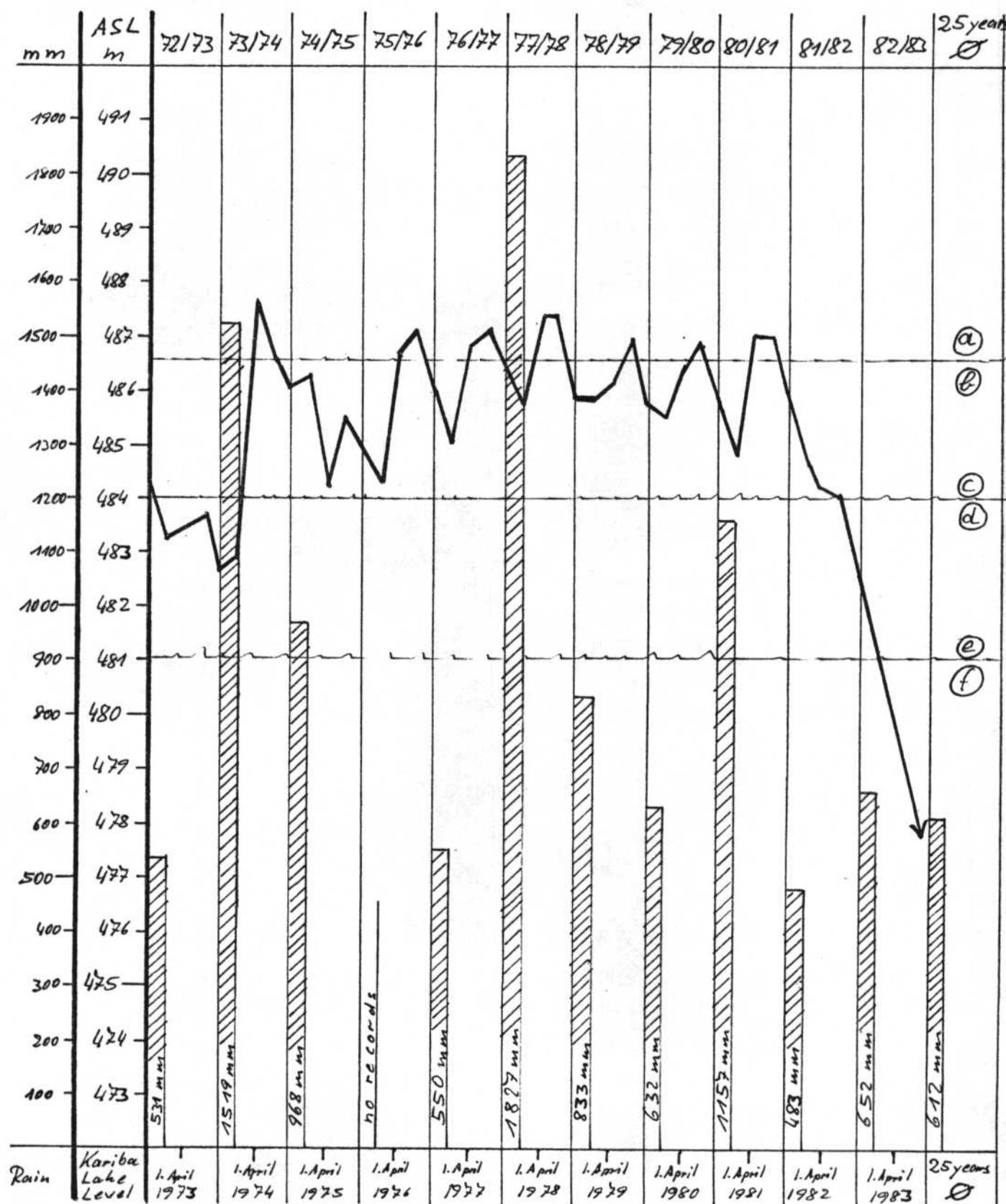
In the season '82/'83 the distribution was very bad. Only middle of Jan. and first week of Febr. we had sufficient rain. It was hot like the season before.

On table 2 (next page) one can see that there is no connection between the rains in the Gwembe Valley and the level of Lake Kariba.

Since 1974 the pumping station III was not used any more and it was trampled down by the hippopotamus. In Aug.'82 we had to bring the pump to this pumping station, later to the new station IIIa

Table 2

Rainfall and Lake level at Syatwiinda



a) Water at pumping station I
 c) Water at pumping station II
 e) Water at pumping station III/IIIa

- b) NO water at station I
 - d) NO water at station II
 - f) NO water at station III/IIIa

which had 2 m deeper water. During the rainy season '82/'83 River Maaze filled this deep canal completely with sand. Due to the slow sinking water after the rainy season we were able to pump until July and after some digging till August 1983. Then the water sunk very fast. Now the next deep water is about 1.200 m from the main pumping station away (IV).

The coincidence of the poor rainy seasons '81/'82 and '82/'83 and the low lake level disturbed the development of the Scheme very much.

7. Utilization of Syatwiinda Irrigation Scheme since 1976

(Utilization in this report means how the land is used during the whole year, e.g. 11 ha of the Scheme is planted with crop X; crop X requires the ground 6 monthes;
i.e. 11 ha (50 % of the Scheme) x 6 monthes (50 % of the year)
= 25 % utilization of the whole Scheme during the whole year.)

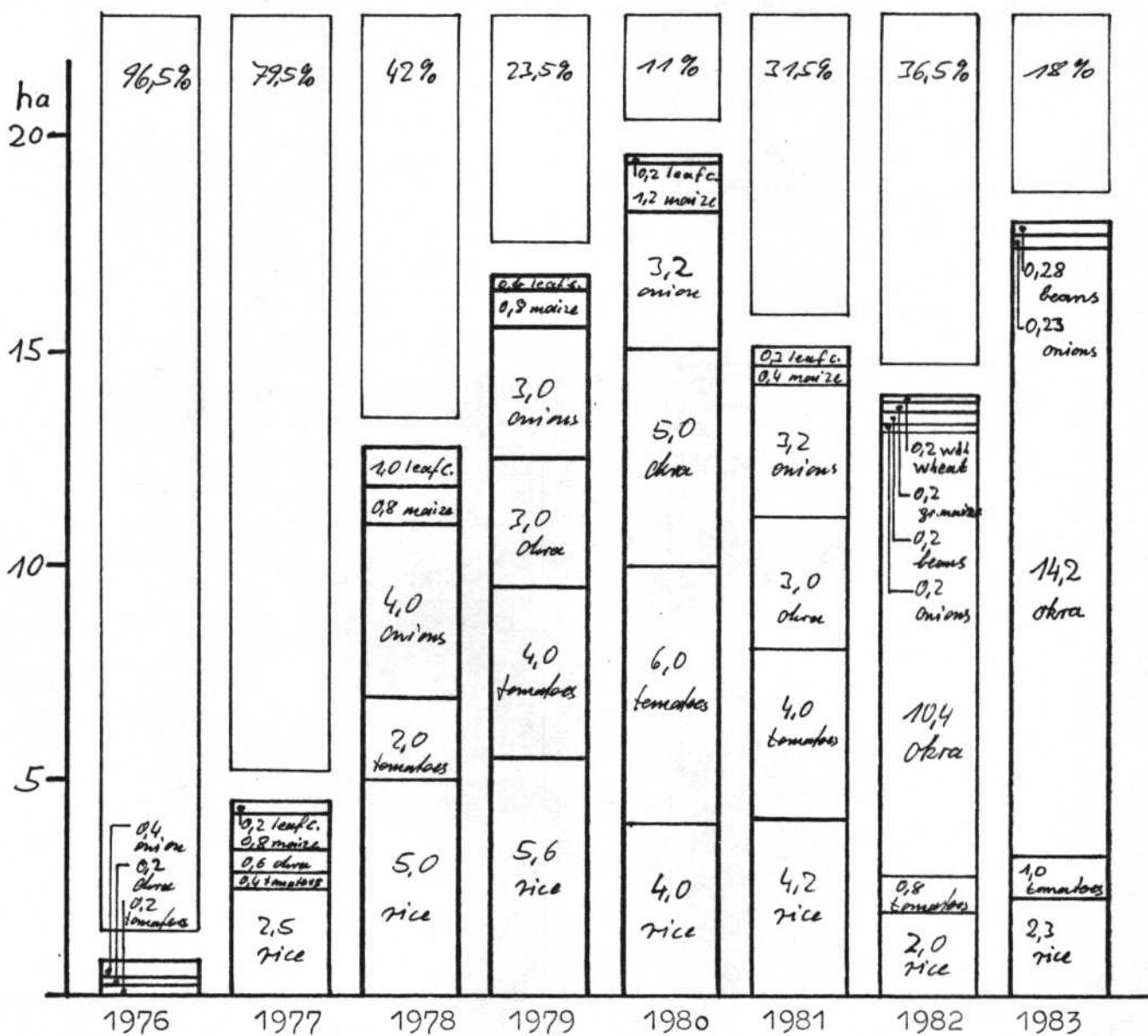
1976 civil servants (AAs) took over the recording of all datas of Syatwiinda Irrigation Scheme. From the years before no datas are available.

From 1976 to 1980 the cultivated area, the yields and the utilization rised. During 1981 Zamhort closed down and farmers had difficulties in selling their crops. So they stopped late in the year to plant more fields. The planted area and the utilization droped down. But already in 1982 the utilization of the shrinked area rised again. This is the consequence of expelling some lazy farmers and the fantastic co-operation of all active farmers to canalize water to the pump. This strengthened the motivation of working on the fields. Even after the very poor rice harvest in 1983 farmers were very active on the fields, always watching the lake level and the pump. About 30 % more land was under cultivation than the year before and the utilization of this land was the highest Syatwiinda has ever seen (53 %). It is a great pity that the farmers could not harvest everything what they had grown. (see table 3 and 4)

8. Development

During my time as the GST/GSDP man i/c some changes came off. The farmers and the FEC were given more responsibility. Even if it was difficult in the beginning, at the end, when they had managed the

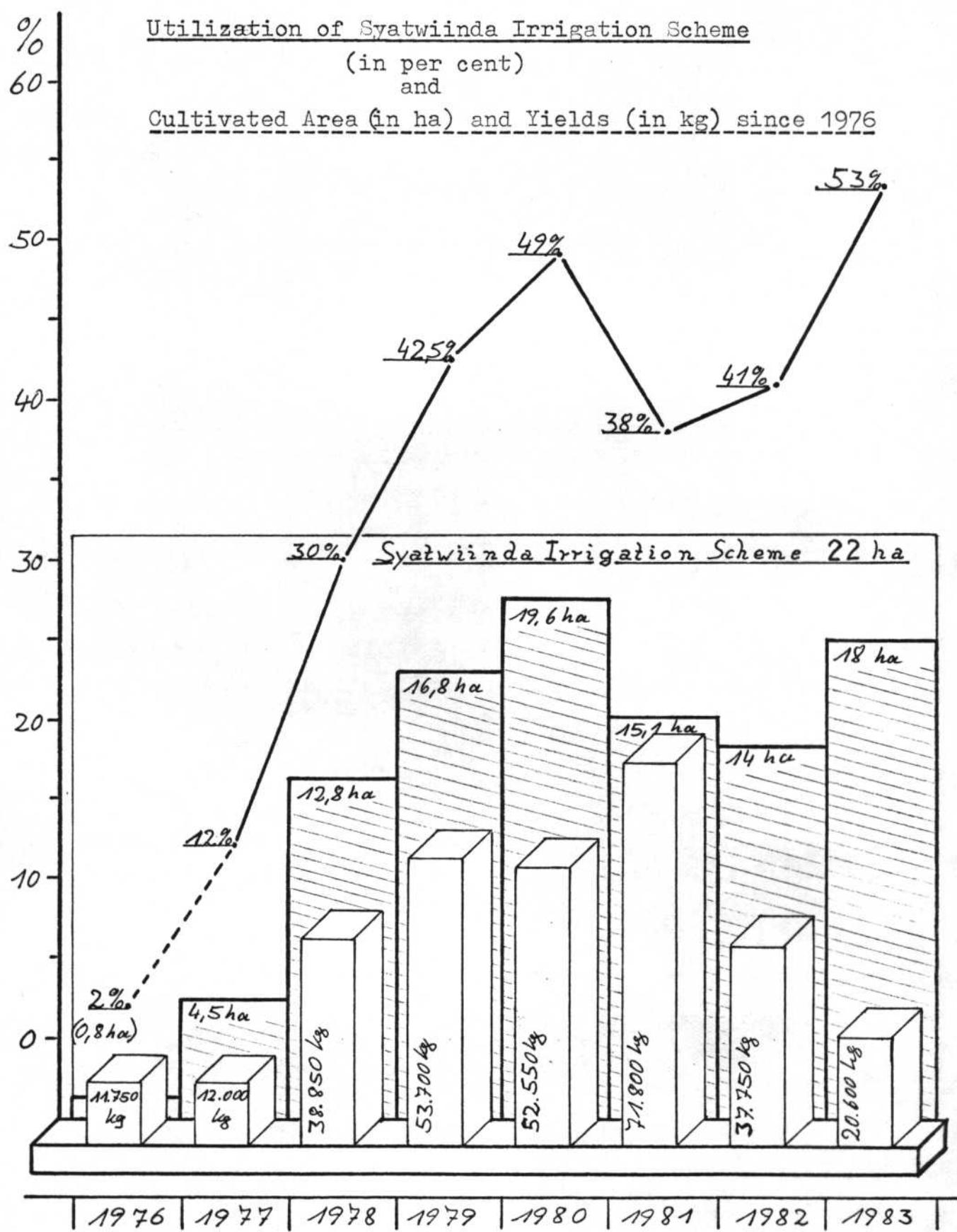
Table 3



- Developing of the use of the Irrigation Scheme, area, datas in per cent = percentage of the not used land within the Scheme.
- Developing of the crops grown within Syatwiinda Irrigation Scheme.

problem they were happy and proud and cheered on to start on the next problem. So the problem of selling tomatoes in 1981 has helped the farmers to come together and to see themselves as one group. Once a farmer was complaining to me about the "marketing problems" he had with his tomatoes. An other farmer stopped him: "Why are you telling this to BaFuchsi? - This is not his problem. This is your problem and your profit!" And he added: "Here in Zambia marketing is something special! - We have to grow what we can sell straight from the field. We should not grow what we have to transport to far places." (H.B.S.)

Table 4



The figures for 1976 are not very clear.

Already the next step of the FEC was to expel the lazy farmers or to take a part of their fields to give it to new or very active farmers.

The farmers were happy to decide always themselves where to put the pump or when to pump. One farmer (literal): "We're very happy that we're now responsible for our things. - Mr. Krisifoe would never have allowed us to move the pump - e.g. - during his absence. Now we're doing it and the farmers are happy. Also their wives are coming to help!" (D.M.)

When the lake was rising early 1981 and the water was reaching the floor of the pumping house two farmers took sand and cement and concrete blocks and walled up the door and an other opening for 3 layers. Just when I came they finished. They said: "This is our pump! We have to watch it. If the water comes higher we'll put the pump on a trestle!" (S.C.K.) But the water did not come higher.

When we had to clean the canal (12) the first time the farmers were doubtful. A full-grown man sunk in up to his chest. Who should shovel this mud? So I had to employ and to pay some workers. After the farmers had seen that it is possible, they did it themselves and managed to keep the water running for 7 months. Later they shifted the pipe to change to pumping station IIIa.

In July '83 when pumping station IIIa became dry, farmers were digging a channel (13) to the deeper water. But everyone could see that this job was hopeless. Water was running away. I asked one farmer and he said: "Don't worry, we know, we'll never reach the water. But we'll go on with digging till the Steering Committee has held its meeting here at Syatwiinda (5.8.'83). These people should see that we're working. After this we'll stop!" (S.C.K.)

In some meetings during 1982 all farmers were told to plant rice on all their plots in order to pay the waterfees from the harvest. also in individual talks to nearly each farmer we explained the necessity to grow rice to get enough money to buy fuel and oil and to pay the engine operators. All agreed. The result: rice nurseries for about 35 ha rice!

So, the farmers were really willing to take over a lot of responsibility. Only some uncommon events prevented the success.

Middle of 1983 the situation changed. Farmers were told IRDP (=money) is coming. Still until my annual leave farmers were digging channels to get water to the pump. When I came back they told me: "Mr Schäfer is bringing us big machines from Maamba Mine to dig the channel!" And they added very reproachful: "Free of charge!" - (I could see in all their faces the bitter reproach: "You left us digging for nearly 20 months and we lost 2 rice harvests. This new man has just arrived and he brings us already big machines to dig a permanent channel - free of charge!")

- I knew from many people that it is impossible to go with heavy machinery on this groundless ground. Also in Febr. '83 one caterpillar got stuck near pumping station II.
- The channel was planned to follow the Maaze river bed (14). According to my experiences from Jan. '83 (see Maaze filled the deep canal ... page 12), Maaze would have filled it within a few weeks of heavy rain.
- If they would have managed to dig this channel, there would have been fuel for only one month.
- All farmers were very busy in their Zilili - gardens. I feared they stop now and wait for the machines. But fortunately they went on working in their gardens.

The machines never came. But now I am very doubtful whether farmers will ever start again to shovel when it is needed. At first they will go and ask and wait for machines.

9. Future

My main aims for Syatwiinda Irrigation Scheme were:

- to back the AA i/c, the FEC and the farmers
- to screen the Scheme against interferences from outside upsetting the development to independence
- to give the farmers the feeling that they are one group, depending on each other
- to teach to grow the right crop at the right time to meet always the demands of the local market.

In all this I was successful at least partly. Only the interference from Mr. Schäfer gave me some headache. But a few remarks of some farmers show that the farmers got some experiences with expatriates. They are not early to convince. They wait and watch. One farmer (literal): "We know Mr. Schäfer. When he was here first time, he had no experience with irrigation and our soil. We had to teach him but he didn't learn. Now he is too old." (S.C.K.) The Tonga know how they have to handle whom. One farmer about the past teams (literal): "These people were very good. We only had to say: 'We are

suffering', than they did everything for us, e.g. driving with tomatoes up to Livingstone or Lusaka with their private cars. But now you (GST '80/'83), you are too clever (to be sold by us). And this is good, because we have to learn to do without you!" (H.B.S.) - And a talk between me and one farmer - I:"Why don't farmers work more in the Irrigation?" - Farmer:"You know, we're Tonga, we're rich! - If you want to see poor people, go to the Bemba. They are poor, they don't have cattle, They have to work until they die. - Not the Tonga! When I'll stop working my children will work for me. We Tonga, we're rich! You'll never get us working more!" - I:"But then it's better I go home!" - Farmer: "No, no! Stay! - We need your ideas, teach us everything you know! We'll see what we can use!"

The Tonga are very sturdy in their psychical constitution. They are not easy to overthrow. They are stubborn; to newcomers they are always very friendly and say:"Yes, yes!", but they continue to go their way. The irrigation farmers have seen the benefit out of irrigation farming, so they will do everything possible to go on with irrigation!

Our duty will be to help and to steer and to prevent interferences or exploitation from outside.

10. Workplan for the next five years

The following workplan was prepared by the AA i/c Syatwiinda Irrigation Scheme and me, 15.4.1982. It was agreed upon in the GSDP-staffmeeting, held on 21.4.1982

Workplan:

In the next future there are 3 main tasks to do in Syatwiinda Irrigation Scheme:

1. Extension of the Scheme
2. The so-called "Marketing-Problems"
3. Management of the Scheme

1. Syatwiinda Irrigation Scheme Extension is planned to be done during the next 3 years (1982 - '83 - '84).

The extension should be done step by step so that farmers and FEC can follow and can be fully involved in the process. The extension should not become a separate project, it should be fully integrated in the existing Syatwiinda Irrigation Scheme.

2. The so-called "Marketing-Problems" of the irrigation Schemes in the Gwembe South District are not real marketing problems. The problem is to plant the right crop at the right time, so that every farmer can sell throughout the whole year different fruits on local markets.

This should be possible with a crop-plan like the following one:
2/3 or 3/4 of the year: rice
rest of the year: vegetables

If this fruits are spread over the whole year according to the demands of the market no transport is needed and no problem will arise.

In the rainy season rice should be the main crop. The Scheme incl. the extension comprises 45 ha. If 40 ha are planted with rice and harvested twice (ratoon) the yield of paddy rice can come up to 350 tons (or 230 tons shelled rice). This quantity can substitute approximately 570 tons of mealie-meal.

3. Management of Syatwiinda Irrigation Scheme should come completely under the FEC with the assistance of the AA. The Farmers should pay the full running costs. The GRZ should help in case of renewing pump units, pipe lines, reservoirs and other very expensive facilities. For the upkeep of the engines it should be possible to get an agreement for maintenance with the Maamba Mine Workshop. In the next five years Syatwiinda Irrigation Scheme should become independent from the GSDP.

For our feeling it is not too long estimated to get this running in Syatwiinda Irrigation Scheme.

So, I think, we have to go on with our work on the "grass root level" with small farmers in small projects. The development will go slowly but solid. Syatwiinda still needs some years. Throughout the years 1982 and 1983 we could not do much to realize our "Five Years Workplan". It should be extended for at least two years or longer as need arises.

Two excerpts out of the:

"THIRD NATIONAL DEVELOPMENT PLAN - COMMITTEE ON IRRIGATION":

"..... If there is a profitable market for irrigated crops in Zambia, the commercial farmers near such markets and government enterprises may be invited to carry the risk and to make the profit. The average Zambian farmer is not able to take the risk nor to make a profit in a highly capital intensive venture. In some areas government investments in small holder irrigation schemes may be considered as a social investment to prevent recurring famine."

"..... Such schemes will concentrate on simple crops mainly for local markets. Irrigation development may not mean Rural Development but may be considered as means to produce expensive food for the richer section of the society. ..."

Out of GSDP-staffmeeting from 22.10.1981, brought forward by Hans Fuchs.

II. SYATWIINDA IRRIGATION SCHEME EXTENSION

1. Plans

Straight away from the beginning in 1970 it was planned to extend up to 320 acres (128 ha), later to 440 acres (176 ha). But the time table could not be observed.

In his Anual Report 1979 Mr. I.J.Krisifoe described the steps to extend the Scheme as follows:

"It is suggested that the scheme should be extended with 80 - 100 ha. The extension of these should carried out in 3 stages.

The 1st. stage, is to re-claim about 10 ha from the lake. The fields mostly near to the lake and were used for training purposes in the early days of the scheme. They are yearly subjected to inundation by the hihg lake level. (see map 1:B+6) As it was porposed for 1979 the construction of a dike that will be sufficient to re-claim this land.(15)

The 2nd. stage, is to bring an area of 40 ha under irrigation.(C)

The 3rd. stage, is to bring about 50 ha under irrigation.(D)"

2. Financial Problems

Already in 1980 a crawler was ordered and paid to erect the proposed dyke (15 + 16) to reclaim the area B. This area was used in the beginning to train farmers on irrigation. After this the land was not used any more because it was not fenced. But to fence it the dyke was needed, otherwise after every inundate the fence would have to be renewed. The area includes also the Mochipapa Research Station (6). This was fenced and used all the time. The actual re-claimation for Syatwiinda Irrigation Scheme is only about 3 ha irrigation land.

For the extension phase 2 (C) money was applied for in 1981 and all the following years but the GRZ did not provide the funds. They even informed us::

".... Consequently, in financial terms, the project is non-viable. I do appreciate however that you wish to justify this expansion in social, rather than financial terms. While this may be possible, I regret that at present we are unable to provide funds for this purpose. ..."

(Letter from MAWD, Mr. W.J.Rettie, 5.6.1981)

Since Mr. Krisifoe had started the extension just before I took over, I was forced to continue. Through the Rural Works Programme I could employ 20 farmers to clear the extension area and to do the fencing. They managed to clear about 10 ha. In Aug.'81

the FEC asked the GM for help and the GM promised to search for funds. Middle of 1982 we got the news that GM will provide about K 120.225 distributed among the years 1982 - '83 - '84. The first instalment of K 10.053 came in through the GST on 27.8.'82.

With the agreement of the FEC, the GSDP-co-ordinator and the GSDP-staffmeeting (see GSDP-staffmeeting 22.7.82, item 13) I gave the task to build the main channel incl. distributor boxes, the second pumping station and the new pipe line to the reservoir to GSB-co-op. Oct.'82 they started the work.

3. Development of Syatwiinda Irrigation Scheme Extension during the years 1981 - '82 - '83

In March 1981 Mr. I.J.Krisifoe started fencing the extension area without observing the drawing made and approved by the Land Use Planning and Cartographic Section Choma (from 27.4.1980). Being new for me it was very difficult to look through the whole issue.

Also in March '81 the Rural Works Committee (Mr. Krisifoe, ADAO and DES Sinazongwe) conducted that 20 farmers out of the Rural Works Programme should do a part of the clearing of the extension area and the fencing. Till Oct.'81 the whole area was fenced (3 wires only) and about 10 ha bush was cleared.

Now I had a survey of the area. I asked the Land Use Planning Section Choma to make a new drawing. This was made on 28.10.'81.

Long before the rainy season I tried to engage some of the 68 new applicants to erect voluntarily about 250 m of channel h to get the first 15 plots under irrigation. But the former owners of the land refused. They wanted compensation. This problem could not be solved during 1981, so I had to drop this idea. The land within the extension area was used for dryland farming by the former owners.

During 1982 no money was available and nothing was done until the money from GM came. Then GSB started to build the main channel (7). In Febr.'83, unexpected, the machines - paid for in 1980 - came to erect the dykes 15 and 16 and to do the rest of the bush-clearing within the extension area (C). Without any information additional payments were made by the ministry. So I had to find

additional work for the machines, e.g. to level some areas, to erect the dams for the irrigation canals h, i, j, k and l and to improve the dam between pumping station I and II (17).

The supervisor of this work was given to the GSDP-water engineer. He should specially control the right level of all the dams. Therefore he was given some helpers. But in spite of all this, the dams for the irrigation canals are quite useless. We shall have to involve a lot of manual labor to make them useful.

After erecting the dam (16) the new fence had to be shifted to this dam. Also area B had to be fenced. Already in Febr. '83 I asked the GSDP-water engineer to make a new drawing of Syatwiinda Irrigation Scheme, including the areas A, B and C, to get an overlook for further plannings. After some demands I got a drawing of the extension (C) only in June '83. The area is about 30 ha land for irrigation.

During 1983 the GSB completed (nearly!) the main canal (7) up to the irrigation canal j and the distributor boxes for canal i and j. The distributor box for canal h could not be completed because the GSDP-water engineer could not come from Nkandabbwe to Syatwiinda for nearly 6 months to give the required levels to the builders. (He managed to do this in Jan. '84.)

Also during the rainy season 1982/83 and 1983/84 the extension area was used by the former owners of the fields. Beginning of 1983 the caterpillars destroyed about 4200 m^2 of fields planted with maize. We had to compensate K 209.

End of 1983 all canals and boxes within the old Scheme were repaired.

4. Financial Statement 1982 - 1983

The estimation for Syatwiinda Irrigation Scheme Extension in 1981 was K 120.225 = DM 328.215 (1:2,73). During 1982 and 1983 Gossner Mission sent to the GST for the extension DM 127.414,53 = K 62.488,03. In Germany one pump unit was bought and sent to Zambia for DM 32.300 = K 16.500. So the outstanding money what will be sent during 1984 is DM 168.499,47 = K 86.500.

Here in Zambia the money was spent as follows (1983 and '84):

labour (manual)	K 12.216,99
subsistence allowances for Zambian supervisors	K 1.166,55
tools	K 1.100,79
fuel and oil	K 5.640,37
GSB (includes also manual labour)	K 30.613,--
others	K 2.659,93
total '82 and '83	K 53.397,63
carrying over to '84	K 9.090,40
<u>TOTAL MONEY SENT BY GM '82 + '83</u>	<u>K 62.488,03</u>

(for exact figures see "Final Financial Statement Syatwiinda Irrigation Scheme Extension 1982 + 1983" - Appendix!)

5. 1984 and Future

For 1984 and the future are about K 95.000, available. With this money the remaining work has to be done:

- finishing the irrigation canals h - l incl. drainage	K 10.500
- buying and laying the new pipeline incl. valves	K 50.000
- buying siphon pipes	K 3.500
- finishing the fence and cleaning	K 10.000
- finishing main canal (8)	K 31.000
<u>total</u>	<u>K 105.000</u>

Due to the rising inflation and the rising devaluation of the Zambian Kwacha the money should only be sent to Zambia when it is needed. A final calculation and an additional estimate can only be made at the end of the work.

For me Syatwiinda Irrigation Scheme Extension was too much! I was here to work with people (irrigation and dry land farmers) and not to build something, what is also not my profession. A job like this needs an expert like in the beginning when there were a building or water engineer only to erect Syatwiinda Irrigation Scheme and 2 agriculturalists to work with the farmers. I handed over the building work to GSB but still I was much involved in the building work since the one i/c for GSB handed over the supervision to his foreman and lorry driver.

For 1984 the AA i/c for Syatwiinda Irrigation Scheme should be responsible, assisted by the GSDP-water engineer, to open up the irrigation canals h-1 by manual labour with the remaining

money (K 9.090,40).

The "Workplan for the next 5 years" (I/10-3 page 18) includes also Syatwiinda Irrigation Scheme Extension.

III. DRYLAND FARMING PROGRAMME

1. Rural Workes Programme/Dryland Farming

Since some years the GSDP was running the Rural Workes Programme conected with a Dryland Farming Programme:

In the dry season farmers were employed to build roads, dams ect. From their salaries 25% were deducted and kept by the officer i/c as their savings. In Oct. when the farmers were laid off they got for their savings seeds and fertilizer for dryland farming. Also some seminars at the FTC-Malima were done every year. A lot of roads have been build by this programme. 1981 was the last year. 45 farmers were employed and were working at 4 places:

- 15 farmers finished the clearing of the last 6 km of the Mwananjoke - Muntuwamasiku - Road between Boleya Malima and Sinazongwe (see map 2 - a). Before the rainy season this road was graded.
- 10 farmers from Ngoma area completed a short cut on the road to Sikaneka Clinik (b). After this they were put to Syatwiinda Irrigation Scheme Extension.
- 10 farmers from Dengeza, Nyanga and Kafwambila worked in Syatwiinda Irrigation Scheme Extension and when the group of Ngoma came they went to work at the new Nyanga - Kafwambila - Road (c) together with a group employed by the Rural Council Sinazongwe. This road is not yet finished.
- 10 farmers from Syatwiinda area worked on the cleaning and fencing of Syatwiinda Irrigation Scheme Extension.

When we stopped the work in Oct. the whole amount of savings was K 3.335,03. Every farmer got maize seeds and fertilizer for two LIMA (1 LIMA = 2.500 m²).

For 1982 the GRZ did not give money for this programme.

2. GSDP - LIMA Programme

In the GSDP Budget Meeting for the budget 1982 it was decided that the GSDP should have a LIMA Programme instead of the Rural Workes Programme. The budget for this new programme was fixed with K 10.000 for the year 1982.

In the GSDP - Staffmeeting on 7.8.'81 I gave my proposal for a Dryland Farming Programme:

The GSDP should help the existing Agricultural Extension Staff to go back to the places where they stopped working when the war started (Sulwegonde, Siameja, Syanzovu, Kafwambila - for Sen. Chief Mwemba's area). Also we should help them to work effectively by conducting meetings and seminars and by providing transport etc. The same we should do with and for the SPCMU - depots and staff in our area.

But the GSDP Staff decided to do LIMA training in several areas during the next 2 years through the lecturers of the FTC - Malima. This started already in Nov. '81 for Boleya Malima/Chiyabi area and Kanchindu/Syatwiinda area. But the time until the rain started was too short. For 1982 our budget was cut down. For the LIMA training the GRZ approved only K 5.000, not enough for Sinazongwe and Mwemba area. In April I worked out a Dryland Farming Programme for the next 5 years where no GRZ funds were involved and presented it to the GSDP - Staffmeeting on 22.4.'82. The GSDP Staff agreed to the idea, also the guests Prof. Dr. T. Scudder and Prof. Dr. E. Colson. They marked this programme proposal as "excellent". The GSDP-Staff asked me to start the Dryland Farming Programme as soon as possible in Sen. Chiefs Mwemba's Area while the officer i/c Chief Sinazongwe's Area could use The GRZ funds for the LIMA training in this area during the year 1982.

3. Dryland Farming Programme for Sen. Chief Mwemba's Area

April 1982 the GSDP-Staffmeeting approved the proposal of the later officer i/c to found a Dryland Farming Programme (DFP) (see 3.a). Beginning of May it was introduced to Sen. Chief Mwemba and the ADAO Sinazongwe. Later to the DES Sinazongwe. They approved it. 11. May I went with Sen. Chief Mwemba and the ADAO Sinazongwe to Gwembe to get the approval of the DAO Gwembe. He also agreed. I Started to work out a time table and a programme together with Sen. Chief Mwemba, the AA for Kanchindu Mr. L. Mumbula and Mr. D. Mutinta (see 3.b).

In July the programme started. Sen. Chief Mwemba informed and convened the villagers through his Bakapaso (messengers). He opened the meetings and introduced me and the lecturers to the farmers. Mr. Mumbula and Mr. Mutinta instructed the participants in farm preparation (= preparation of fields, equipment, spareparts, seeds, fertilizer etc.), maize-production, LIMA-demarcation,

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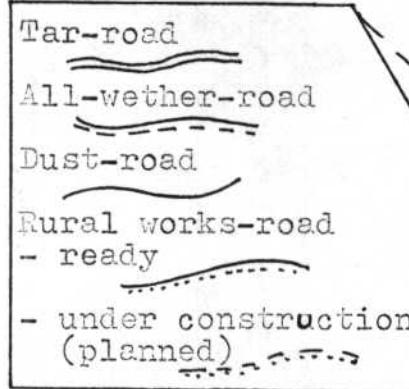
map 2

I Chief Sinazonwe's Area

- 1 GST - GSDF - Camp
- 2 Nkandabbwe (Irrigation-Sch.)
- 3 Sinazeze
- 4 Boleya Malima Irrig.-Sch.)
- 5 Malima (FTC)
- 6 Chiyabi
- 7 Sinazonwe (Boma)
- 8 Mweezia

II Sen. Chief Mwemba's Area

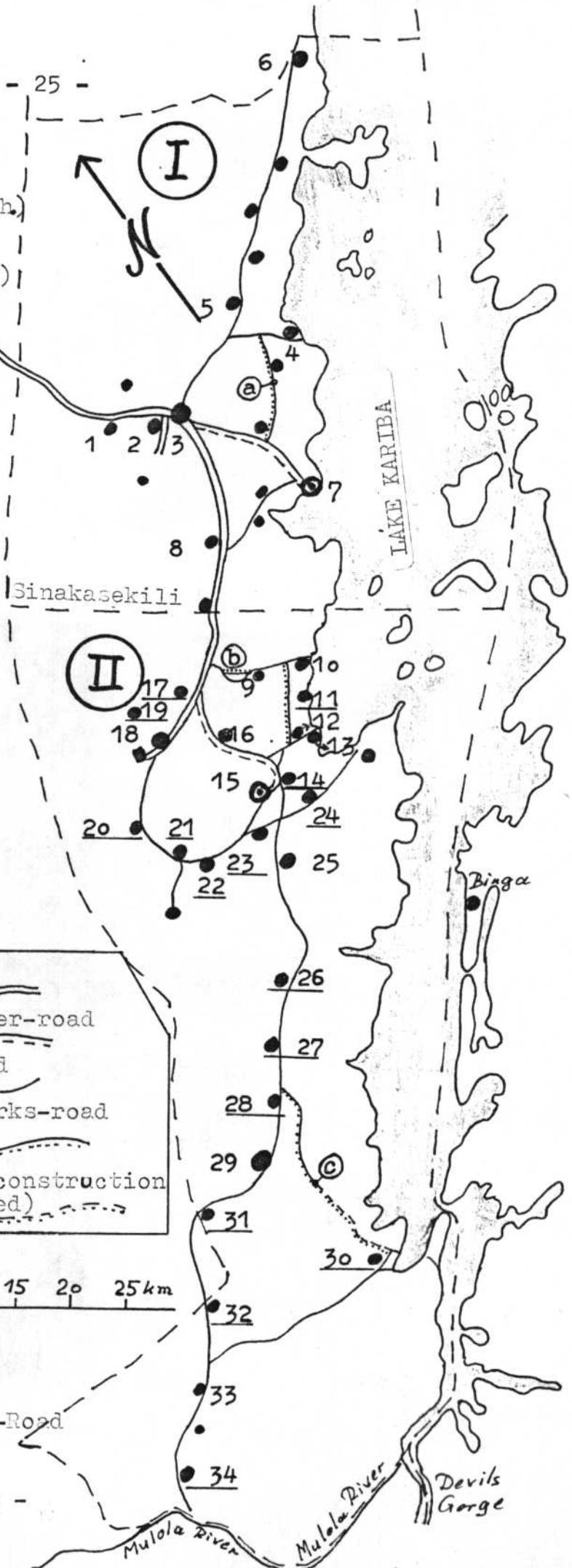
- 9 Sikaneka Clinik
- 10 Ngoma
- 11 Mucekwa
- 12 Simankawa
- 13 Syatwiinda (Irrig.-Sch.)
- 14 Siabaswi
- 15 Kanchindu (Chief, Court, School, Clinik, GST-Camp)
- 16 Chimoncello
- 17 Mweela
- 18 Maamba with coal mine
- 19 Sinakodobbo
- 20 Sinankumbi
- 21 Sulwegonde
- 22 Sinakoba
- 23 Mwemba
- 24 Kanyemba
- 25 Matambo
- 26 Muuka
- 27 Dengeza
- 28 Nyanga
- 29 Siameja
- 30 Kafwambila
- 31 Syawaza
- 32 Syanzovu
- 33 Diansalama
- 34 Siampondo



0 1 2 3 4 5 10 15 20 25 km

a) Mwananjoke-Muntuwamasiku-Road
b) short-cut Ngoma-Road
c) Nyanga-Kafwambila-Road

Underlined = Dryland Farming - Meeting Place



erosion control, crop rotation etc. I talked more in general about tillage, (winter-)ploughing and fertilizer. In his capacity as the chairman of Mwemba Multipurpose Co-operative Society (SPCMU) the Sen. Chief talked about this society and the necessity that all farmers join to get it running properly.

3. a) Dryland Farming Programme - Proposal

In the GSDP are two agriculturalists each one responsible for one Chief's area. There are also some agricultural advisors (AA) in each Chief's area.

The GSDP agriculturalist (officer) responsible for the area should go with the AA responsible for certain villages to one of these villages to teach about LIMA-Programme, animal husbandry, erosion control, fruit trees, vegetable gardens, handpump gardens etc. In the village he can see the special problems of this particular place and advise the villagers on the building of simple wells, pit latrines, grain stores, dams etc. on selfhelp basis.

The officer and one AA could go to 3 different villages every week. After 8 weeks time they do the follow-up together or alone or with other officers of the GSDP depending on special problems of this village or time or transport etc.

This follow-up should be done every 8 weeks, all together 6 times. That means the village will be looked after for one year or one full DRYLAND FARMING SEASON. In this way the officer can manage to care for 24 villages every year.

In Sen. Chief Mwemba's area are 80 villages with an average population of 300 people or 41 families. In Chief Sinazongwe's area are 90 villages with an average population of 320 people or 45 families (excluding Maamba township).⁺

So it will take about 4 to 5 years to reach all villages. Beginning in July 1982 this Dryland Farming Programme will run until 1986.

Some arguments for this Dryland Farming Programme:

- Learning by doing
- Learning in the own village
- Learning on the own field
- We shall reach all the farmers, both men and women
- We shall see all the special problems of each village
- All GSDP-officers can come in with their programmes:
 - food and nutrition, community dev., water dev.,
 - black smith, health, work with youth etc.
- There will be no seminar costs like feeding and transport of farmers etc.

The only costs we shall have are the km-allowances for the members of the GST and costs for education aids.

April 1982

Hans Fuchs
GSDP-officer i/c Dryland Farming

⁺) Figures out of the "GDI-Report"

3. b) Dryland Farming Programme for Sen Chief Mwemba's Area

The GSDP officer responsible for the area goes with the AA responsible for certain villages to the meeting place of these villages to teach about LIMA-Programme, maize production, erosion control, crop rotation etc. In the village he can see the special problems of this particular place.

The officer and one AA go to 2 different meeting places every week. After some weeks time they do the follow-up. This follow-up should be done every 8 - 12 weeks, all together for 2 years or more.

In Sen Chief Mwemba's area are about 24 meeting places covering all 80 villages.

The aims for this Dryland Farming Programme are:

- learning by doing
- learning in the own village
- learning on the own field
- we shall reach all the farmers, both men and women
- we shall see all the special problems of each village
- all GSDP officers can come in with their programmes.

3. c) 1982

In 1982 we had 13 meetings in the villages Simankawa (see map 2 - 12), Mucekwa (11), Siabaswi (14), Mweela (17), Sinakodobbo (19), Sulwegonde (21), Sinakoba (22), Mwemba (23) and Kanyemba (24) with the total of 438 (Ø 33-34) participants (55% men, 45% women). 11 times we had to postpone meetings because of rain, funerals etc.

Already in 1982 I found out that a strict time table is not possible. For the planned 18 meetings during 1982 I arranged 24 dates and drove to the places 24 times. But only 13 times I got enough farmers to hold the meeting.

The response from the farmers to this programme was very good. They asked me always to come again and to repeat. Some facts out of the lessons were very new to them and farmers were very interested. During my annual leave the two AA's went on independently.

In August after a meeting at Mucekwa the villagers showed us two boreholes without pump but still ok. I reported to the Boma and in Dec. one borehole was equipped with a handpump (borehole of the old Mucekwa School).

3. d) 1983

Sen. Chief Mwemba and the two AAs were very satisfied with the success we had in 1982. They asked me to add some more places to the programme. So Sinakumbi (20), Muuka (26), Dengeza (27), Nyanga (28), Kafwambila (30), Syawaza (31), Syanzovu (32) and Siampondio (34) entered the programme.

All together 60 meetings were planned during 1983. We arranged for 52 meetings and 30 meetings were held with the total of 1.250 participants (ø 41-42), 60% men and 40% women.

Due to my other jobs (Syatwiinda Irrigation Scheme, Syatwiinda Extension, Gossner Service Team Treasurer) I could not manage to arrange more meetings.

4. Reaction of the Farmers

Many farmers, old and young ones, in all areas were very enthusiastic about our coming and teaching. For many it was the first time after the war or the first time at all to here how and why to use fertilizer, how to plant hybrid maize, how and why to plough, how to prevent soil erosion, how to measure a LIMA (2.500 m^2), what is the aim of SPCMU ectr. The first time they were still a bit reserved but when we came the second or third time they got confidence to the programme and the people doing it. They trust and belief that this programme is good and it will continue.

In the short time this programme is running one can not see big development. But some things were interesting:

- When we talked about co-operation between men and women on the field, people laughed.
- When we told the men, they should not let women and children plough, the men should do it, all women cheered.
- Discussion about winterploughing: Farmer (man): "Winterploughing is good, I'd like my wives would do it, but they refuse!" - Answer from a woman: "Why don't you do it yourself?"
- An other farmer (man): "Winterploughing, no! That's cruelty to the oxen and tormenting the women!"
- An other Farmer (man): "When I tell my wives to plough now (May) they will tell me: 'You're mad! It's much too early! It has still time down to Sept. or Oct.'"
- Talk about early buying of maize seeds: an old woman: "Don't bring seeds now (after a poor harvest)! - We're hungry! - We'll eat it!"

End of the years 1982 and 1983 many farmers especially in the remoted areas asked for maize seeds and fertilizer. Several times I went with the Chief to SPCMU-Choma to get fertilizer and seeds to Sinakoba and Sulwegonde or to Siameja, Syawaza and Syanzovu. These exertion was successful. It was a pity that VSP had an other policy and started acting without informing and arranging with the people knowing the area and its problems.

5. Future

At the time about 200 families out of 7.800 within Sinazongwe Sub-District have plots in one of the Irrigation Schemes. 97,5 % of the population are depending exclusively on dryland farming. Except Syatwiinda area there is no land for irrigation farming within Mwemba area. If Syatwiinda Irrigation Scheme can be extended up to 180 ha still only 400 families could be satisfied. But there are about 3.500 families within the area. So only 11 % of the population could be involved in irrigation farming. Of ~~cause~~, some are living at the lake shore and can do some zilili but the big majority is depending exclusively on dryland farming. And the knowledge about dryland farming is very poor! The Agricultural Extension Staff for the whole area is one AA at Kanchindu and one CD at Maamba.. If the FTC-Malima ~~workes~~, only a few farmers can go there and always the same farmers are attending this courses, mostly men.

An expatriate working in this field, motivating and helping (in giving e.g. transport) the Extension Staff (if any) and doing the field work is ~~urgently~~ needed (also one in Chief Sinazongwe's area!). Advise in zilili should always be included. Also my proposal from 7.8.81 (see page 24). should be reflected upon to serve the whole area on this very importend object.

IV. SUMMARY

I liked to work here in Kanchindu/Syatwiinda and in Sen. Chief Mwemba's area. My work touched only a few problems of the people in this remoted area. And, as mentioned, these problems are just touched. There are about 27.000 people between Sinakasikili and Mulola River. All roads are very poor. No bus is serving the area and only a few lorries risk to go to Siameja. Pupils have to walk up to 15 km to reach their schools. Clinics are in Sikaneka

(under construction), Maamba, Syatwiinda/Kanchindu, Siameja and Kafwambila. They are all very poor equipped. SPCMU-depots are in Sinakodobbo, Syatwiinda Irrigation, Siabaswi and Siameja. Agricultural Extension Staff is only in Sinakodobbo and Kanchindu, Vet. Staff in Maamba, Kanchindu and Siameja.

Nearly all people drink water from the rivers or the lake. Only a few working boreholes and wells are in the area.

So a lot of work is still required: road construction, building and providing of schools and clinics with staff and equipment, water supply, animal husbandry, agricultural extension work and many others more. In the beginning it was planned to build 4 houses at Kanchindu for the GST. But still there are only 2 and only one GST-member is working exclusively for Mwemba's area. The GM should consider to put more effort to this area in the future.

My private proposal for Sen. Chief Mwemba's area and Kanchindu Camp:

- One agriculturalist for Syatwiinda Irrigation Scheme and animal husbandry.
- One agriculturalist for Dryland Farming and to assist SPCMU.
- One Co-op.-Extension Worker for CUs and other Co-ops.
- One social worker to care for schools, clinics, wells etc.

The building engineer of the GST should take over the finishing of Syatwiinda Irrigation Scheme Extension and work on water supply.

The Project workshop at Nkandabbwe should be responsible for the technical equipment of all irrigation schemes. For the workshop I propose an expatriate. He can also care for the black smithes within the area (to make plough shares etc.) and to work together with the building engineer on water supply.

Road construction, lake transport, electrification, damming up of rivers etc. should stay under district responsibility.

The GST should really do the "grass root work" with the people! This will cost a lot of driving and the full attention of the expatriate. - Working on the "grass root levle" will not involve many funds. But the results for the people can be very good. Of cause this kind of work will not bring much publicity. But GM should consider the aim of its involvment here in Zambia as a christian mission and not as builders and constructors or money generating managers.

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THE GWEDE SOUTH DEVELOPMENT PROJECT :
AN EVALUATION

Notes Banda

Science Studies Unit, and the
Department of Electrical Engineering,
Edinburgh University

October 1983

ACKNOWLEDGEMENTS

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But the work would not have materialised were it not for the assistance given me by people in the field. The GSPP officers gave me all the support I needed. But I would like to mention by name Peter Wendt, Eve Engelhardt and Sam Mbale for all the valuable discussions we had.

Klaus and Maria Scheffer of IRDP Gwembe gave me a great deal of encouragement. I benefitted greatly from their long-term experience in rural development projects and in the promotion of irrigation technology to the small-scale farming sector in particular.

At the University of Edinburgh I owe a debt of thanks to the Director of the Science Studies Unit, David Edge, for proof reading and correcting this report; and also to Carole Tansley for typing it out.

But it is the experiences of the Gwembe Valley community which really matter most.

Hoses Banda

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PART A : BACKGROUND

1. INTRODUCTION AND OVERVIEW

The Gwembe South Development Project (GSDP) has been evaluated twice. Buntzel (1980) carried out a study on behalf of the Evangelical Mission of Germany, as a precondition of its assistance to GSDP. The Scudders/Colson team [1982], also drawing from their long-term involvement in the socio-economic studies of the region, stretching for over twenty-five years, carried out an informal evaluation on request of the GSPP staff members.

The present evaluation has been requested by the Planning Division of the Ministry of Agriculture and Water Development (MAWD), with the agreement of the Gossiner Mission representative in Zambia. Its main purpose is to review literature and data on the on-going activities of the project. The main concern is both technical and socio-economic feasibility.

The Buntzel report made very conclusive recommendations on project management, which have not yet been implemented. Apart from the appointment of a Planner/IRPP coordinator, all other activities are continuing as reported by Buntzel.

The Scudders/Colson team made recommendations which pointed to the need for building and strengthening the GSDP. Though I share their observations, I do not support their views on project development. Whereas they recommend that existing institutions should provide support to GSDP, I feel that the latter should assist the former, in their various fields.

Though I will also use my observations to throw some light on the areas seen by Buntzel and the Scudders/Colson team, my main orientation will be more active. Thus my attention will be focussed on the activities and project components which are associated with GSDP. Possible recommendations will come after each item.

In assessing each project component, a great deal of emphasis has been placed on its impact, in terms of the number of people involved and the involvement of women. Where possible, the rural income generation effect has also been assessed.

Part A of the report is on project planning and management. A history of the project from the time of the Kariba Dam construction and resettlement, to the time of GSDP involvement in Gwembe Valley, is also presented. And Part B is a description and an assessment of the project components.

2. HISTORY OF THE PROJECT

The Gwembe South Development Project (GSDP) was established in 1970 as a regional development/resettlement project on a bilateral agreement between the Zambian government and the Gossiner Mission of Berlin, West Germany. The latter was to provide technical assistance personnel, and the former was to provide development funding.

The Gossiner Mission engages in development work (also in other Third World countries, like India and Nepal) as part of its Christian witness. This is in line with the Mission's understanding of development which, it believes, should cover all aspects of socio-economic and spiritual human endeavours. Thus the Gossiner Mission cooperates not only with government personnel, traditional rulers, and target groups, but also with the local religious groups.

Unlike other regional development projects in Zambia, which were established to foster rural development and to boost agricultural productivity, GSDP should be seen as a special case, in that it was established to introduce new agricultural techniques which would assist the Lake Kariba relocatees to adapt to the new environment.

The Gwembe Valley communities had for long lived along the shores of the Zambezi river. Their agricultural activities were largely based on the cultivable soils of the region comprising the narrow alluvial strip along the Zambezi, the riverside deposits of the tributaries and the alluvial fans at their outlets. The annual rise and fall of the water levels in the rivers offered opportunities which enabled the people to practice double cropping each year. Dryland farming on the uplands, on the mopani woodlands, was practised to a very limited extent. Thayer Scudder and Elizabeth Colson have carried out very extensive studies on the ecology and social organisation of the Gwembe people. They reveal that despite the environmental problems (a hot dry climate, short and uncertain rainfall, long history of recurrent droughts, infrequent but sporadic flooding) the agricultural practices fitted well with the local conditions.

It was the construction of the Kariba Dam, for the sole purpose of electricity generation, that was to disrupt and change peoples' life styles and environment. The lake (Kariba) which formed behind the dam entailed shifting and resettling the people on new environs, on the uplands. The resettlement programme which began in 1958 cannot be said to have been fully completed as the people affected are still experimenting, with both old and newly-introduced technologies, on the new environment. Forced resettlement brings many hardships and stress, and the Kariba experience is no exception.

To compensate the relocatees, the Federal Government of Rhodesia and Nyasaland had planned some fishing and agricultural projects where the relocatees could get involved. The agricultural activities were mainly based on irrigation earmarked for some areas along the shores of the lake and the main tributaries.

The execution of the irrigation schemes along the shores of the lake, which were to make use of the water resources of the lake, took a long time to initiate. It was ten years after the opening of the gates at Kariba Dam in 1960 that the Puleya Malima Pilot Irrigation Scheme was established. Two years later, in 1972, the Siatwinda Pilot Irrigation Scheme was established with the Gossiner Mission Involvement. And it was only in 1980 that a FAO irrigation research team started looking at the possibilities of harnessing the lake drawdown area resource at the Chiabi peninsula.

Of the irrigation schemes on the main tributaries, only Nkandabwe Irrigation Scheme is still in use. Most of the others had their dams silted up. Information on their actual number and locations is too scanty.

Apart from irrigation activities (excluding Chiabi), GSPP has also been involved in such diversified fields as village water supply, home economies, dryland farming, village crafts programmes, intermediate technology and (unlike other rural development projects) in the building of local, community-based, grassroot institutions.

In our evaluation of GSPP we have to bear in mind that the period of escalation of the Zimbabwean wars of liberation, from mid-seventies to early eighties, was not easy. Development efforts were severely constrained by the security situation.

The general economic position of Zambia was also in crisis in the latter part of the seventies. This came to have an effect on the government's commitments, in the provision of development funding in projects like GSPP. It is from this background that we are considering the impact of GSPP in the Gwembe Valley south region.

3. PROJECT DESIGN

Geographical Description : The GSPP activities cover the whole Gwembe south region. The area stretches from Batoka Gorge to Chipepo. To the north, on a diagonal position and parallel to the lake, the foot of the Zambezi escarpment marks the edge of the valley. The total area of the Gwembe valley region is 12,610 square kilometers.

The total population of the whole Gwembe valley is 76,451(1), and Gwembe south has 36,293 people. The concentration of population is mainly along the shores of the lake and the rivers, and on some flat areas. The general population density in Gwembe Valley is 6.1 per square kilometer.

Project Planning : The Cossiner Mission involvement in Gwembe Valley development started in 1970. Through its office in Berlin, it requested the German Development Institute (GDI) to draw up a comprehensive plan of "integrated intensive rural development in the Gwembe Valley". In 1971 the Zambian government accepted the offer of GDI for this undertaking.

The GDI (or 'Brandt') report proposed twenty-three (23) programmes for implementation in the first five years of the agreement period. The programme components were mainly in irrigation, fishing, public health, community development and small cottage industries.

In the GDI team's assessment of the major problems of the area, the lack of cash income generating activities (outside the coal mining sector) was identified as of crucial importance. Thus, in order to increase the income of the people, the GDI report recommended three types of programmes which were categorized into :-

- i) Regional exports - in the agricultural sector, the usual marketing of agricultural produce and the sale of cattle out of the region.
- ii) Import substitution - here all sectors of the regional economy were analysed so as to ascertain the possibilities of boosting locally available goods and services.
- iii) Complementary programmes - these were mainly in public health and educational services. They were seen as prerequisites for the success of other programmes.

A threefold development strategy, a combination of all the three above, was drawn up and recommended for the area.

In the agricultural sector, four out of the five projects proposed had a bias towards irrigation. The GDI team felt that the promotion of dryland farming activities could wait until enough information was gathered; therefore, it could be considered only as an experimental stage. It was the team's conviction that in the long term irrigated fruit growing, especially citrus and oranges, would be the most rewarding agricultural activity in the region, in view of the local climate and the national market.

In the fisheries promotion programme, the GDI team identified the nature of the transport network and the marketing system as the major constraints. But since these were seen more as matters of national concern, they recommended the establishment of an integrated lake and road transport system, and also the involvement of the local communities in the marketing of fish.

In the import substitution programme, the potential for using local loam and coal from the Maamba Coal Mine for making bricks to be used in construction works (both in villages and in the construction of government and other institutional buildings) was identified. The trade, service and recreational sectors were also seen as areas of considerable potential in the utilization of these materials.

4. PROJECT IMPLEMENTATION

Though it can be acknowledged that the GDI team provided a valuable strategy for Gwembe south development, it must be realised that the total implementation of their recommendations could not be executed for three major reasons :-

- i) The GDI team was not requested to draw up programmes which were going to be implemented, but rather to provide specific recommendations which could be considered by the Zambian government. It was up to the latter to accept, reject or to implement the proposals partially. To my knowledge, the Zambian government did not commit itself to provide development funding for the total implementation of the GDI's recommendations.

- ii) The geographical position of the area vis-a-vis Zimbabwe, and the Zambian government's commitment to the total liberation of the southern African region (which came to be manifested in its support and provision of bases to the liberation movements), made the Gwembe Valley region into a frontline, and to some extent battlefield, when the wars of Zimbabwean liberation escalated from 1973 onwards.
- iii) The experience of the first three years of the project had shown that the Zambian government's contribution, even to the projects to which it had committed itself, was not being maintained. The capital allocation decreased from K79,742 in 1972, K65,000 in 1973, K63,250 in 1974 to K58,000 in 1975.(2)

Thus, in 1976, the agreement between the Zambian government and the Gossiner Mission had to be renewed, because it was already clear that the planned projects could not be completed under the 1972 agreement.

The new agreement rejuvenated the project, both in terms of activity and capital financing. The rural works programme was initiated and the dryland farming programme was reactivated. Table 1 shows the government's capital allocation from 1972 to 1982. The percentage changes from year to year are also shown.

Towards the end of the seventies and early eighties it had, again, become evident that the Zambian government contribution, in terms of capital financing, was dwindling. This was also the time when the hostilities between Zambia and her southern neighbour on the other side of the lake, ceased. Thus it was now possible to execute and implement the projects that were constrained by the security situation.

Looking at the critical economic position of Zambia in 1979, the Gossiner Mission, with the agreement of the Zambian government, requested the Running Costs Advisory Committee (FKA) of the Evangelical Mission Board of Germany (EMM) for financial support to GSDP. FKA committed a total sum of K46,800, which was 45.04% of the capital budget of that year (1979).⁽³⁾ But, as a precondition for future financial support, FKA asked for an evaluation of the project. In April 1980 Dr. Rudolf Buntzel was engaged to carry out this exercise.

5. THE BUNTZEL EVALUATION

The Buntzel report was very critical of the project's emphasis on irrigation, of its management structure, and on the way project components were being planned and implemented. It very much doubted the beneficial impact of the project on the majority of the Gwembe Valley population -- the subsistence cultivator and fisherman, who was supposed to be the target of the project.

Buntzel felt that, although the first (1972) agreement between the Zambian government and the Gossiner Mission had a bias on irrigation (which came to be reinforced in the Second National Development Plan, 1979-83, p.194, which mentioned only irrigation, and the workshop and research activities of the project, in its budget of K300,000), a shift in emphasis from irrigation to dryland activities was necessary. In spite of the environmental conditions which favour irrigation, the high

investments needed, the degradation of the soils by saltification because of poor drainage in the existing schemes, and (most importantly) the involvement of only an insignificant segment of the population in them, call for caution in their promotion. (On the present assessment of the impact of irrigation schemes in the Gwembe Valley, refer to the section on irrigation in part B of this report.)

6. GSDP/IRD INTEGRATION OR LOCALIZATION

The Buntzel report could not have come at a more opportune time, in that it was produced just as the Planning Division of the Ministry of Agriculture and Water Development was looking for mechanisms of integrating the activities of Integrated Rural Development Programmes, in other provinces, into the relevant local institutions. Unlike the Scudder/Colson report (1982), which proposed ways of strengthening GSDP as an institution, Buntzel (in line with the Planning Division's new directives on the running of IRDPs, and in conformity with the Zambian government's decentralization policy) proposed the diffusion of GSDP resources, in terms of capital financing and technical personnel, into relevant local institutions.

The planning of project components was also to be within the relevant institutions, with the Gwembe South Development Committee (GSDC) as a policy making body. It was his conviction that, if the existing structures were used, the planned projects would to some extent be a reflection of the felt needs of the Gwembe community.

From my assessment of the present GSDP situation, it seems quite clear that, in spite of Buntzel's recommendations and the provision of the Zambian government and Gossiner Mission Agreement that the project should just be an executing agency, with GSDC drawing up the plans, the project officers draw personal professional plans which are submitted for endorsement in the staff meetings. Thus, as Buntzel observed, the staff meetings are still the policy making gatherings of GDSP activities.

Drawing from GDSP experiences, in comparison with those of the Swedish (SIDA)-supported and British-aided IRD programmes in other parts of the country, it becomes increasingly obvious that the British/IRD model seems the most appropriate. In this model, the emphasis is on improving and strengthening the implementation capacities of the relevant departments and institutions, at the local level. In the GSDP and SIDA-supported IRD programmes, in contrast, the experience has been one of projects which have, themselves, developed implementation institutions in parallel (if not in competition, in terms of clientele) with the relevant departments and institutions.

For programme-supported projects, this arrangement has been quite successful in project component completion, but it has generally failed to answer the long-term project implications. Where the projects had done all the work, roads have been constructed, dip tanks built, marketing sheds constructed, new income-generated activities initiated, new agricultural camps opened, and so on -- but the relevant department or institution has, in most instances, failed to run, and at times has refused to take over these facilities.

These problems have, usually, arisen because project initiators, when identifying projects, have only identified the need for a particular project component without seeing or assessing the recurrent cost implication of these components on the relevant department or institutions. Thus, since these projects have not arisen from these institutions, they have, once taken over, become a drain on the institutions' meagre resources. It has to be realised that the recurrent budgets of most government departments are at best static; many are even decreasing in real terms. The overstretching of these departments' limited resources, by forcing them to take over some of the facilities and services initiated by technical assistance projects, usually results in severe consequences on their implementation capacities.

It is from this background that it is suggested, in line with the Zambian government decentralization policy, that all GSIDP technical/professional officers should as soon as feasible be diffused into the relevant sections of the district council, government department or local institution.

Any new project component or technical assistance to be considered should first be assessed in terms of the long-term capacity of the relevant institution to take over running such facilities and services. If this capacity is lacking, then the question should be how it could be improved. If it is a question of personnel, and if the GSIDP can provide resources, such staff should, from the outset, be assigned to these institutions.

The placement of GSIDP officers in Gwembe South Builders' Cooperative and in the Gwembe Valley Self Help Promotion Society should be seen as steps in the right direction. This should go further, even in agricultural activities, with the placement of an officer with a bias on dryland farming activities in the Training Section of the Department of Agriculture, to be based at Kalima Farmers Training Centre; a Female Extension Officer to be placed in the Home Economics Section; a Water Engineer to be placed in the relevant section of the District Council; a Fisheries Promoter to be stationed at the Fisheries Training Centre; and so on. With this support, the implementation capacities of these institutions will be improved, and any project implemented will have to evolve from these institutions. Thus a precedent will have been set, in which the long-term project continuation is carried out on a recurrent budget.

The direction being taken by the recently appointed (May 1983) Gwembe Valley IRDP Coordinator, in letting project proposals come from the local institutions for discussion in the IRDP Steering Committee (whose membership is drawn from officers and representatives of local institutions), should be seen as a step in the right direction. As a feedback, IRDP resources should move along the same route.

PART B : PROJECT COMPONENTS

As already mentioned in Part A, GSIDP activities are mostly geared toward the introduction and promotion of an irrigation system of agriculture. Most of the attention and resources have, therefore, been put into irrigation schemes.

1. Irrigation

GSIDP activities on irrigation have centred on Siatwiinda Pilot Irrigation Scheme, Buleya Halima Pilot Irrigation and Nkandabwe Irrigation Scheme. It has also, at one time or another, been involved in trials of small scale, hand-pump irrigation systems, and of late, even in drawdown (silili garden) irrigation. We now assess the impact of GSIDP in irrigation farming in Gwembe South region.

1.1 Siatwiinda Irrigation Scheme

- a) History : The Siatwiinda Pilot Irrigation Scheme (SPIS) was established in 1970. But the work on technical lay-out was not completed until early 1972. The first farmers in the scheme were enlisted in the 1972/73 season (see Table 3).
- b) Location : The SPIS is situated in Chief Nwemba's area at Siatwiinda village on the south-western bank of Lake Kariba.
- c) Objective : As a compensation to the Lake Kariba relocatees, SPIS was established as a means of increasing agricultural productivity and thereby boosting their standard of living. It was a pilot scheme inasmuch that knowledge was needed to ascertain the best crops that could be grown in the area under irrigation, and also to assess the farmers' response to the new way of life which irrigation farming entails.
- d) Hectarage and Field Lay-Out : The total area of the scheme is 32 hectares of which 4 hectares is under the research branch, and 10 of which has just been reclaimed from seasonal inundation. Thus the hectarage under the scheme is 28ha. But we have to consider that this also includes the drainages, canals, paths etc. The actual hectarage under cultivation by the farmers is therefore only 22ha. The plots are 0.2ha each. The whole scheme has 110 plots. There is a provision of extending the scheme to a further 80 to 100 hectares.
- e) Implementation
 - e.1 Management : SPIS is run by the Farmers Executive Committee (PEC) which decides on the allocation and disallocation of farm plots to the participants. On the technical side the Department of Agriculture has seconded an Agricultural Assistant, and GSIDP has, from its inception in 1972, placed an officer as an Agricultural Adviser to the scheme.
 - e.2 Finance : The Government of Zambia has been the major supplier of development funding to the scheme. The physical structure and

The differences in figures between those on Table 5 (on rice sales from SPIS) and those on Table 6 (on HAMBOARD rice purchases) indicate that there were other farmers or schemes - the Mbandabwe Irrigation Scheme, for instance (p.22) - which were also selling rice to HAMBOARD. But in the 1977/78 marketing season the Tables show that SPIS sold more rice bags (150) than were purchased (83) by HAMBOARD. This confirms the existence of other marketing outlets. Between 1978/79 and 1979/80 marketing seasons, SPIS had become the only supplier of rice to HAMBOARD, and the latter had also become the only official purchaser of rice.

With the withdrawal of HAMBOARD from purchasing of produce, as from 1980, SPCMU took over this function. But the production of rice began to decline; SPCMU has thus not yet handled any rice from Siatwiinda.

The Valley Self-Help Promotion Society (VSP), a local institution established with GSDP assistance, has also been involved in the purchasing and marketing of produce from SPIS. In 1979, the society imported a rice huller/polisher from the United Kingdom. This enabled it to purchase rice from the farmers, process it, and then sell it to the local community. This factor can account for the very low sales of rice to SPCMU from 1980 onwards. However, VSP does not keep proper records which could enable a quantitative assessment of its involvement in rice purchasing, processing and marketing at Siatwiinda.

Siatwiinda Savings and Credit Union has also been involved in the marketing of produce on behalf of the farmers. It was earlier seen by the project officers (GSDP, 1978 Annual Report p.3) and it was acknowledged by Buntzel (1980 p.9), that the Credit Union was the most capable institution in the marketing of produce, as it acted as a link between the farmers and HAMBOARD (and later SPCMU). But it is now being emphasized by the GSDP Credit Unions Promoter that credit unions are not supposed to be involved in any income generating activities. Thus the credit union has now withdrawn from handling produce.

In addition, individual farmers usually make their own marketing arrangements, especially when the quantity of produce to be sold is limited. With the installation of the rice processing machine, farmers can have their rice polished, and then they can sell it straight to the consumer.

ASSESSMENT : As pointed out elsewhere (p.12), rice has proved to be the most feasible crop for Siatwiinda conditions. The farmers have mastered the techniques of its production, and it has been adopted in the local consumption patterns. In spite of these indicators, the SPIS is not being fully utilized. The hectarage under rice cultivation (see Table 5), is far below the scheme's capacity of 22 hectares. The highest hectarage cultivated (5.6 ha) was in the 1978/79 season. This was only 25.45% of the scheme's total capacity. It can be deduced that output per hectare has been decreasing at an average rate of 5.30% in the seven year period from the 1976/77 to 1982/83 seasons. Table 7 shows the output per hectare during this period. The figures are deduced from Table 5.

The limited use of the scheme's possible cultivable hectarage, and the decline in output per hectare, can be explained by the following reasons :-

1. Though the cropping pattern can allow double cultivation, rice is grown only in the rainy season (November to March);
2. The cultivation of rice in the rainy season conflicts with the cultivation of other crops like bulrush millet and sorghum (the staple food crops), and cotton (which is heavily promoted by Lint Company of Zambia);
3. The poor drainage in the scheme has resulted in saltification of the arid soils.

RECOMMENDATION : In the prevailing circumstances, double cropping of rice per season does not look feasible. It can be suggested that the scheme's efforts in rice cultivation should be concentrated only in the dry season. This will avoid the conflict in crop production with other crops. But this will only be possible if the drainage system could be improved, so as to control salinity of the soils.

As far as rural income generation is concerned, rice cultivation has been quite stimulative. Table 8 shows the recorded revenue sales of rice from 1976 to 1980. From this Table it is clear that the producer price of rice was almost static during this period. Though we cannot, at the moment, present statistical indicators, the costs of rice production rose during this time. This should also be seen as one of the factors which acted as a great disincentive to the cultivation of the crop.

e.4.2 Vegetable Production is the second major agricultural activity at Siatwiinda. They are grown mainly after the harvest of the rainy season crop, rice. Table 9 shows the trends in vegetable marketing in the period 1976 to 1982.

The response of farmers to vegetable production is quite encouraging. From 1977 to 1978, vegetables sold almost doubled, but remained static between 1978 and 1979. Sales then increased by 26.22% from 1979 to 1980. In 1981 they had reached their highest peak of 58,280 kilograms.

The static position between 1978 and 1979 could be due to the mechanical problems of the water pumping engine : this was replaced during the course of 1979, and the sales increased in 1980. The 54.75% drop in vegetable sales from 1981 to 1982 has caused a great deal of concern, to the farmers as well as to the project officers.

In 1972 the Brandt report had pointed out that the local community, including the mining town of Kaumba, would not manage to absorb the vegetables which could be produced from a scheme like Siatwiinda. But through the operations of ZANHOKT, a company which used to buy horticultural products from farmers for sale in the urban areas, the scheme was encouraged to grow more vegetables.

The production of vegetables was constrained in 1980 when the

establishment of the scheme costed K120,000 (Buntzel, p.29). Over the period 1972-80, the government has invested more than K55,840. This excludes the government personnel costs assigned to the scheme. Some financial assistance has also been received from other donors, through the Gossner Mission (GM).

Table 2 shows the financial flow to SPIS from 1972 to 1980. Excluding the GM technical personnel and the Zambian Government's civil servants' costs, the total investment in SPIS in this period comes to K188,965.

e.3 Farmer Involvement : Table 3 shows the yearly total number of farmer participation in SPIS in the ten-year period 1972-82. It has only been possible to identify the involvement of women as plot holders/owners in the last five years (1978-82). It is interesting to note that the number of farmers involved in the scheme has more than doubled in the ten year period. The static position in the first three years, 1973 to 1975, should be seen as a period of uncertainty. For those involved (promoters and farmers) it was a time of experimentation; for outsiders it was a period of having a close watch. The steady increase from 1976 onwards could be as a result of the farmers acceptance of irrigation technology.

A period of experimentation and uncertainty can also be observed in women's involvement in the scheme. But Table 4, which is deduced from the data on Table 3, shows a very interesting picture on the sex proportional changes in the period 1975 to 1982. Whereas the proportion of male participation has been decreasing, that of women has been increasing. This should lead us critically to examine the way in which new technology is diffused and adopted between the sexes. The Siatwiinda experience shows us that irrigated technology was initially focused on men and then expected to be passed on to women. But the sex proportional changes in farmer participation show that women are not necessarily slower adopters of technology, but that they do adopt innovations cautiously : this could give the technology a much longer lasting effect.

e.4 Crop Production : The primary purpose of the crop production aspect of SPIS was, initially, to determine the most appropriate crops which could be grown under Gwembe Valley conditions. It was also intended to ensure the generation of incomes to those involved; to boost the food supply situation to the area; and thus to improve the living standards of the people.

From the crop research trials that were conducted in the first four years (1972-75) on various crops (onions, beans, groundnuts, rice, soyabean, cotton, sunflower, wheat, sorghum and high yielding maize variety [SR52]), rice proved to be the most promising crop, technically, as it was observed that in the rainy season

(November to March) farmers preferred to grow sorghum, bullrush millet and the local maize, kaile. Farmers turned to the production of vegetables (onions, tomatoes, cabbages, etc.) only in the dry cool season (April to September). This is the only time that the facilities provided by irrigation technology are utilized.

e.4.1 Rice : Table 5 shows the production and marketing trends of rice from 1976/77 to 1982/83 seasons. This table shows that the production of rice rose quite dramatically and more than doubled in the first two years. But from the 1979/80 season the production started declining.

From my discussions with the people who are (or have been at one time or another) involved in the scheme, it seems quite clear that the decline in production can be explained by four main reasons :-

- i) the training of farmers in the scheme, after enlisting, is ignored;
- ii) the experience of farmers, over the years, was that they could not ensure a steady flow of water in the plots, because of frequent engine mechanical problems;
- iii) the drought situation of the past two years has put a big strain on the capacity of the scheme's resources in terms of manpower and machinery; and
- iv) the poor drainage system has led to soil saltification.

The difference between yields and marketed bags of rice can be explained by two main reasons :-

- a) the community involved is accepting rice as a food crop
- b) since the marketing of rice is not strictly controlled, part of the produce is sold by the individual farmers, without informing either the scheme advisers or the Farmers Executive Committee.

An assessment of the consumption patterns in the area (p.15) confirms the first explanation.

The system of rice marketing that has evolved in Siatwiinda has acted as a great incentive to rice production. Five marketing channels can be identified :-

1. National Agriculture Marketing Board (NAMBOARD);
2. Southern Province Cooperative Marketing Union (SPCMU);
3. Valley Self-Help Promotion Society (VSP);
4. Siatwiinda Savings and Credit Union; and
5. Individual farmers.

Before 1980, NAMBOARD was the official supplier of requisites and farm implements, and also the purchaser of produce from farmers in those areas where primary societies had not yet been formed, and thus the cooperative (SPCMU) was not operating. Table 6 shows the number of bags (in 80 kilogram bags) purchased by NAMBOARD from the area from the 1975/76 to the 1979/80 marketing seasons.

irrigation methods (above) could be tried on various kinds of crops. This exercise (which was to be conducted on a hectarage stretching over 26.8 ha.), was to last for a period of one to two years. Thereafter the trial activities were to be taken over by the Research branch of the Department of Agriculture.

In the second phase, the site was to be extended by a further 80 ha., where the relocatees would be settled on irrigated plots.

And the third phase was to be a period of consolidation when the experiences gained in the first two phases would be gathered and utilized. The area under cultivation was to be extended to reach a maximum of 5600 hectares.

b) Hectarage and Field Lay-Out : Although the development plans gave very ambitious irrigable hectarages (7,700 by Roberts, Mullins and Barnett [1961], and 14,000 by the Ministry of Rural Development [1969]) the actual field under the scheme is only 62 hectares. Out of this, 7 hectares is used as a government orchard; therefore only 55 hectares is actually under cultivation by the relocatees.

Initially the plot sizes were a hectare each, with three sub-divisions - 0.2 ha. was to be used for vegetables and fruits; 0.4 ha. for the cultivation of cotton, sunflower or beans; and the other 0.4 ha. for green maize production. In 1980 the plot sizes were reduced to 0.2 ha. This was seen as the most feasible size at the level of the farmers' cropping pattern and irrigation farming expertise. It was also a way of increasing the number of participants.

c) Management : Though the feasibility studies on the BMPIS were conducted in the early 60s, it was only in 1970 that the actual physical work was initiated under the Projects Division of the then Ministry of Rural Development (now the Ministry of Agriculture and Water Development). In mid-1977 the Projects Division withdrew its services from the scheme, and it came under the direct supervision of the Department of Agriculture. Because of GSDP's involvement with other schemes in the area (Siatwiinda and Nkandabwe), the Department of Agriculture requested it to provide occasional mechanical assistance in the maintenance and repair of the scheme's machinery.

In 1979 it was proposed at the ministerial level that GSDP should also assist the farmers in the management of the scheme. In 1980 a GSDP Agricultural Adviser under the Gossner Mission Assistance Programme was assigned to BMPIS, as well as to the whole of Chief Sinazongwe's area.

The running of the scheme is under a close cooperation of three parties :-

1. The Farmers Executive Committee;
2. The Department of Agriculture, through its extension officer assigned to the scheme; and
3. The GSDP, through the Agricultural Officer assigned to the scheme.

The Farmers Executive Committee deals with the farmers' affairs (in terms of plot allocation and dislocation, scheme discipline and scheme

maintenance), and it also acts as a link between the farmers and other related or external institutions.

The Department of Agriculture, through the extension officer, provides technical assistance to the farmers, and it also manages the government's orchard plot. The GSDP officer provides professional advice, both technical and managerial, to the farmers, as well as to the Department of Agriculture.

FINANCE : Unlike the Siatwiinda scheme, which has received some funds from other external sources, through the auspices of GSDP, the Buleya Malima scheme has received all its capital financing from the Zambian government. Table 10 shows the estimated and actual investments in Buleya Malima in the period 1970 to 1979.

d) Farmer Involvement : Unlike Siatwiinda, where plots are allocated to individuals, at Buleya Malima plots are allocated to households. In the first and second phase of the scheme, twelve (12) families were involved. But because of the management changes that the scheme has gone through (firstly, the Projects Division; secondly, the Department of Agriculture; and now the GSDP), it has not been possible to come up with statistical data which could allow an assessment of farmer/household involvement over a period of time. Nevertheless, it has been possible, in some cases, to find out the number of people enlisted in the production and marketing of particular crops [refer to the section on crops, below].

Again, since plots are allocated to households rather than individuals, it has not been possible to make an assessment of women involvement as sole plot holders, though many can be seen working in the gardens. However, a women's club, with a membership of thirteen (13) women, has a plot in the scheme [see the section on Community Development, p.30, for the impact of this club on the area].

e) Crop Production : From the crop production trials, in the first phase, a crop rotation pattern consisting of cotton and sunflower in the rainy season, with vegetables and green maize in the cool dry season, was adopted.

e.1 Cotton : Production in Gwembe Valley is heavily promoted by LINT Company of Zambia (LINTCO). Every agricultural season, LINTCO posts an officer at the scheme to process loan applications, sell requisites and tools, and handle the cotton intake. Table 11 provides statistical data on cotton production at Buleya Malima in the period from 1976/77 to 1980/81. This Table clearly shows that from the 1976/77 to 1979/80 agricultural seasons, the hectarage and the yield of cotton was increasing, though there have been some fluctuations in the intensity of output per hectare. In 1976/77, the average output per hectare was 1,303.81 kgs; in 1977/78, it was 674.78 kgs; in 1978/79, it was 1,755.04 kgs, which was the highest recorded ever; and then it started decreasing. In 1979/80, the average output was 1,649.62 kgs; and in 1980/81, it was 1,204.25 kgs. The drought situation which has beset the southern African region in the past two years, is being given, by the officers attached to the scheme, as the main cause of this phenomenon.

government decided to withdraw the marketing services provided by ZANHORT. Marketing problems then appeared because farmers could neither manage to organise a reliable market, nor arrange regular transport to take produce to the plateau and along the railway line. Thus the drop in marketed vegetable produce in 1982 could have been caused by a combination of three major factors :-

1. Reduction of production by the farmers, as a result of the past year's experience of not finding a reliable market;
2. Flooding of the market by other producers; or
3. Overstretching of the scheme's resources in terms of manpower and machinery, due to the drought situation.

ASSESSMENT : In periods of reliable water supply, ready markets and regular transport of produce to the plateau, vegetables have played a very significant role in the generation of incomes to those involved in production and distribution (see Table 9 on revenues).

It would be interesting to have a nutrition survey which would study the impact of vegetable production at Siatwiinda on the local community. But it can be safely assumed that since the absolute number (see Table 3) and proportional (see Table 4) number of women involved in the scheme is increasing, then some of the produce is certainly consumed in their households. The marketing problems that have been experienced in the past few years can also have a beneficial effect on the local supply of vegetables. Farmers begin identifying themselves with the local market. But when an external marketing arrangement is assured, with a favourable price, then most of the produce will leave the valley, and the impact on the improvement of the nutrition standards of the local community is likely to be very limited.

RECOMMENDATION : The promotion and expansion of vegetable production at Siatwiinda should be taken very cautiously. The local vegetable market cannot be expected to expand in the foreseeable future. This is a very competitive farming activity : it is more beneficial to those producers nearer the main market (the urban areas); and some local consumers now produce their own vegetables in their backyard gardens. For all these reasons the production of vegetables should be discouraged. At the same time it can also be suggested that the size of the vegetable plots should be reduced, so that the number of producers is increased and the base of participation is increased. Individual/household production outside the scheme should also be encouraged, using the scheme as a demonstration plot. This is likely to have an impact on nutrition requirements.

If the recommendation on rice (p.14) is accepted, then the production of vegetables at the scheme can be reduced in favour of rice, since vegetables are mostly grown in the dry season, anyway.

e.5 Scheme Extension and Consolidation : As already pointed out in the section on hectarage and field lay-out (p.10), the scheme has a provision for further extension of 80 to 100 hectares. In 1980, the first phase of the extension, to reclaim 10 hectares which used to be subject to

seasonal inundation, was begun with the construction of a dyke. In 1981/82 the second phase to extend the scheme by 30 hectares was embarked upon, and is still in progress. And the third phase, which will require the extension of the scheme by a further 40 hectares, has been planned for the 1984/85 financial year.

The perceived need for the extension of the scheme follows from the belief that a suitable crop for the area has been found. Rice has proved to be the most appropriate crop. The farmers' response has been quite encouraging, and there has been a growing list of people willing to join the scheme. And the local community is developing a taste for rice eating.

But the decision to extend the scheme without first considering a consolidation stage is questionable. Before extending the scheme, it might have been better to assess the management capacity of the Farmers Executive Committee first, on the existing plot. If it is weak, then ways of improving it should have been sought. An inventory of all the resources (including the quality of the soils and the water), manpower and machinery used during the pilot stage, should have been carried out so as to identify areas which needed improvement or replacement. The issue of cropping patterns (as between rice and traditional food crops [sorghum, bulrush millet and local maize, kaile]), should also have been considered. Only then could the extension of the scheme have been properly planned.

I am in favour of the consolidation programme presented by the Gwembe IRDP Coordinator in his 1984 Budget estimate. The scheme has reached a stage where it can no longer continue to be a pilot scheme anymore. A phase of operation should start.

1.2 Buleya Malima Pilot Irrigation Scheme

a) History : The Buleya Malima Pilot Irrigation Scheme (B.P.I.S) is one of the schemes which were conceived during the resettlement period, to compensate the relocatees for the loss of land caused by the formation Lake Kariba. It was to be considered a pilot scheme, in that information was still needed which would enable the planners to recommend the most feasible crop for the area from a climatic, economic and social point of view, as well as to assess the peoples' adoption of irrigation cultivation methods.

Three different irrigation systems were envisaged :-

1. Damming of the Nangombe River, which would enable the irrigation of 607.05 hectares under gravitational force;
2. The establishment of a large permanent pumping station with a reticulation of pipes and canals which would allow irrigation of a further 3440 hectares; and
3. The utilization of the Lake Kariba drawdown area resources with the use of portable pumping sets. Under this system the irrigation of 1618.8 hectares was seen to be possible.

The implementation of B.P.I.S was to be in three distinct phases. Phase one was to be considered as a trial period in which the three

Mkandabwe dam is the only one which is still in use.

Had it not been for the GSDP, this scheme could have faced the same fate as the others. The GSDP came to be involved in this scheme in 1972. It carried out major repairs to the dam and the irrigation field water distribution channels. A year later, in 1973, the scheme had been revived, and some local farmers came to take up plots.

b) Hectarage and Field Lay-Out : The total hectarage of the scheme is 6 hectares. There are 46 plots of 0.1 ha. each. Plots are allocated to interested farmers.

Unlike the other two schemes (Siatwiinda and Buleya Malima), the Mkandabwe Irrigation Scheme is under gravity irrigation, though the need arises in the late dry season, especially during the drought periods, for an engine pump. Water is drawn from the Mkandabwe River.

c) Management : Since the Mkandabwe scheme is under gravity irrigation, there has not been much need for external institutional support. The only assistance needed is that of technical advice in infrastructural facility development, crop production (training), and disposal of produce (marketing).

To all intents and purposes, the scheme is run by the Farmers Executive Committee (FEC). An extension officer for Mkandabwe Agriculture Camp provides technical advice. A GSDP agricultural officer responsible for Buleya Malima also provides occasional advice to the FEC.

The FEC allocates plots, ensures scheme discipline, takes care of the maintenance of the scheme, and collects water fees which are ploughed back in infrastructural improvement.

Apart from the costs borne by GSDP in the improvement of the scheme in the 1972/73 period, there has not been much investment since. The costs to the government and GSDP are only technical (the AA and the GSDP officers' advice). However, the experience of the prevalent drought situation has revealed the need for a standby engine pump. The water level in the reservoir, as of this year, has gone below the scheme's water intake channel. Thus there is a need to pump water. To alleviate the situation the GSDP is making efforts to install a pump at the scheme.

cont./ d)

d) Farmer Involvement : It has not been possible to find out the actual number of farmers involved in the scheme before the GSDP revived it. After all the repairs had been done in 1972, 44 farmers and a nearby primary school took up plots.

The number of farmers has been static at 44 since 1973, because both the total hectarage (5.6 ha.) of the scheme and the number of plots (44) is limited.

As in Buleya Malima (H) the plots are allocated to households, in the name of the man; there being no evidence of any plot under the ownership of a woman. But it was seen that plots were mainly maintained by women.

In infrastructural improvement work men and women work together. Men do the digging of the reservoirs and canals, and women clean the trenches and canals.

e) Crop Production : The main crops grown at the scheme are green maize and vegetables (tomatoes, onions, rape, okra, egg plants, etc.). In the 1980/81 season 4 x 80 kg. bags of rice were also sold from the scheme. The cropping pattern is that the cereals (maize and rice) are grown during the rainy season, and the vegetables (including some green maize) are grown mainly in the dry season.

From this cropping pattern it can be deduced that the irrigation facilities provided are not fully utilized during the rainy season. It was only in the 1980/81 season that supplementary irrigation was done to enable the growing of rice. This could be the result of the conflict in time and labour allocation between the irrigation scheme requirements and the dryland field activities (where the traditional food crops are grown). [See the chapter on Dryland Farming Programme, p.25].

f) Marketing of Produce : The marketing of cereals like maize and rice finds a ready market in the area; there are very few people involved in the cultivation of these crops, because the environmental conditions are not favourable to the varieties (especially SR52 maize variety) being propagated by the Department of Agriculture.

The ZAMBORT effect, as seen in other schemes (pp.14 and 19), is also felt at Mkandabwe. But the vegetable marketing problems being experienced at Mkandabwe are having an income generation spreading effect on the area. Some people who are not involved in the scheme as producers become involved as traders. They buy the produce from the scheme and sell to passing motorists and bus passengers. These people provide a ready market for the produce. They lift the risk burden of perishables from the producers, and they also give them enough time to concentrate on their work at the scheme.

The impact of the scheme on the nutrition standards of the local community requires a survey, but it can be assumed that since there are more people involved in the scheme's activities, in production and marketing, there should be some positive effects.

From my assessment, it seems that the problem is more economic and technological than a matter of rain availability. The scheme gets its water supply from Lake Kariba, but because of the frequent breakdown of the engines it has not been possible to maintain a steady supply of water to the scheme. The training of farmers, once enlisted, is also of major importance. But it seems the training is not seen as an on-going scheme activity.

e.2 Sunflower : is also produced at Buleya Malima, but on a very limited scale. Table 12 shows sunflower production statistics between 1978/79 and 1980/81 seasons. The relatively low involvement of farmers in sunflower cultivation, as compared with cotton, is probably the result of the attractive facilities provided in the cotton package. The cotton programme has its own specialized extension officers and LINTCO provides seasonal loans, under very favourable conditions. The payment to farmers is also not cumbersome. Sunflower cultivation is being propagated by the Department of Agriculture, like any other crop. It is not a priority crop in the area, though it is possible for an individual/household to negotiate for a seasonal loan from AFC.

The decrease in the average yield per hectare should be a matter of concern. The technological and economic factors already mentioned in the section on cotton also apply here. Water availability and training of farmers are the major issues.

e.3 Vegetable Production : Just as at Sistwiinda, vegetable production at Buleya Malima is concentrated in the cool dry season - that is, after the harvest of the rain-fed crop. The main vegetables grown are cabbages, tomatoes, rape, okra and green maize. Due to the management changes, frequent staff transfers and the low attention paid to the drawing and upkeep of clear and concise records, it has not been possible to derive any statistical data on vegetable production. Unlike cotton and sunflower, which have centralized marketing arrangements, vegetables are sold on the open market. The producer looks for his/her own market, and he/she is not compelled to submit marketing reports to the Scheme Adviser, nor to the Farmers Executive Committees.

The location of the scheme (18 kms from Sinazeze, off the Masmba-Batoka road), and the distance to the potential market (the plateaus along the railway line), and also the withdrawal of ZAMHORT operations in 1980, have all severely constrained the optimum utilization of the scheme's capacity to produce vegetables.

It has not been possible to assess the impact of vegetable production on rural income generation and the improvement of villagers' nutritional standards : there are no long-term statistical data which could indicate the number of households involved in vegetable production each season, and also the absorptive capacity of the surrounding community of the produce from the scheme. But it can safely be assumed that, despite the marketing bottlenecks, those involved in vegetable production have to some extent benefitted. Problems encountered in transporting the produce to the railway line have also assisted in keeping the produce in the area.

RECOMMENDATION : refer to SPIS section on vegetables, p.15 above.

f) Water Distribution : The scheme gets its water supply from the Lake Kariba. A diesel engine pump is used to distribute it. Though there is a reservoir, the water is now being supplied straight from the source (Lake) to the plots. This makes the fields very vulnerable to water shortages whenever there is an engine breakdown (see the section on the workshop on the logistics of machine repair, p.36). The reservoir is not being used because its soil structure allows a great deal of seepage.

Apart from the marketing constraints, the water supply should be seen as one of the major factors that has contributed to the lowering of the farmers' confidence in the scheme. The morale can be restored only if there could be a reliable water supply system, with a well planned time schedule. This will require the use of the reservoir. The seepage problem needs to be looked into seriously.

g) Conflict in Land Use : The problem of conflict in land use between livestock rearing and crop production is one of major importance in any strategy for agricultural development in the Gwembe Valley. The area has a very strong tradition of animal rearing [see section on livestock p.28 below]. The problem that the promotion of crop production, without livestock consideration, entails is well exemplified at Buleya Malima.

Apart from the use of oxen in land preparation, the scheme has no livestock development component. Since most of the land is being devoted to cotton production, through LINTCO's efforts, the problem of deprivation of grazing fields becomes very acute indeed. According to the local custom, the onus of protecting the fields from livestock wandering does not fall on the owner of the animals, but on the cultivator.

Though the scheme has a fence around it, at times animals find their way into the scheme, and in the absence of plot holders crops are destroyed.

The security of the scheme is, at the moment, in the hands of the Department of Agriculture, mainly because of the citrus tree plot it has in the scheme. But because the plot holders depend on the scheme for much of their livelihood, they should take over most of the functions on their part of the scheme. This should include the security of the scheme. The Farmers Executive can form a security sub-committee which could look into this issue.

1.3 Nkandabwe Irrigation Scheme

a) History : During the resettlement period, a few small dams were constructed on some of the perennial streams. These dams were to create reservoirs for livestock water needs, and also to provide water for crop production in irrigation schemes. As pointed out earlier [p.10], it is very difficult to find out the actual number and location of some of these dams, as most of them have since silted. The

the scheme. The GSDP Sinazongwe area agriculturalist provides training in the use and maintenance of the pumps.

- d) Farmer Involvement : So far, only seven (7) farmers are involved in this scheme. But there is an encouraging response if one looks at the number of people requesting to be enlisted. In spite of the portability and easy operation of the pumps, none of the seven farmers in the scheme is a woman. But this does not mean that women do not use the pumps once acquired by their husbands.
- e) Crop Production : In the tradition of the Gwembe community the Silili system of cultivation used to be used for the growing of the local maize (kaile) [Scudder, 1962, p.30], and some vegetables. But in the GSDP programme, especially at Chiabi, rice production is being attempted. Since the programme has just been started, the hectareage being used is still expanding (as the lake is still receding), it has not been possible to estimate the yield.
- f) Assessment : Though the scheme seems to be socially feasible, it relies too much on the personal involvement of the Sinazongwe area GSDP agriculturalist. It seems that an attempt has not been made to involve the local extension officers. This should have been done right from the start, whenever a farmer is recruited (or preferably, the extension officer should recruit the farmers). This would greatly reduce the reliance on an officer stationed some way away, and his transport costs.

The personal involvement of the Sinazongwe area agriculturalist has also affected the geographical location of the scheme. Since this officer works only in Chief Sinazongwe's area, he has not extended this scheme to Chief Iwemba's area. It can be suggested that, since the hand-pump programme has already been introduced in Chief Iwemba's area, this scheme should also have been extended there. The capacity of the responsible officer could be spread if the local extension officers were involved. This argument can be reinforced by the fact that the south-end of Chief Iwemba's area is greatly deprived : this is the area which has been worst hit by the drought. It should be designated a high priority area.

2. Dryland Farming Programme

- a) History : Though the GSDP has been mainly concerned with irrigation schemes, it has also had from the beginning a dryland farming component. But its activities in this field are limited. As already discussed, the Third National Development Plan did reinforce the GSDP role in irrigation activities. But over the years the project officers and observers [Buntzel (1980) and Scudder et al. (1982)], have noted the contradictions between irrigation and dryland farming. Buntzel (1980, p.8) questioned whether emphasis on irrigation was the right approach for the development of agriculture in the Gwembe Valley.

Dryland farming activities have mainly been conducted in Chief Iwemba's area. This is due to the fact that GSDF activities were initially mainly concentrated in this area : since this programme was carried out in conjunction with the rural works programme, it was therefore more

relevant in the areas where the infrastructure (roads and bridges) was being improved.

- b) Hectarage and Field Lay-out : The plot sizes in this programme are of one hectare each : one half of it under cotton and the other under maize cultivation. The programme is being conducted on the farmers' own fields.
- c) Management : The GSDP agriculturalists together with the local extension officer visit farmers, in the villages, to teach the LIMA concept. The courses are on various agricultural activities; land preparation, planting, weeding, harvesting, crop rotation, erosion control, animal husbandry, etc. Two villages are visited each week. A follow-up visit is made after eight weeks : thus each village in the programme is visited six (6) times each year. This ensures a full year's practical teaching to each village. This programme was organised in such a way that the participating farmers get employed by the GSPP for work on road and bridge improvement during the dry season. In the rainy season they go back to work on their own fields. Whilst employed they get their wages partly in kind (in terms of requisites and seed), and partly in cash. When they go back to their own fields the GSPP agriculturalist teaches them agricultural techniques.

Some arguments for the dryland farming programme are :-

- learning by doing;
- learning in their own villages;
- practising in the farmer's own field;
- both men and women participate;
- extension officers appreciate problems pertaining to a particular village; and
- other programmes (nutrition, water development etc.) can be included.

- d) Farmer Involvement : When the dryland farming programme was initiated, it was planned that a hundred (100) farmers would be involved in each four year period. In 1973, very little could be done because of the drought situation. When the GSDP was revitalized in 1976, forty (40) farmers were involved in the programme. In 1977, twenty (20) more farmers joined. Assistance to these sixty (60) farmers ceased in 1979. Sixty (60) new farmers were to be enlisted.

Looking at the 1982 GSDP Annual Report and the 1983 Dryland Farming Programme, it becomes clear that the target has shifted from individuals to villages, though the number of participating farmers per village is recorded. The effect of this is that, although the visits to villages could be maintained, the number of participating farmers varies. Whereas the initial plan had more coordination with those involved in the Rural Works Programme, mostly men, the new turn has brought about the involvement of women. In the 1982 period, the project officer reports that 45% of the participants were women.

- e) Crop Production : Since the main thrust of this programme is the training of villagers in order to raise their level of competence to that of small scale farmers, it is not possible to present any statistical indicators which could show the participants' response.

1.4 Hand Pump Irrigation Programme

a) History : In 1973 GSDP embarked on a 'hand pump irrigation programme' in the area. But most of the efforts were concentrated in the Kafwambila area, which is quite remote. The initial response from farmers was quite encouraging, but GSDP failed to provide the necessary logistical support, as the Zimbabwean wars of liberation escalated and the area became more of a battlefield.

Access to Kafwambila is very difficult. The roads are in bad condition; most of the bridges have been washed away, and some have deteriorated due to lack of maintenance. Efforts to have the roads improved are being hampered by the fear of landmines, as one of the government graders was blown up.

Some farmers in the Sinazeze area also took part in this programme, but they were very few in number.

b) Hectarage and Field Lay-Out : The hand pumps were used on the farmers' own gardens, especially those along the river. The recommended plot size under this system was 0.05 ha. per pump. Information available indicates that the total hectarage under this programme was 0.75 ha. Kafwambila had 0.6 hectares and Sinazeze had 0.15 hectares.

c) The management of this programme was easy, since the pumps were used in the farmers' own gardens. Thus there were few organisational problems. The pumps were given on a loan basis; farmers were supposed to pay a K10 deposit when collecting the pump. A GSDP Agriculturalist provided the technical and professional advice, going out to visit the farmers. His transportation costs were borne by the GSDP.

Apart from the security situation, the expansion and continuation of the hand pump programme was hampered by the fact that it relied heavily on the GSDP Agriculturalist alone. When his contract expired there was no one to continue his work.

d) Farmer Involvement : In the Kafwambila area, the programme started with twelve (12) farmers, and in Sinazeze with only three (3) farmers. More farmers could have received the pumps, but they have not been mentioned in the GSDP reports. There is no indication in the reports of the actual number of hand pumps bought and distributed to farmers.

Though these pumps could have been given to men, they should be seen as household properties, since they were mainly used on vegetable gardens. But we cannot deny the fact that to repay the loan the pumps had to be used for the production of a cash crop.

f) ASSESSMENT : Without statistical indicators it is difficult to assess this programme's impact on household incomes and nutrition. Moreover, such an exercise could not in any case be very revealing, since the programme was conducted for only one season [1972/73]. But since these pumps are simple to operate, do not need fuel, are portable and not very costly, their impact on the area could have been quite considerable.

To reduce the costs of a motorized officer visiting each and every farmer, the local extension officers should have been used right from the beginning. Before the pumps were distributed, the farmers should have been taken to Kalima Farmers Training Centre for an intensive training in hand pump irrigation techniques. Women should also have been involved in this, since it is usually they who work on vegetable gardens.

1.5 Drawdown Irrigation (Silili Cultivation)

a) History : The feasibility studies by Barnett et al. [1961] of the irrigation possibilities in the Gwembe Valley, pointed to the need to look into the potentials of the Lake Kariba drawdown area. Thayer Scudder has elaborated on this [Scudder, 1972] and has recently provided some suggestions on the utilization of this resource [Scudder, 1982]. The Food and Agriculture Organization established, in 1980, an agronomic research trial at Chiabi to look into the cropping patterns of this system. [This scheme is outside the purview of this report.]

Early this year, 1983, GSDP has started a hand-pump (silili cultivation) programme in the area. This programme is mainly concentrated in Chief Sinazongwe's area. Some of the participants are at Chiabi, at an area almost adjacent to the FAO Research Plot, and in some areas along some of the rivers.

b) Hectarage : The assessment of the actual hectarage used under this system could not be made, for a number of reasons :-
1. the programme has only just been initiated;
2. the lake is still receding;
3. most of the rivers are dry (not possible to determine their normal levels); and
4. there is no coordination between the lake level regulating agency [CAPCO] and the Department of Agriculture.

The Soil Survey Unit of the Ministry of Agriculture and Water Development is currently working in the area. It is hoped that they are liaising with CAPCO. However, since the farmers are using hand-pumps which are actually suitable for the system, considering their portability, the plot size per pump/user should be limited to 0.05 ha. This will enable intensive cultivation and enlargement of the number of participating farmers.

c) Management : Like the hand-pump programme, the drawdown (silili cultivation) irrigation system presents no complicated management problems. It is also practised on the farmers' own plots.

Silili gardening, following the drawdown of the rivers (and now even the lake), is a long-evolved agricultural activity of the Gwembe community. It used to be practised along the shores of the Zambezi River, before the lake's formation [Scudder, 1962, p.51].

The system seems to have combined well with the use of hand pumps for drawing water (instead of using buckets), when watering the crops. The GSDP provides a hand-pump on loan to the farmers interested in joining

The problem of land utilization in the Gwembe Valley (as between crop production and livestock raising) should be looked into in depth.

The Scudders/Colson team (1982) offered three options for the improvement of GSDP involvement in the Gwembe Valley livestock industry :-

1. To provide financial assistance to the relevant government departments in order to facilitate their current work, and to encourage them to work more closely with the GSDP;
2. For Government departments to second to the GSDP a livestock officer who would work closely with the GSDP officers; and
3. For the Gossiner Mission to recruit directly to the GSDP a livestock specialist who would work closely with a government counterpart seconded to the GSDP.

They favour the third option, but because of the time that it can take to recruit a suitable candidate, they suggest the implementation of the first option, as a short term measure. I also favour the first option, not as a short term measure but as the most feasible long term solution.

I feel that energy should not be directed from existing institutions to the strengthening of the GSDP, but rather that resources which come through the GSDP should be directed to strengthening and improving the implementation capacities of the relevant existing institutions. In this regard, any livestock development programme considered under the GSDP should be seen in the light of the implementation capacities of the relevant institutions. If the capacity can be improved by the provision of a livestock specialist, and if the Gossiner Mission can provide (through the GSDP) such a person, then he should from the outset work within the existing institutions. This will enable such a person to understand fully the environment in which those particular institutions operate; and it will also help to establish a precedent for the future withdrawal of the GSDP support, once the capacity of the institutions in question has been improved.

5. Community Development Activities

Community development programmes under the GSDP were initially seen as secondary to irrigation activities. But over the years they have had a much wider effect in the Gwembe Valley. The activities have ranged from the usual 'traditional' women's activities, under women's clubs; nutrition programme; self-help projects; village water supply; and so on, - to the establishment of locally based, grassroot institutions. It is the building of local institutions that sets the GSDP apart from other regional development projects in Zambia.

5.1 Women's Activities : The GSDP's involvement in special women's activities started in 1980 with the arrival of a women's activities promotion officer. Three clubs - Lusumpuko, Sinazene and Buleya Malima - have been receiving GSDP support in the three year period.

Lusumpuko Women's Club : was established in October 1980 in Chief Nwemba's area, at Siabaswi village. The aims of the club were very attractive. The club was to use the local resources, sisal (out of which the fence of Siatwiinds Irrigation Scheme is made), and water, from Lake Kariba, to make ropes. The local community was identified as the main market.

The rope-making programme was also seen as a way of involving the local women in GSDP activities, and it was to assist in the generation of rural women's incomes. Thirteen (13) women were involved in this club. The club met many economic, social and technological problems. The work involving the cutting of sisal, cleaning (which is a very unpleasant job), and rope making, is very labour demanding. For the project to be attractive the remunerations had to be high. But rope could be imported from Kenya at a far cheaper price than the club would have to charge just to break even, let alone make a modest profit. And the fact that all club members were young unmarried women proved very problematic; those who got married usually left the area, and the club. The rope-making machine was also not appropriate for making the type of rope needed by the local community. It was limited to rope sizes between 6mm. and 12mm; the smaller size proved to be too big for the fishermen's requirements, and the larger was too small to be used on oxen. Thus the ropes could not be put to any productive use, and therefore could not find any ready market. Accordingly, early in 1983 a decision was made to discontinue the sisal/ rope-making programme, and the club turned to the usual women's club activities - knitting, sewing, vegetable growing, etc.

ASSESSMENT The enthusiasm of the participants when the project was started (in spite of the unpleasantness of the sisal cleaning part), shows that women can organise themselves in tackling even jobs once assumed to be too difficult for them, if the right conditions are provided. The problem was not so much with the women as with the project planners. They did not involve elderly and married women, people who are likely to stay much longer in the area. And despite the fact that the club could not control the market, a survey could have been conducted to identify the type of ropes which were likely to find a ready market within the community. If these socio-economic and technological dimensions had been seen in their right perspective, the programme might have survived.

The Sinazene Nutrition Group : is involved in five clinics. It conducts preventive health programmes and practical cooking lessons in villages. Due to lack of funds, the GSDP involvement in this group has been limited to an occasional advisory role.

The Buleya Malima Pilot Irrigation Scheme Women's Club : poses very interesting questions about the general direction of women's club efforts in rural areas. The club was established in 1981; it has a membership of thirteen (13) women. They all work together in one of the plots at the scheme. The club operates like any other farmer in the scheme. In 1982 the club grew rice and Irish potatoes, but due to the water problems the yields were disappointing.

Looking at the backgrounds of club members, one finds that ten (10) of them are wives of government extension officers, two are wives of fisher

Nevertheless, training under this programme is mainly on maize and cotton cultivation, with an emphasis on the latter.

f) ASSESSMENT : If there can be any project component which is going to have a wider and more appropriate impact on the target group - the poor - then it should be the dryland farming programme. But this will require some adjustments to the way in which the project is presently being conducted.

The first priority should be a reduction in the personal involvement of the GSPP agriculturalist, and a greater reliance on the local extension officers. This will require some improvements in the facilities needed to conduct the training courses. It has to be noted that one of the major resources provided by the GSPP officer is transport. The local extension officers are usually immobile. This is one of the major bottlenecks in the agricultural extension service. If a GSPP officer (expatriate) can be paid travel allowance, I do not see any reason why a Zambian extension officer cannot be considered for a bicycle or travel allowance whenever he uses his own bike. These facilities should be part of the programme.

It seems to me that the personal involvement of the GSPP officer, in visiting each and every farmer (now village), is costly in terms of travel; it also deprives other areas of his assistance. His services could be spread over a wider area if he worked closely with the Farmers Training Centre, planning village courses and, of course, making occasional visits to farmers/villages. This view is supported by a number of extension officers interviewed.

Since LIMCO is already supporting the extension service in the promotion of cotton production, and the maize variety being propagated, SF52, is not doing well in the valley, it can be suggested that the dryland programme supported by GSPP should pay more attention to the promotion of sorghum, millet, and the local maize (kaile) - in other words, the local food crops.

3. Rural Works Programme (RWP)

a) For the history and management of this programme, refer to chapter 2 above, on the Dryland Farming Programme.

b) Projects Undertaken : Although the improvement of roads and bridges was the major occupation of the RWP, it was also involved in other construction works. In 1981, the RWP team improved the fencing of the Siatwinda Pilot Irrigation Scheme, and they were expected to involve themselves in the construction of weirs, dams and wells, erosion control etc. Among the roads that were improved under this programme are the 8 kilometer stretch between Hyanga and Kafwambila, and the Malima-Sinazongwe road.

c) ASSESSMENT : Infrastructure development plays a very important role in rural/agriculture development. The extension service often shuns inaccessible areas. Farmers also face transport problems in bringing their requisites and machinery to their homesteads, and, at the same

time, they find it difficult to deliver their produce to the markets. Since the Gwembe South area has only one tarred road, it is necessary to connect areas of agricultural potential to the main road.

The RWP's contribution in terms of income generation and its productive use, remembering that part of the income is in kind (agricultural inputs), is quite remarkable. This is also reinforced by its bias on labour, rather than capital intensive methods.

The major problem with the RWP is that it entrusts the supervision of road and bridge construction to agriculturalists, people with no expertise in this field. Even with good intentions, these officers cannot fully exercise their talents, time and interest on their own fields of expertise. And at times, if the work programme is not strictly scheduled, construction work can be stretched even into the agricultural season. Households are then deprived of the man's labour, and a great strain is put on the capacity of women; this in turn affects the household's agricultural activities.

It is because of the factors that I support Buntzel's recommendations that the RWP be handed over to the district council. The council should have enough expertise in infrastructure development; if it hasn't, then measures should be taken to improve its capacity.

4. Livestock

In spite of the importance of livestock in the traditional economy of the Gwembe Valley, the GSPP has not been involved in any significant livestock development programme. The only project tried involved pigs, but it was on a very limited scale. In the dryland farming programme some advice on livestock improvement is given, but it is also limited.

Pig production was introduced in 1978 in Chief Mwomba's area, with three (3) farmers. For easy access to credits, the programme was established in areas where credit unions existed, though the GSPP assisted in the purchase of feed.

Management : The participating farmers raised the money for the piglets and they had to build the sties. The GSPP provided loans for feed. The Cold Storage Board had agreed to purchase pigs, if there were more than twenty (20) pigs at the time of sale. The main market, however, was seen to be the local community. But towards the end of 1980 it became obvious that the programme could not be continued without a reliable supply of feed. It was therefore discontinued.

ASSESSMENT : It can be said, very strongly, that the pig project was ill conceived. This project should have been designed as a livestock development project aimed at resolving the conflict between crop production and livestock raising. This conflict is of major importance in any discussion of agriculture promotion in this area. The problem of animal wandering in the Muleya Malima Pilot Irrigation Scheme [refer to p.20], is a case in point. With most of the arable land (also good grazing land) going to cotton production, the problem of provision of enough grazing fields becomes very acute indeed.

7. Institutional Building

Unlike other regional development projects in Zambia, GSDP has assisted in setting up locally-based, grassroot institutions. These are the Valley Self-Help Promotion Society, the Gwembe South Builders Cooperative and the Credit Savings Unions.

Though I have, in my assessment of other projects' components, supported the idea of letting existing institutions implement the planned programmes, with GSDP providing assistance, there are certain circumstances which demand the establishment of new institutions. GSDP has found itself in situations where the effective utilization of its resources required special institutions which are outside the normal government arrangement, but receptive to the Gwembe community's sentiments.

Valley Self-Help Promotion Society (VSP) : The Gwembe Valley Self-Help Promotion Society was established in 1979. The GSDP management thought of establishing the VSP to circumvent government bureaucratic requirements in channelling external donations, which it used to receive from time to time. Another reason was that some project activities could be self-supporting (and could therefore generate some income which could be ploughed back for the area's development), but only if they were under a non-government body.

Management : The VSP is registered as a society. It is governed by a general meeting which elects the executive committee. The membership of the general meeting is drawn from the local institutions - such as the traditional chiefs, farmers executive committees, religious groups, credit unions and the local community. The executive committee decides on VSP activities (new and on-going), approves loan applications and employs the secretariat, which is headed by a coordinator.

7.1 Valley Self-Help Promotion Society

VSP is involved in quite a number of activities. It provides loans for a wide variety of purposes - seasonal agricultural loans; home improvement; and even educational loans to pupils. It was not possible to find out the number of loans, or the total amount of loans in each sector. The maximum amount an individual can be lent is K500.

In its crafts programme, VSP has been involved in the production of axes and in the purchase and collection of village-made crafts. The axes programme is solely for the generation of income for VSP, but the village crafts programme is mainly geared to the promotion income-generating activities in the villages. Every week VSP spends between K200 and K300 on the purchasing of crafts from villages. The crafts are mainly sold in Lusaka at the Tonga Crafts Shop in Kabulonga township. Some of the crafts which are of historical importance are being kept at the Tonga Museum which VSP maintains at GSDP Nkandabwe camp. But the preservation of most of the materials in the museum needs professional handling. Neither VSP nor GSDP can provide this. To lift this burden from VSP, the Department of Cultural Services should run this museum. But the

materials themselves should not be transferred elsewhere; since they represent the Gwembe way of life they must be kept in the area.

VSP is also involved in commodity selling. It sells salt and sugar in the villages. In the prevailing drought situation, VSP has assisted in the distribution of foodstuffs to remote areas. In times of good harvest and reliable marketing arrangements, VSP purchases agricultural produce from farmers. Since VSP has its own lorry this provides a very big relief to farmers, who find it difficult to make their own personal transport arrangements to bring their produce to the market on the plateau.

Apart from food provisions VSP also sells bicycle spare parts, building materials and second-hand clothes (sent by well-wishers in Europe).

Through its income-generating activities VSP has been able to provide materials that are needed in self-help projects - for example, in the setting up of clinics at Chiabi and Sikaneka, and the Sinazene Self-Help staff house.

Recently, VSP has embarked on a school uniform tailoring programme. To obtain uniforms people usually travel to Choma : to reduce the costs, VSP has eliminated the need for such travel. Apart from being worn for school purposes, uniforms compel parents to spend some of their income on children's clothing.

For the future, VSP is planning to run a bus service from Kafwambila to Choma. The normal service usually runs along the tarred road from Patoka to Maamba. Transport to remote areas like Siameja is very difficult to come by. The nature of the roads is a major hindrance. VSP has to ensure that the roads are improved before it introduces this service.

ASSESSMENT : It seems that VSP is providing a valuable service to the valley mainly because of its flexibility, and (most importantly) because it is controlled by the local community. But it has to be realised that, at its present capacity, VSP is overstretching itself.

It can now be asked whether VSP can operate independently, without GSDP support. This would require VSP to attempt to operate on a profit margin. This would force it to concentrate only on those activities which can ensure a reasonable income. And this, in turn, would mean a negation of its role as a service unit in the task of building up a self-reliant spirit in the communities. If it is to fulfil this objective, then it cannot, at the same time, be expected to operate at a profit. Therefore, for the foreseeable future, VSP will still need to rely on external (or local) finance and technical assistance. In the long term perspective, VSP will have slowly to disappear, with its functions gradually being taken over by societies or other relevant institutions.

7.2 Gwembe South Builders Cooperative (GSB)

Like the VSP, the Gwembe South Builders Cooperative also evolved from GSDP activities. After renovation of the GSDP Nkandabwe camp in the 1972/73 period, GSDP decided to retain the building team. For flexibility, and to build up the expertise in the building trade, the

men, and only one heads a home, as a divorcee. None of the members is an 'ordinary village woman'.

Does this programme really serve the interests of the village woman, at whom it is supposed to be directed? Why is it that village women are not involved? It may be that village women are too occupied with other more important activities. As we have already seen (p.18), plots at Buleya Malima Scheme are given to households, rather than to individuals. Are efforts in designing special women's club activities worthwhile? The Buleya Malima experience suggests that some of the special women's programme activities serve the interests of a rural 'elite'. Drawing on the Sistwinda experience, where some women have acquired their own plots as individual farmers and not as a group, it could be suggested that efforts to promote women's involvement in GSDFP should be directed towards those activities which are of major importance in the improvement of the livelihood of village households.

5.2 Nutrition and Preventive Medicine

As early as 1973, the GSDFP has been involved in nutrition and public health programmes. In nutrition, the project started with the Breaktime Food Programme in primary schools. A survey was conducted to find out the proportion of pupils who had breakfast each morning before going to school. It was found that only 35% of the pupils had breakfast. With this information the GSDFP started selling milk, biscuits and groundnuts in schools. But this programme could not be maintained, as the prices of these commodities kept on rising; and it was mostly pupils from the relatively well-to-do families who were buying these provisions any way.

The collapse of this breakfast food programme is no surprise. Instead of tackling the root cause of the problem the programme addressed itself to the effects. After finding that 65% of the pupils had no breakfast, the survey could have been extended to try to find out about the food provisions in the pupils' families. The problem may be not so much the supply of food to family members, but rather the conditions for its production. This could explain the nutrition value of the families' food provisions and its distributions.

cont./ 6.

6. Village Water Supply

During the resettlement period (the late 50's and early 60's), a water well digging programme was conducted. In Gwembe South alone, more than 250 water wells were dug, but at the moment less than 50 of them are still in use.

There are some sociological and technological problems associated with the village water supply programme in Gwembe South. It has to be noted that the Gwembe community (mostly women), prefer using and drawing water from the rivers, and not from wells. They consider it better to use running water for washing household goods and for bathing than to use stagnant water, (just as some people prefer a shower to a bath). For home use (drinking and cooking), people argue that river water has a pleasant smell. The implication of this for the water well programme is that, if there is a longer period with reliable rainfall which can keep rivers flowing throughout the year, then people will just abandon and neglect the upkeep of the wells. It is only in times of drought that people will go back to using wells. This brings us to the technological question.

Of course, it is obvious that the relocatees were not consulted when wells were being dug during the resettlement period. We also know that the maintenance of communal facilities, like water wells, poses many problems. Can we, then, expect village communities to maintain a communal well which is not in use for long periods at a time (more than four rainy seasons, for instance)? The GSDFP experiences can assist us in answering this question.

Right from the start, GSDFP has engaged in the village water supply programme in both sociological and technological dimensions. An education component, under the Female Extension Officer, is being conducted, teaching people the importance of having a clean water supply. The Sinazese Nutrition Group has been successful in this exercise. Though the digging of wells is being seen as a man's domain, the group members (all are women) know all the different steps of digging wells: how to organise the construction on a self-help basis, and how to approach the District Council for assistance. They usually organise discussions with course participants at the Malima Farmers Training Centre, in under five clinics, in Rural Health Centres, and in villages. The care that the village communities are putting into the maintenance of the wells that are now being dug, can partly be attributed to this group's efforts.

GSDFP reports do not specify the number of wells that it has assisted in digging over the years that it has been involved in this programme. It has often assisted where a self-help spirit has been shown in the digging of the pit. GSDFP assists in casing the well. Where problems have been encountered, the project has drawn on the assistance of the District Council (which is, in any case, the institution set up to provide this type of service). The District Council has thus provided assistance to the GSDFP to complete its planned projects - instead of the latter supporting the former. As I have suggested in considering other project components, GSDFP assistance should be directed to the relevant existing institution: in this case, to the water supply section of the Council.

unit to the project components. Its main activities are camp maintenance irrigation schemes equipment repair and maintenance, and the training of its employees. Occasionally, it has also been involved in the design and introduction of easy, small, 'appropriate' technologies.

In all these activities, the workshop has done a commendable job, considering that the mechanical Service Branch (which is supposed to carry out government mechanical works) is not effective. But it is my view that the workshop could have done more effective work if it had an extension and training wing.

Though the workshop has been involved in training craftsmen, these have only been its own employees. The workshop has not gone out to train farmers in the repair and maintenance of their equipment. Whenever there is an engine problem at the schemes, the farmers rely on the workshop. It would be preferable for the workshops to include their courses in the Dryland Farming Programme.

Over the years, GSDP has been involved in the introduction and trial of various types of intermediate technologies. These have ranged from simple irrigation pumps, biogas plant, turbine-powered maize mills, and projects in the training programme. But since most of these projects were not designed as long-term GSDP components, and they depended on the personal initiative of promoting officers, they were discontinued with the departure of these officers. These installations now stand as mere monuments.

We can draw some lessons from GSDP experiences. These small, simple projects which have been littered everywhere have been seen by their promoters as 'appropriate'. It has to be realised that, in making this judgement, these people have mostly looked at the machines themselves, but not at how these technologies can be fitted or adapted to the village communities. These technologies have also suffered from lack of institutional support. There does not seem to have been any coordination between the promoters of these technologies and those who supply them. It does not make much sense to introduce a hand-pump if it (and its spare parts) cannot be found in the local (or nearest) shop.

Though these technologies look simple, the costs in personnel, time, and the shattering of peoples' expectations when they are abandoned, are very considerable. Any new technology introduced should be seen in its long-term perspective.

9. CONCLUSION

The activities presented in this report are varied and numerous. This is the case with most of the IRD Programmes, especially where there is a community development programme. It is actually very difficult to draw boundaries on what a project should or should not do.

Considering the fluctuations in capital financing, and also the security situation during the period of Zimbabwean wars of liberation, GSDP has done a commendable job. Its impact on the stimulation of rural incomes for those involved has been quite significant. But it cannot be denied

that irrigation agriculture usually caters for a small segment of the rural population. The project could have widened its impact if its dryland farming programme had been much broader, and if it had included some fishing activities. These are some of the areas that are being considered under the IRDP Gwembe 1984/85 programme of work.

10. Footnotes

- (1) Central Statistical Office [1975] Census of population and housing - Gwembe District CSO, Lusaka.
- (2) Buntzel, p.30.
- (3) Buntzel, p.29.

building team was assisted in forming a cooperative society.

GSDP seconds to GSB a Building Engineer and a Works Supervisor, and it also processes occasional external aid to the society. GSB undertakes most of GSDP's construction works, as well as most government department's capital (construction) projects in the area. It has also undertaken some construction work for the Maamba Mine, and even for the Department of Agriculture in Choma.

Finance : As a society, GSB is supposed to generate its own income. Financial assessment of GSB (and even of VSP) was not possible, because auditors had just been engaged to look into their account books. But the GSB 1982 Annual Report indicates that without GSDP support, GSB could not have survived.

The issue of relevance, as far as this report is concerned, is GSB's involvement in agricultural activities. In conjunction with the GSDP's Rural Works Programme, GSB carried out the infrastructural development work at Siatwiinda, for its extension. GSB also provides agricultural loans to its members. But the actual number of loans given out varies according to the financial position of GSB, as this depends on the number and worth of contracts under GSB.

In avoiding the inappropriate supervision of construction works by agricultural officers (as discussed on the Rural Works Programme section, above, and as experienced in other IREP projects), the system of awarding building contracts to GSB looks feasible. But to avoid drawing male labour from agricultural activities, GSB should handle mostly short-term, small projects which do not require much capital investment, relying rather on human labour. The construction of small bridges, weirs, small dams, etc., are some of the possible projects.

7.3 Self-Help Savings and Credit Unions

The question of rural finance/credit is of major importance whenever new technology is introduced to promote agricultural production in the small scale farming sector. Unlike other IREP projects in other parts of the country (Luapula and Northern), where the participating farmers have been given subsidies in the form of seed and fertilizers, GSDP has opted to promote local savings and credit unions.

Since GSDP activities were initially concentrated at Siatwiinda, it was also there that the first efforts in savings and credit union promotion began. In the later part of 1977, a study group for the Siatwiinda Savings and Credit Union was formed. The union came to be registered in 1978.

Apart from promoting savings and provision of credits to its members, this union has been involved in other agro-related activities as well. It has been involved in produce marketing (see p.13), rice polishing (see p.13), and its credits are also given for fishing activities and also household (domestic) needs. Table 13 shows the development of Siatwiinda Savings and Credit Union activities in the period from 1977 to June 1983.

It is very interesting to note that (as was observed in the women's'

involvement in the irrigation scheme, p.11), the proportion of women members almost doubled in the six year period from 12.5% in 1977, to 24.77% in June 1983. This could be a result of easy access to credits, as the number of agricultural loans and the total amount given out more than doubled from 12 loans amounting to K1034 in 1978, to 31 loans amounting to K2751-80 in 1983.

When this union was formed it was specifically for members of the irrigation scheme, but later this policy was changed. The membership is now open to all people residing in and around Siatwiinda village. Government officers (teachers, extension officers) can also join, but the membership of this group of people is still very low. There were only two (2) out of a membership of 31 in 1977, and only eleven (11) out of a membership of 89 in 1978 [Hassler, 1978].

But this policy of open membership to all sectors of the rural community in the promotion of savings and credit unions has affected their establishment in other areas. At Sinazese/GSDP Nkandabwe camp a credit union study group was started, mainly through the initiative of GSDP workers and some few farmers and teachers. But efforts to persuade farmers at the nearby Nkandabwe Irrigation Scheme to join, proved futile. It is reported that farmers were "afraid that there [was too] much influence from labourers and teachers". [Hassler, E. p.6]. Thus, in spite of the remarkable development of the Siatwiinda Savings and Credit Union, it is still the only registered union in the area.

Some lessons can be drawn from these experiences. The need for a local institution to provide savings and credit facilities was much appreciated at Siatwiinda scheme, which is relatively more remote and has very few workers in the formal sector. Nkandabwe irrigation scheme, on the other hand, is near an all-weather road and has a much larger concentration of people employed in the formal sector; here the farmers have not only been reluctant to join a union dominated by government workers, but have also failed to develop much cooperative spirit among themselves. Maybe this phenomenon can be attributed to the type of technology in use at the schemes, and also to the nature of the farmers' external contacts.

At Siatwiinda the scheme relies on water pumps for its water requirements - whilst at Nkandabwe, the water is mostly distributed by gravitational force. The marketing of produce at Nkandabwe is more problematic if done collectively by farmers, than when done individually; whereas in Siatwiinda, it is much easier to sell collectively than individually. The distribution of water at Siatwiinda requires a higher spirit of cooperation among participating farmers than at Nkandabwe. These factors maybe played a major role in the appreciation of a locally based and controlled saving and credit institution. Promoters of savings and credit unions should thus be more cautious in areas where the target group does not seem to have a common purpose.

8. Workshop and Intermediate Technology

At Nkandabwe, GSDP maintains a workshop. This workshop acts as a service

Table 3. FARMER INVOLVEMENT IN S.P.I.S. : 1972-1982

SEX	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
MALE							47	46	50	39	50
FEMALE							14	14	16	27	30
TOTAL		36	36	36	44	54	61	60	66	66	80

SOURCE : These figures have been extracted from the project's (GSDP) and the scheme's (SPIS) annual and monthly reports from 1972 to 1982.

Table 4. SEX PROPORTIONAL INVOLVEMENT, 1975 to 1982

SEX	1978	1979	1980	1981	1982
MALE	77.04	76.66	75.75	59.09	62.5
FEMALE	22.95	23.33	24.24	40.90	37.5

SOURCE : These figures are deductions from Table 3. on Farmer Involvement in S.P.I.S.

Table 1. CAPITAL ALLOCATION : 1972 to 1982, showing percentage changes from year to year

YEAR	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Capital * Allocation	79,742	65,000	63,250	58,500	59,800	76,500	83,000	103,889	125,400		
% △		-18.48	-2.69	-7.5	+2.22	+27.92	+8.49	+25.16	+20.7		

* SOURCE : Buntzel Report p.30

Table 2. S.P.I.S : FINANCIAL FLOW, 1972 to 1980 (in Kwacha)

SOURCE	1972	1973	1974	1975	1976	1977	1978	1979	1980
GRZ *	10,128	4,944	6,550	4,918	3,850	4,500	8,000	16,875	9,200
GM**									13,125
TOTAL									22,325

SOURCE : The Buntzel Report p.30

* Government of the Republic of Zambia

** The Gossiner Mission

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E. BUDGET

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Table 11. HECTARAGE, YIELD and No. of FARMERS ON COTTON

	1976/77	1977/78	1978/79	1979/80	1980/81
HECTARES	14.40	18.40	25.00	40.00	15.5
YIELD (marketed kg)	18,775	12,416	43,876	65,985	19,224
ENLISTED FARMERS (No.)	29	46	52	34	18

SOURCE : From the scheme's and LINTCO depot reports

Table 12. SUNFLOWER PRODUCTION - 1978/79 to 1980/81

SEASON	1978/79	1979/80	1980/81
HECTARES	11	5.5	3.3
YIELD (marketed kg)	7,268	3,509	1,950
No. of FARMERS	28	13	7
AVERAGE YIELD/Ha.	660.72	638	590.9

SOURCE : Data extracted from scheme reports

Table 9. QUANTITY (kg) and REVENUE (Kwacha) from VEGETABLE SALES - 1976 to 1982

YEAR	1977	1978	1979	1980	1981	1982
QUANTITY	14,166	27,981	28,471	35,973	58,280	26,369
REVENUE	5,254.10	19,201.04	10,372.40	12,273.00		

SOURCE : For years 1977 to 1980, from Krisifoe, I.J. [1981] 'GSDP : Extension of the Siatwiinda Irrigation Scheme', Nkandabwe Camp, April. For years 1981 to 1982, GSDP Annual Reports.

Table 10. ESTIMATED AND ACTUAL CAPITAL INVESTMENTS AT BULEYA MALIMA - 1970 to 1979 (in kwacha)

YEAR	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
ESTIMATE*	89,560	33,950	29,600	28,500	25,000					
ACTUAL**	50,000	70,000	63,000	60,000	65,000	38,000	35,000	70,000		

SOURCES : * Ministry of Rural Development [1969] Buleya Malima Pilot Irrigation Project : Southern Province, Gwembe Valley Land Use Services, Lusaka p.18

** Extracted from the Government of Zambia's Estimate of Revenue and Expenditure Annual Reports during the period under review (1970-77). Printed by the Government Printer, Lusaka.

SOURCE : Department of Agriculture : Annual Reports from 1975 to 1980, Sinazongwe sub-district

SEASON	1975/76	1976/77	1977/78	1978/79	1979/80	BAGS (x 80kg)	115	80	88	254	175
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Table 6. NAMBOARD RICE PURCHASES IN GEMBEE VALLEY : 1975/76 to 1979/80 Marketing Seasons

SOURCE : These figures have been extracted from S.P.I.S. Annual and Monthly reports from 1976 to 1983

Marketed (x80kg bag)	48	150	254	177	156	none	none
YIELDS (x80kg bag)	120	200	320	190	175	40	25
Hectares	2.5	5.0	5.6	4.0	2.0	2.3	
	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83

Table 5. HECTARES, YIELDS AND MARKETED RICE. FIGURES FOR 1976/77 to 1982/83

SOURCE : Kritisfoe, I. [1981] 'Extension of Statwimba Irrigation Scheme', CSIRO Internal Memo, April

SEASON	QUANTITY SOLD (Kilograms)	PRICE/kg (in Kwacha)	REVENUE (in Kwacha)	1979/80	14,133	.201	2,850.59
1978/79	21,674	.203	4,416.20				
1977/78	11,856	.20	2,371.20				
1976/77	4,931	.18	887.58				

Table 8. QUANTITY AND REVENUE FROM RICE SALES - 1976/77 to 1979/80 marketing seasons

SOURCE : These figures are deduced from Table 5.

SEASON	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	YIELD per ha. (80 x kg bag)	48	40	59.14	47.5	41.66	20	10.86
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Table 7. RICE OUTPUT PER HECTARE AT S.P.I.S. FROM 1976/77 TO 1982/83

Table 13. SIATWIINDA SELF-HELP SAVINGS AND CREDIT UNION

SIATWIINDA SELF-HELP SAVINGS & CREDIT UNION	1977	1978	1979	1980	1981	1982	(June) 1983
1. No. of members	32	88	104	151	190	207	218
2. No. of female members	4	9	17	36	43	48	54
3. Share capital	635.33	3141.66	5159.02	9042.04	10462.33	10029.78	9927.73
4. No. of loans (amount)	—	12(1034.00)	11(1297.80)	20(2216.00)	32(3015.60)	41(6251.80)	(6017.10)
5. No. of agr. loans (amount)	—	12(1034.00)	11(1298.80)	17(1966.00)	28(2759.60)	31(2751.80)	
6. No. of fishing loans (amount)	—	—	—	2 (150.00)	3 (156.00)	5 (930.00)	
7. No. of domestic loans (amount)	—	—	—	1 (100.00)	1 (100.00)	3 (245.00)	

SOURCE : Data provided by the GSDP Cooperative Officer

An das
Kuratorium der
Gossner Mission
 Handjerystraße 19/20
 1000 Berlin 41

31.12.83

Betreff: Jahresbericht 1983

Ich bin mit meiner Frau Maria am 31.1.83 nach Zambia ausgereist, um meinen Dienst als Coordinator für das neu eingerichtete Integrated Rural Development Programm Gwembe Valley anzutreten.

Gleich nach der Ankunft in Zambia wurde ich im Ministerium in Lusaka in meine dienstlichen Pflichten eingeführt. Zusammen mit meinem Arbeitsvertrag hatte ich zuvor schon in Deutschland meine von der Regierung ausgearbeitete Jobdescription von der Missionsleitung zugesandt bekommen, zusammen mit dem neuen Agreement zwischen der Gossner Mission und der Regierung von Zambia.

Aufbauend auf dieser Jobdescription und dem Agreement wurde mir die Funktion der Integrated Development Programme wie folgt dargestellt:

Die IRDPs sind im Zusammenhang mit der Dezentralisierung und der Neuordnung der Staatsfinanzen zu sehen, um besonders strukturschwachen Gebieten unter die Arme zu greifen.

Es gibt in Zambia 56 Distrikte, von denen sich einige (Copperbelt, Lusaka, Kafue) durch ihre hohe Wirtschaftskraft sehr gut stellen. In den strukturschwachen Distrikten, wie etwa im Gwembe Distrikt, soll durch gezielte Agrar- und Gewerbeförderung das Steueraufkommen so gesteigert werden, daß sie normalerweise keine Zuschüsse mehr von der Zentralregierung benötigen.

Der IRDP-Status, an einen Distrikt verliehen, gibt diesem Distrikt die Möglichkeit an internationale Finanzquellen heranzukommen (Weltbank, US-AID, FAO, KfW usw.) was bislang nur der Zentralregierung möglich war.

Es wurde mir deutlich gemacht, daß im Gegensatz zu früher, keinerlei Finanzmittel mehr für Projekte von Seiten der Regierung zur Verfügung stehen. Projektmittel müssen im Rahmen eines 3-5 jährigen Raumplanes beantragt werden, und zwar für jedes Projekt einzeln. Diese Einzelkomponenten bedürfen der Zustimmung des IRDP Steering Committees und des District Councils. Sie werden dann in den jeweiligen Jahresbudgets zusammengefaßt. Nach technischer Prüfung durch das Ministerium (Planning Division) und die National Commission for Development Planning kann die Fund Raising Prozedur eingeleitet werden.

Als Richtlinie dafür, welche Projekte in Zukunft von den beiden vorgenannten Dienststellen als förderungswürdig genehmigt werden, wurde klar gestellt, daß künftig nur noch Projekte in Frage kommen, die die Wirtschaftssituation verbessern und keine Folgekosten verursachen. Es wurde - auch in späteren Besprechungen - immer wieder betont, daß die schlechte Wirtschaftslage Zambias zum Teil von Entwicklungsprojekten der 60/70er Jahre mit ihren ständigen hohen Folgekosten herrühre.

An Hand meiner Arbeitsplatzbeschreibung wurde mir meine Rolle als Planer und Coordinator verdeutlicht, als Mittler zwischen den Selbsthilfeaktivitäten der Bevölkerung, dem Steering Committee und dem Distrikt und von da wiederum zu den respektiven Ämtern der Provinz und in Lusaka. Die disziplinarische Unterstellung ist unter dem Distrikt.

Da keine Projektmittel mehr von der Regierung zu erwarten seien, so wurde mir verdeutlicht, müßten die entsprechenden Budgets und Anträge bis im Juli 83 vom Distrikt genehmigt vorliegen, damit mit potentiellen Geldgebern Verhandlungen aufgenommen werden können.

Die im Gwembe Valley vorgefundene Situation läßt sich am klarsten an Hand von vier Problemenkreisen darstellen:

- 1) Die anhaltende Dürre
- 2) Die Finanzlage
- 3) Die technische Ausstattung
- 4) Die Personalsituation

1) Die anhaltende Dürre

Es war gegen Ende der Regenzeit, als wir im Februar ins Valley kamen. Der Mais - es war zum Teil der 3. Aussaatversuch - stand kaum kniehoch. Es war abzusehen, daß keine Ernte zu erwarten war. Sorghum und Hirse, 1971 zwischen Sinazeze und Siatwinda/^{noch} Wichtigste Feldfrucht, wurde überhaupt nicht mehr angebaut. Beide durreresistenten Feldfrüchte waren von der Baumwolle verdrängt. Aber auch die brachte - obwohl ebenfalls durreresistent kaum 10 % des Normalertrages. Es war offenkundig, daß die gesamte Bevölkerung bis mindestens April 84 auf Nahrungshilfe angewiesen sein würde. Da keine Körnerfrüchte zu erwarten war, war es sicher, daß es auch keine Saatgut geben würde (normalerweise halten die Bauern einen Teil der Körnerernte als Saatgut für die nächste Saison zurück). Es war offenkundig, daß für diese durch die Dürre ausgefallene Selbstversorgung mit Saatgut ein Ersatz geschaffen werden mußte.

2) Die Finanzlage

ab 1975

Von 1971 bis 1979 hat die Regierung ohne weiteres einen/von Jahr zu Jahr steigenden Finanzbeitrag für die Arbeit des Gossner Service Teams beigesteuert: 1971 = 79.746 Kwacha
 1972 = 65.000 Kwacha
 1973 = 65.000 Kwacha
 1974 = 58.500 Kwacha
 1975 = 59.800 Kwacha
 1976 = 70.000 Kwacha
 1977 = 82.950 Kwacha

Im Jahr 1978 wurde erstmals die 100.000 Kwacha-Grenze überschritten.

Als im Jahr 1979 das Budget des Gossner Service Teams erstmals auf 119.400 Kwacha anstieg wurde es prompt um 40.000 Kwacha gekürzt. Diese Kürzungen wurden fortgesetzt:

1980 - beantragt 159.320 Kwacha - gekürzt = 59.000 Kwacha
 1981 - beantragt 159.860 Kwacha - gekürzt = 40.000 Kwacha
 1982 - beantragt 104.900 Kwacha - gekürzt = 93.000 Kwacha
 1983 - beantragt 191.025 Kwacha - gekürzt = 145.000 Kwacha

Das heißt in den Jahren 1980/81 betrugten die Kürzungen etwa ein Drittel. Im Jahr 1982 beliefen sich die Kürzungen auf 90% im Jahr 1983 auf 75%. Beginnend von 1979 blutete die Arbeit des Gwembe South Development Projektes finanziell aus. Die Übernahme des km-Geldes durch die Gossner Mission vermochte dem nicht entgegenzuwirken, soweit wie die Finanzhilfe der EG. Sie entlastete zum Teil den Haushalt der Gossner Mission. Zum anderen Teil waren diese Mittel zweckgebunden. Sie füllten aber nicht die von der zambischen Regierung verursachte Finanzlücke.

3) Die technische Ausstattung

Die finanzielle Ausblutung des Gwembe South Development Projektes führt zu einer technischen Marodisierung. Diese wurde in den beiden Bewässerungsprojekten Siatwinda und Buleya Malima durch die Dürre kaschiert. Der Maschinen- und Fahrzeugbestand des Gwembe South Development Projektes - schon 1979 überaltert, wurde von Jahr zu Jahr störanfälliger. Der Landrover von GSDP liegt still. Auf kurze Strecken kann zur Zeit der 13 Jahre alte Mercedes Lastwagen verwendet werden.

4) Die Personalsituation 3

Die angetroffenen 7 Gossner Mitarbeiter, 6 volle Verträge und ein halber, waren sämtlich im letzten Vertragsjahr. Von Regierungsseite waren daß 6 zum Projekt delegierte Mitarbeiter als Civil Servants (Beamte), sowie aus Regierungsmitteln bezahlt, aber nicht fest angestellt 2 Senior Staff und eine Sekretärin.

Diskussion der vorgefundenen Situation:

Die Gossner Mitarbeiter hatten allesamt ihren Dienst um das Jahr 1980 herum angetreten - just als die Kürzungen der Projektmittel einsetzten. Als Ausweg aus der immer drückender werdenden Finanzmisere der Gossner Arbeit im Gwembe Valley bot sich die Umwandlung in ein Integrated Rural Development Programme an.

Aus den vorhandenen Unterlagen ist nicht eindeutig ersichtlich, wie es zur Zustimmung kam, die Arbeit der Gossner Mission in einem IRDP Gwembe Valley zu verankern. Sicher hatten einige Teammitglieder große Erwartungen im Hinblick auf eine Verbesserung der Finanzlage, andere waren weniger überzeugt.

Auf jeden Fall wurde die Unterzeichnung des IRDP Agreements letztendlich vorangetrieben - gerade als die Regierung von Zambia daranging mit der Bundesregierung ein Abkommen vorzubereiten, das ein Engagement der Kreditanstalt für Wiederaufbau im Gwembe Valley einschloß.

Da nun in allen anderen IRDPs in Zambia der Hauptgeldgeber auch den Coordinator stellt, läßt sich nicht ausschließen, daß bei den zambischen Regierungsstellen der Eindruck entstand, die Gossner Mission habe nun in der Kreditanstalt einen Geldgeber gefunden und stellt folgerichtig den Coordinator.

Die Entwicklung im Verlauf des Jahres 1983

Bestimmend für meine Tätigkeit während des ganzen Jahres 1983 war das Faktum, daß einer oder mehrere Geldgeber gefunden werden mußten, um die Finanzlücke zu schließen, die seit 1979 von Jahr zu Jahr größer geworden war.

Bestimmend war, daß von Seiten der Regierung keinerlei Direktzuweisungen mehr in Aussicht gestellt wurden, einschließlich der km-Gelder. (Die zambische Interpretation des entsprechenden Passus im Agreement ist ein wenig anders als die Interpretation der Gossner Mission).

Bestimmend war auch, daß potentielle Geldgeber unter gar keinen Umständen bereit sind, Folgekosten von alten Projekten zu übernehmen, etwa Siatwin und Buleya Malima. Das heißt, daß alte Projekte zumindest in neuer Verpackung den Geldgebern angeboten werden müssen.

Bestimmend war weiter, daß alle Finanzierungsvorschläge, die dann frühestens ab 1985 realisiert werden, vor dem Juli 83 durch die Genehmigungsgremien des IRDP Gwembe Valley gelaufen sein mußten, um danach zur technischen Prüfung bei der Planning Division im Ministerium und bei der National Commission for Development Planning vorgelegt werden zu können.

Bestimmend war schließlich ich, daß die potentiellen Geldgeber (Sida, Cida, Cuso, US-Aid, World Bank, Norad, Dan Aid, Durch Aid usw.) in der Regel unterschiedliche Vergabерichtlinien haben und häufig nur bestimmte Komponenten aus dem Gesamtbudget finanzieren können.

Es ist offensichtlich sehr schwer, für jemand der noch nicht mit unterschiedlichen Geldgebern zu tun hatte, das zu akzeptieren - auf jeden Fall aber ist es eine Heidenarbeit das vorhandene Budget immer wieder umzugruppieren.

Es kam erschwerend zu diesen bestimmenden Faktoren hinzu, daß das Steering Committee schon einmal - im Mai 1982 - zusammengetreten war, aber seither nicht mehr. Es war also auch von dieser Seite her ein Neuanfang. Ohne die außerordentliche Bereitschaft zur Zusammenarbeit von Seiten der involvierten Zambianer, wäre ich wohl kaum in der Lage gewesen, meinen Dienstauftrag zu erfüllen, wie er in der mir von der Gossner Mission seinerzeit übermittelten Jobdescription verankert ist.

Während in dem ersten Steering Committee Meeting am 23.5.83 zunächst einmal Faden geschlagen wurde, welche Projekte und Programme in den nächsten 5 Jahren verfolgt werden sollen, ging es beim zweiten Meeting am 12.8.83 um Detailfragen und beim dritten Meeting am 11.11. ebenfalls.

Kurze Zeit darauf wurden dann die Beschlüsse und Empfehlungen der jeweiligen Steering Committee Meetings vom District Executive Secretary, dem zweithöchsten Beamten des Districts, dem District Council (Parlament) vorgetragen. Im allgemeinen wurden die Beschlüsse des Steering Committees gutgeheißen. Bei der Sitzung am 1.12.83 wurde allerdings die Empfehlung des Steering Committees, daß der District Buleya Malima übernehmen soll, abgewiesen.

Erst wenn klare Pläne für eine Konsolidierung vorliegen und wenn ersichtlich ist, welche finanziellen Konsequenzen die Übernahme von Buleya Malima für den District hat, ist der District Council bereit, den Fall weiter zu diskutieren.

Nachdem die im Juli 83 von den Mitgliedern des GSDP erarbeiteten Budgets für 1984 vom District genehmigt waren und die technische Prüfung der Planning Division und der National Commission für Development Planning passiert hatten, wurden Sietske Krisifoe und ich am 19.9.83 beauftragt - bei unserem Routinebesuch im Ministerium - mit dem Fundraising für unsere Projekte zu beginnen.

Zunächst einmal waren wir beide schockiert, denn das war bisher unser Verständnis der IRDP-Vereinbarung gewesen, daß die nötigen Mittel für die traditionellen GSDP-Projekte und für das völlig neue Fischerei-Pilotprojekt von der IRDP-Zentrale beschafft werden. Aber verglichen mit den anderen IRDPs ist der Direktkontakt zwischen dem lokalen IRDP und dem Geldgeber der Normalfall. Nur daß man es eben in "unserem Falle" versäumt hatte, diesen Direktkontakt vor der Unterzeichnung des IRDP-Vertrages herzustellen.

In den nächsten Wochen war ich relativ viel in Lusaka. Sietske Krisifoe bereitete die Termine mit den potentiellen Geldgebern vor, ich hatte meine Schreibmaschine dabei und arbeitete zwischen den Besprechungen mit den verschiedenen Donors die jeweiligen Budgets entsprechend ihren besonderen Wünschen um. Unsere ersten Besuche machten wir dann immer gemeinsam. Manchmal waren wir ganz niedergeschlagen, wenn wir aus dem Büro eines Geldgebers herauskamen. Ich habe manchmal gedacht, wenn wir zwei nicht so gut aufeinander eingespielt wären, hätten wir wohl die Flinte ins Korn geworfen.

Doch neben so manchen geradzu demütigenden Erfahrungen haben wir bei unserer Fundraisingtour doch auch viel Positives und Ermutigendes erlebt. Ich will nun nicht alle im Einzelnen aufzählen, die wir besucht haben: aber Ermunterung und Ermutigung haben wir vor allem bei Dutch Aid, Norad und Canadian Cida/Cuso erfahren.

Sietske Krisifoe hat dann, als ich wieder ins Valley zurückgekehrt war, die follow-up Besuche gemacht. Sie hat zäh und verbissen versucht US-Aid wegen Siatwinda zu involvieren. Das entscheidende Meeting steht allerdings noch aus. Und für Norad müssen wir nun - nach einem des project advisers, Mrs. Sauvik - bis Februar 83 einen Fünfjahresplan für VSP erstellen. Überhaupt scheint es, daß außer US-Aid und World Bank alle

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anderen Geldgeber an IRDP nicht interessiert sind.

Ich möchte nun nicht sagen - das IRDP für uns in jedem Fall negativ ist. Heute sagen ja alle: "ich war von Anfang an dagegen." Aber wir sollten die Augen nicht verschließen, vor den Gefahren, die der IRDP Status für den Vertragspartner mit sich bringt.

Und ich bin überzeugt, daß die Geldgeber, die heute so einen großen Boden um IRDPs machen, dies nicht aus ideologischen Gründen tun, sondern weil sie ihre Erfahrungen gemacht haben. Wir haben hier bei uns schon einen Vorgeschmack davon bekommen, daß wir Güter (Autos usw.) grundsätzlich auf den Namen der Gossner Mission zu lassen müssen; denn über den IRDP Status ist das GST Regierung. Das ist in den anderen IRDPs genauso. In Chipata haben sie die größten Schwierigkeiten, weil sie kein Fuhrwerk mehr haben. Das ist alles Regierung geworden - und kaputt.

Die anderen IRDPs allerdings haben etwas nicht, das wir haben - nämlich VSP. Und das finden die Geldgeber ganz offensichtlich sehr sympathisch. Denn damit können die Dinge, die sie uns finanzieren, nicht still-schweigend enteignet werden.

Um aber ganz sicher zu gehen, sollten wir die Gossner Mission in Zambia registrieren ~~zu~~ lassen. Randy Benoit vom Ministerium hat uns das dringend empfohlen: you must become a legal entity.

Andernfalls sind wir Spiel ball der jeweiligen politischen und ideologischen Strömungen in Zambia. Benoit meinte alle anderen - Heilsarmee, Quäker, Katholiken, Church of Christ usw. haben sich unter dem "Society Act" registrieren lassen. Das sei ganz einfach.

Und ich möchte doch das Kuratorium dringend bitten, Sietske Krisifoe das "Grüne Licht" für diese Registrierung zu geben.

Abschließende Bemerkungen

Wenn ich anfangs bei meinem Dienstantritt noch durchaus geglaubt habe, der IRDP-Status sei ein Gewinn für die Arbeit der Gossner Mission in Zambia, dann muß ich diese Meinung insoweit revidieren, daß der IRDP Status mit Sicherheit ein Gewinn für den betroffenen District ist.

Für uns als Mission jedoch ist die Einbindung in die Districtsverwaltung ein Hindernis. Es ist fraglich, ob das Privileg zollfrei Autos importieren zu können so viel wert ist. Und wie schnell ein solches Privileg Makulatur wird, sehen wir an unserem Externalaccount. Es steht im Agreement und darf dennoch nicht mehr genutzt werden.

Wenn das Kuratorium daher beschließt, daß die Arbeit in Zambia über die Zeit des laufenden Agreements hinaus fortgesetzt werden soll, was ich persönlich auch im Hinblick auf das eventuelle Engagement von GM-Ost positiv finden würde, dann aber würde ich doch ein Arbeiten im freien kirchlichen Raum effektiver finden.

Eine Gossner Mission Zambia, mit zwei bis vier langdienenden Missionarier könnte Mitglied im Nationalen Christenrat sein und mit dem vorhandenen Instrument VSP Dingetun, die die Regierung nicht tun kann, ansonsten aber intensiver im evangelistischen Bereich tätig sein.

Eine - wie auch immer geartete - Entscheidung sollte aber möglichst bald getroffen werden; denn die Pläne, die für die Geldgeber erarbeitet werden müssen, reichen in der Zeitspanne schon über das Agreement hinaus.

Klaus Schäfer

Klaus Schäfer

Ende März 1984

Jahresbericht von Waltraut Stroh-van Vliet
und Jan van Vliet

Liebe Freunde vom Sambiaausschuß!

Wir sind jetzt genau ein Jahr in Sambia und möchten im Anschluß an unseren Halbjahresbericht (24.8.1983) über die zweite Hälfte unseres ersten Jahres hier berichten.

Zunächst einiges mehr Persönliches:

Vieles am Leben und Arbeiten hier ist uns inzwischen vertraut und selbstverständlich geworden, manches vielleicht zu selbstverständlich, um als Beispiel nur unseren reichen Lebensstil zu nennen inmitten einer armen Bevölkerung oder der Besitz eines Autos, dessen Anschaffung uns einige Überwindung kostete. Auch mit dem Wohnen im Camp haben wir uns abgefunden. Allerdings ist es manchmal belastend, keinerlei räumliche Distanz zum Arbeitsbereich zu haben. Nur gelegentlich gelingt es uns, für ein paar Tage in die Dörfer zu ziehen, wie z.B. eine 3-tägige Fahrt nach Kafwambila oder ein 2-tägiger Aufenthalt in Kanchindu. Die Situation im Camp hat sich inzwischen sehr verändert. Als wir ankamen, wohnten hier 5 deutsche Familien/Paare und eine Familie in Kanchindu. Jetzt sind es noch 2 deutsche Familien (bzw. halb holländisch). Waren hier anfänglich 3 sambianische Beamten, so sind es jetzt 5. Durch die Abreise der "alten" Teammitglieder ist die Wohn- und Arbeitsatmosphäre sehr entkrampt. Die andauernden Spannungen hatten uns viel Kraft gekostet.

Die Hitze im "hiesigen" Sommer hat uns zu schaffen gemacht. Esther bekam davon mehrmals Hautausschläge. Im Januar machten wir nochmals einen Anlauf zu regelmäßigen Tongaunterricht, der aber schnell wieder versandete, da jeder zu sehr in seiner Arbeit steckt. So bleibt es bei unseren mangelnden Sprachkenntnissen. Viel Zeit vergeht täglich mit unzähligen Kleinigkeiten (Geld wechseln, Wunden verbinden, Tonga Crafts verkaufen, jemandem mit Diesel aushelfen, Besuch jeglicher Art). Es ist fast unmöglich, in Ruhe an einer Sache zu bleiben, wie z.B. eine Predigt vorzubereiten.

zum Team:

Wie schon gesagt, hat sich die Situation im Team durch die Schrumpfung auf 4 Mitglieder sehr verbessert. Fragen und Meinungsverschiedenheiten könne n in offener Atmosphäre besprochen werden. Dies soll allerdings nicht heißen, daß wir nur zu viert bleiben wollen. Wir freuen uns vielmehr auf neue Teammitglieder und hoffen, mit ihnen eine gemeinsame Basis zu finden. Die Aufgaben im Team haben wir für dieses Jahr folgendermaßen verteilt: Jan ist chairman, Waltraut ist secretary, Klaus und Maria sind treasurer bzw. vice treasurer. Jan vertritt die Gossner Mission und das Team gegenüber den Kirchen und dem Projekt, Klaus auf Distriktebene und Sietske in Lusaka. Mit Sietske haben wir regelmäßigen und guten Kontakt.

Nun zu unserer eigentlichen Arbeit, Mitarbeit in UCZ:

Wir sind inzwischen von der UCZ als assoziierte Pfarrer anerkannt. In Maamba hat sich wieder ein Pfarrerwechsel vollzogen. Pfr. Siatwinda wurde zum Moderator in Choma gewählt. (sicher ein großer Gewinn für das Southern Presbytery), und in Maamba ist Pfr. Mubiana, ein junger Theologe vom College, aufgezogen. Auch zu ihm haben wir guten Kontakt.

Wir predigen an 3 Sonntagen im Monat, regelmäßig in Nkandabwe und Sinazongwe und daneben reihum in verschiedenen Gemeinden. Auf diese Weise lernen wir immer wieder neue Gemeinden mit ihren Fragen und Problemen kennen. Manche Gemeinden sind ganz auf sich selbst ange-

wiesen und haben seit Monaten oder Jahren keinen Pfarrer mehr gesehen. Es ist für den Pfarrer aus Maamba auch nicht einfach, ohne Auto in die abgelegenen Dörfer zu kommen. Bei solchen Besuchen hören wir manche Beschwerden, Fragen und Bitten (Geld für einen Kirchbau, Gesangbücher und Bibeln, Kleider für ein blindes Gemeindeglied, Probleme mit anderen Denominationen). Im letzten halben Jahr besuchten wir mehrmals die Gemeinde in Chiyabi, 40 km von hier entfernt, aber nur auf einer sehr schlechten Straße erreichbar. In Chiyabi wohnen viele Bembafischer, die von Haus aus zur UCZ gehören, aber auch einige Tongas haben sich der Gemeinde angeschlossen. Die junge Gemeinde hat in Eigenleistung 2 hübsche Kirchen gebaut. Allerdings gibt es auch viele interne Probleme, und brauchen sie vor allem Rat in Fragen der Gemeindeleitung. Wenn möglich nehmen wir andere Gemeindeglieder oder den Pfarrer aus Maamba zu solchen Besuchen mit.

Ein Höhepunkt im kirchlichen Leben waren die Weihnachtsgottesdienste in Nkandabwe. Sie wurden als Fest der ganzen Gemeinde gefeiert mit viel Singen, Tanzen und mehreren ~~Lein~~ Laienspielen. Es waren auch Besucher aus anderen Gemeinden und den umliegenden Dörfern gekommen.

Die Kontakte zur katholischen Kirche verlaufen problemlos. Wir sehen öfters zwei irische Schwestern und tansanische Priester aus Maamba. Mit dem Nkandabwe-Kirchenchor besuchten wir einen Gottesdienst der katholischen Gemeinde in Sinazeze.

An manchen Orten im Tal sind die Adventisten und Neuapostolischen sehr stark, aber zu ihnen haben wir kaum Kontakt.

Von Anfang an fiel uns die große Zahl der Kinder in den Gottesdiensten auf, für die kein eigenes Angebot besteht. Wir konnten den UCZ-Jugendarbeiter für Southern Presbytery gewinnen für ein Kinderkirchhelfer Seminar. Die Resonanz in den Gemeinden war gut, und zum ersten 3-tägigen Seminar kamen 11 Teilnehmer aus 5 Gemeinden. Nach 2 Monaten hatten wir ein zweites Treffen zum Austausch von Erfahrungen und Fragen. In 4 Gemeinden gibt es jetzt einen regelmäßigen Kindergottesdienst. Die Hauptprobleme sind das Fehlen jeglicher Unterrichtsmedien und die z.T. geringe Zahl von Kindern.

Immer wieder werden wir von Trauerfamilien oder vom Kirchenchor gebeten, zu Beerdigungen zu gehen. Wir tun dies gemeinsam mit dem Chor und anderen Gemeindegliedern. Die Worte, die am Grab gesprochen, gesungen und gebetet werden, sind eine gute Möglichkeit, Zeugnis für den christlichen Glauben abzulegen.

In den letzten Wochen hatten wir auch sehr viel mit Eheproblemen zu tun (Scheidungen, Heiraten einer 2. Frau).

Unser Eindruck ist, daß die Kirche (UCZ und andere) einen schweren Stand hat im Gwembetal und anscheinend wenig attraktiv ist. Die Ordnungen der UCZ (vor allem die Forderung der Monogamie) schließen viele Tongas von der vollen Mitgliedschaft in der Kirche aus. Auch ist es deshalb sehr schwierig, Gemeindeglieder zu finden, die leitende Aufgaben übernehmen können.

zu unserer Arbeit mit TEEZ:

Nachdem wir das TEE-Programm in mehreren Gemeinden vorgestellt hatten, entschieden wir uns, zunächst mit 2 englischsprachigen Gruppen zu beginnen, zuerst in Sinazongwe und nach der Regenzeit in Chiyabi.

Im Januar begann Waltraut mit einer TEE-Gruppe, die sich jeden Samstag in Sinazongwe trifft. Die ursprünglich 15 Teilnehmer aus Nkandabwe und Sinazongwe haben sich inzwischen auf 11 reduziert. Die meisten sind von der UCZ, einer ist katholisch, einer gehört der African Methodist Episcopal Church an. Der Kurs verbindet eine Einführung in biblische Themen (Schöpfung, Sünde, Jesus Christus, Heil) mit deren Anwendung in Predigten, ist also vor allem für

Laienprediger gedacht. Die Gruppe ist sehr lebendig, liebt das Diskutieren und ist auch sehr dankbar für theologische Hilfestellung. Inzwischen sind die Teilnehmer so weit motiviert, daß sie ihre ersten Predigtversuche in Sonntagsgottesdiensten machen wollen. Die gemeinsamen Stunden sind meist sehr intensiv und viele theologischen Grundfragen kommen zur Sprache. Der Kurs dauert ein halbes Jahr und schließt mit einem Test ab.

Jan wird ab April einen zweiten TEE-Kurs in Chiyabi durchführen. Die TEE-Arbeit macht Spaß und gibt Befriedigung, da wir dabei als Theologen gefragt sind.

Wir haben Ba Mark Malyenkuku gebeten, einen TEE-Kurs in Kanchindu anzubieten, wozu er gerne bereit war. Der Kurs hat aber noch nicht begonnen.

Die Übersetzung von TEE-Kursmaterial ins Citonga macht langsame Fortschritte. Ein Teil des ersten Kurses ist auf Matrize getippt und kann vervielfältigt werden.

zu unserer Mitarbeit in VSP:

Neben den kirchlichen Aktivitäten liegt der Schwerpunkt unserer Arbeit auf der Unterstützung und Stärkung von VSP in den laufenden Aktivitäten, organisatorischen Fragen und nicht zuletzt zwischenmenschlichen Problemen.

Im November wurde ein neues Exekutivkomitee gewählt, dem 2 entsandte Vertreter der Kirchen (UCZ und katholische) angehören. Jan wurde zum Vice Secretary gewählt. Das Exekutivkomitee hat große Entscheidungsbefugnis, die Mitglieder sind aber zum großen Teil nicht in Kontakt mit der täglichen Arbeit von VSP und treffen deshalb manche Entscheidungen geleitet von ganz anderen Motiven (persönliche Machtpolitik, Gegensatz von 2 Hauptlingsgebieten). Jan hat mit dem Selbsthilfekomitee einen Antrag an eine norwegische Organisation (NORAD) ausgearbeitet zur Finanzierung der Wasserversorgung in Sikaneka. Die Antwort steht noch aus.

Unser Aufruf bei Freunden in Europa, getragene Kleider für VSP zu sammeln, zeigt die ersten Ergebnisse in Form von Kleiderpaketen, die in den letzten Wochen hier ankamen. Waltraut hält den Kontakt zu den Spendern aufrecht.

Wir helfen auch bei der Organisation vom An- und Verkauf von Tonga Crafts. 2 Käufer wurden eingestellt und 2 neue Einkaufsstellen werden demnächst eröffnet. Es ist nicht ganz einfach, neue Verkaufsstellen zu finden, aber Verhandlungen u.a. mit dem Livingstone Museum sind im Gang. Für viele Menschen hier war der Verkauf ihrer Tonga Crafts in diesem Jahr der Mißernte eine wichtige Geldeinnahmequelle.

Von der deutschen Botschaft bekam die Gossner Mission 3 kleine Motorboote geschenkt, die an VSP übergeben wurden. Eine mehrmonatige Experimenterphase ist angelaufen, in der es sich zeigen muß, ob VSP technisch und finanziell in der Lage ist, die Boote zu benutzen. Bisher wurden Nahrungsmittel zum Verkauf nach Kafwambila gebracht. Die Bevölkerung dort ist sehr dankbar, da auf dem Landweg fast keine Nahrungsmittel gebracht werden können.

Mit jeder neuen Aktivität wächst das Finanzvolumen von VSP, und es ist nicht ganz einfach, einen genauen Überblick über die Finanzen zu behalten und alle Ausgaben, Einnahmen und Buchungen zu kontrollieren. Jan versucht, dabei zu helfen.

Nachdem wir zunächst sehr froh waren über den neuen Buchhalter, sind in den letzten Wochen große Probleme aufgetreten. Der Buchhalter war auf eigene Faust 6 Wochen unterwegs, um Geld vom Verkauf von Saatgut einzutreiben. Das Saatgut war von VSP eingekauft und verteilt worden. Bei seiner Rückkehr hatte der Buchhalter aber kein Geld bei sich. Außerdem hat er das Trinken (wieder) angefangen. Für VSP ist das ein ziemlicher Schlag. Der Vorfall zeigt auch, wie

schwierig es ist, einen Tonga zu finden, dem man Geld anvertrauen kann. Deshalb bitten die Tongas auch so oft uns Europäer, Geld zu verwalten.

zur Situation im Gwembe South Development Project

Die Spannungen im Team wirkten sich auch auf die Projektarbeit, aus, vor allem die Mitarbeiterbesprechungen, negativ aus. Allerdings gibt es auch unter den Sambianern Spannungen. Auch die Unklarheiten rund um IRDP verwirrten manche Sitzungen.

Nach der Abreise von 7 Mitarbeitern werden wir verstärkt für Transport in Anspruch genommen. Wir haben auch regelmäßige Fahrten nach Choma eingerichtet. Manfred Sitte bat außerdem Jan, Gwembe South Builders wenn nötig in finanziellen und organisatorischen Fragen zur Seite zu stehen, bis sein Nachfolger kommt.

In den letzten Wochen waren alle Mitarbeiter sehr betroffen von der Nachricht, daß die Regierung in diesem Jahr kein Geld für unser Projekt zur Verfügung stellt. Für die meisten droht damit ihre Entlassung, und in den Dörfern wird schon vom Ende der "Gossinners" gesprochen. In dieser Situation waren wir sehr froh über die Ankündigung von Erhard Misches kurzfristigen Besuch.

ein paar zusammenfassende und abschließende Bemerkungen:

Die Situation war im zurückliegenden Jahr im Gwembetal geprägt von Mißernte und Hunger. Es wurden deshalb zunehmend Hilfssendungen mit Lebensmitteln in den Dörfern verteilt. Dies hat die negative Auswirkung, daß die Menschen sich weniger selbst anstrengen um zu überleben und mehr von Spenden abhängig werden. Entwicklungsprojekte werden in einer solchen Situation zunehmend schwierig.

Die Zukunft des Projektes ist im Moment recht ungewiß und die Art der Partnerschaft mit der Regierung unklar. Wir sind deshalb ganz froh, daß wir mit VSP und der UCZ zusammenarbeiten, was auf jeden Fall auch in Zukunft möglich sein wird.

Innerhalb der Kirche scheint es uns die wichtigste Aufgabe zu sein, bei der Ausbildung von Laienmitarbeitern zu helfen. TEE bietet dazu gute Möglichkeiten, aber auch die Zusammenarbeit mit spezialisierten kirchlichen Mitarbeitern wie der UCZ Jugendarbeiter.

Bei VSP kommen wir angesichts der Vielzahl der täglichen Aktivitäten und Probleme kaum zum längerfristigen Planen. Wir wünschen, daß dies in Zukunft gemeinsam mit den Sambianern verstärkt möglich ist.

Wir hoffen, daß in diesem Bericht zum Ausdruck kommt, daß wir trotz mancher Schwierigkeiten gerne hier im Gwembetal sind und unter den Tongas manche Freunde gefunden haben.

Annual Report for 1983
on educational programme by Monika Sitte

BUEDIG

The above named programme was performed since beginning of September 82 until the end of December 83 at Siatwinda irrigation scheme. Another group at Siabaswi was started earlier in 82 but slowly died in beginning of 83 when the local women's organizer left the group due to the lack of funds for her further payment.

The number of participants who enrolled themselves at the start of the programme was about 25., who were divided into two groups according to their previous knowledge. Later the attendance lessened to about 8-10 in the advanced group and to about 6 in the illiterate group.

It was the aim of the programme to promote the farmers in basic knowledge of reckoning and calculation. As mostly are marketing the cash crops at the irrigation schemes the programme turned into a women's programme although this was not the exclusive intention.

The contents of the programme was orientated towards practical needs not following any curriculum of formal school education. Thus operating a scale, calculation of crops' selling prices recognizing profit and loss in trades business, basic rules of reckoning in general, and writing and reading of figures were practised.

Assistance especially in interpreting was given by Mrs. Mary Ngandu, the community development worker for Kanchindu/Siatwinda area.

The response by the participants was very encouraging during the first halve of the year. In September there was a break of a full month due to my sick leave and after that some efforts were needed to revive the ~~the~~ programme. Therefore in October a meeting was arranged for that purpose, where the women voted for a continuation of the programme. - For my three weeks leave time in November I prepared a schedule of exercises which was then performed by Miss Mable Nyasse, a form 3 school-leaver.

The illiterate group partly lost interest; I suppose this is due to the fact that visible progress is very slow. A more intensive effort -not only once a week- would be required. But though these women requested for a literacy course.

In December the attendance was still not satisfactory which was actually due to the beginning of rains ~~in~~. Therefore a seasonal break was decided which might be extended because of the termination of my contract in January 84. The official closing and my farewell as well were celebrated on 31/12/83.

The request for a follow-up with financial assistance by the Gossner Mission was sent to Berlin. And Gossner Mission is prepared to assist an educational programme for a limited time if the programme is approved by the GSDP staff and the District Council.

About the progress made during the last year I can state that a progress can be seen with those women who had already some previous knowledge. This knowledge was refreshed by the regular practise. The women were all given one sample of the Kwacha-Ngwee-Reckoner which they were taught how to use for calculation of prices. This group is also sure in using a scale. With the illiterate women progress is much less. To fill the gap of illiteracy much more practise would be necessary.

annual report for 1883
on education of negroes in Missouri will be

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The differences between broad and British law is rather small. A more important difference is that only some areas may be members, but

in December the struggle was still in its infancy. The forces of the
Confederacy had to be organized to meet the threat of the
Confederate army to the south. The first major battle of the
war was fought in July 1861 at Bull Run, Virginia. The
Confederate army, led by General Robert E. Lee, won the
battle, but the Union army, led by General George B. McClellan,
retreated in disarray. The battle was a major setback for the
Confederacy, but it also demonstrated the strength of the
Union army. The war continued for four years, with many
more battles and skirmishes. The final battle of the war was
the Battle of Appomattox Court House, in April 1865. The
Confederate army surrendered to the Union army, ending the
Civil War.

If the programme is adopted as the GATT says it must be maintained
by the Government in accordance with the provisions of the
General Agreement on Tariffs and Trade.

Outlook for a continuation

Until now the programme was approved by the GSDP staff but not officially approved by the district authorities as it was on a level of a personal initiative by an expatriate not holding a permanent post with a work permit. For the future I can see only two possibilities for a continuation: either to retain this informal status or to create a formal status by establishing a permanent post for an extended educational/training programme which then would require a proper plan, elaboration of a curriculum, and definition of objectives, addressees etc.

INTEGRATED RURAL DEVELOPMENT PROGRAMME

GWEMBE VALLEY

Gwembe South Development Project

MINISTRY OF AGRICULTURE AND WATER DEVELOPMENT

GOVERNMENT REPUBLIC OF ZAMBIA

Budget 1984

Nkandabwe, 22nd July 1983

Meeting minutes

CONFERENCE OF THE
GWEMBE VALLEY
INTEGRATED DEVELOPMENT
COMMITTEE, 22 JULY 1983
PRESIDENT, MR. CHOMA

SUMMARY OF CAPITAL BUDGET VOLUME 1984

	Total K	GM K	IRDP K
1) Development Planning and Project Promotion	46,180.-	--	46,180.-
2) Service Unit (Admin. Workshop, Camp)	164,344.-	--	164,344.-
3) Cooperative Extension	9,000.-	3,000.-	6,000.-
4) Female Agric. Extension	19,700.-	--	19,700.-
5) Valley Selfhelp Promotion Fund	18,000.-	18,000.-	--
6) Gwembe South Builders	27,000.-	27,000.-	--
7) Small Scale Irrigation	54,200.-	--	54,200.-
8) Water Development Pr.	150,180.-	18,000.-	132,180.-
9) Syatwiinda Consolidation and Extension	393,000.-	75,000.-	318,000.-
10) Fisheries Pilot Project	120,536.-	6,000.-	114,536.-
11) Dryland Farming Programme	8,000.-	--	8,000.-
all components	1010,140.-	147,000.-	863,140.-
in addition paid by GM Technical Assistance Personnel and GM-Headquarters Overheads in 1984	--	281,000.-	--
8 vehicles provided through GM	--	144,000.-	--
Total contribution of GM	--	572,000.-	--

- I. INTRODUCTION
- II. SUMMARY OF ALL BUDGET COMPONENTS
- III. BUDGETS OF THE COMPONENTS
 - 1) Development Planning and Project Promotion
 - 2) Service Unit (Administration - Workshop - Camp maintenance)
 - 3) Cooperative Extension
 - 4) Female Agric. Extension
 - 5) Valley Selfhelp Promotion Society
 - 6) Gwembe South Builders Co-op.
 - 7) Small Scale Irrigation
 - 8) Water Development Programme
 - 9) Syatwiinda Technical Consolidation and Extension
 - 10) Fisheries Pilot Project
 - 11) Dryland Farming programme

IV. PROJECTS DESCRIPTIONS AND REPORTS

PART A: ON-GOING PROJECTS

Church related work
Service Unit
Cooperative Extension
Female Agric. Extension
Valley Self Help Promotion Society
Gwembe South Builders Co-op

PART B: NEW PROJECTS

Small Scale Irrigation
Water Development Programme
Syatwiinda Technical Consolidation and Extension
(Second Phase of the Project: preparation for handing over)
Fisheries Pilot Project
Dryland Farming Programme

V. ANNEX:

Summary of the Meeting of the Advisory Committee for the Syatwiinda Irrigation Scheme held at the National Irrigation Research Station Mazabuka on Wednesday, July 6, 1983.

INTRODUCTION

Historical background

In May 1970 the GRZ signed an Agreement of technical cooperation with the Gossner Mission, Berlin. This Agreement was renewed for a further five years period in 1976.

In the Third National Development Plan the project based on that Agreement was taken up under "Ministry of Agriculture - Land use" as follows: Gwembe South Development Project K 300.000

To provide irrigation, workshop and research requirements to the project over the plan period.

The Gossner Mission in West Germany will continue supporting the project.

Present situation

In May 1983 a new Agreement was signed between the GRZ and the Gossner Mission, Berlin - giving the cooperation between the GRZ and the Gossner Mission the status of an Integrated Rural Development Programme (IRDP)

For the next five years the Gossner Mission will continue to support the programmes of this new IRDP Gwembe Valley by -

- 1) providing Technical Assistance Personnel on request of the IRDP Steering Committee;
- 2) providing these Personnel with own vehicles;
- 3) providing on request salaries for a limited number of non-governmental local staff;
- 4) supporting activities which have grown out of the commitment of the Gossner Mission in the Gwembe Valley such as Valley Self Help Promotion Fund or Gwembe South Builders Co-op.

Serious consideration will be given to the two recent evaluations:

- 1) Dr. Rudolf Buntzel Evaluation on behalf of the Evangelical Mission Board of Germany in cooperation with GRZ, April 1980;
- 2) Colson/Scudder, Evaluation on behalf of the District Council, GRZ and the Gossner Mission, April 1982.

The new IRDP Gwembe Valley will not only care for the successful completion of the work started in 1970/71 in Gwembe South. It will ensure that the experience of that 13 years pilot phase is made available to Gwembe Central and Gwembe North as well, in accordance with the resolution of the Gwembe District Council passed on June 1, 1983.

Succ. 1. Notice, that means first of all the technical con-

solidation and extension of the Syatwiinda Irrigation Pilot Scheme, which was started in 1970/71 to find out 1) what can be grown successfully under irrigation and 2) how the local people respond to a sophisticated, modern irrigation system. Both questions are answered positiv through the experience of the past 12 years. But a final investment is needed to replace the meanwhile overaged pilot equipment an' to bring the project up to an economic size in order to hand it over to the farmers.

One more irrigation scheme - Nkandabwe - is practically allready handed over to the farmers. The other one - Buleya Malima - which the Gossner Mission is supporting since 1980, is still under Provincial responsibility and not included in this budget.

The Gossner Mission engages in development work in India, in Nepal and in Zambia as part of its christian witness. In our understanding development includes all aspects of individual and communal life such as social, economic and spiritual. Therefore the Gossner Mission cooperates not only with the government officials and the traditional leaders, but also with the local churches. One member of the Gossner Service Team has always been a reverend. His task is to concentrate on the spiritual and cultural aspect of development. He functions as a catalyst to the local churches and ist involved in the work of the Valley Self Help Promotion Fund.

In order to fullfill the commitments resulting from the agreements with the GRZ the Gossner Mission has starting from 1970 up to 1983 put up more than K 4.000.000 on salaries for Technical Assistance Personnel, for vehicles, goods and funds needed.

The next 5 years

The new IRDP Gwembe Valley as a cooperation between the GRZ and the Gossner Mission will for the next 5 years be engaged in irrigation programmes (including the technical consolidation of the existing projects);
in water development (dams, wells, borholes);
in infrastructurell development (roads, Lake Transport);
in small scale industries (school-leaver-programme, Rural Workshops, mills, small scale mining);
in marketing and cooperative work and
in fisheries programmes, according to the priority list of the plan as approved by the IRDP Steering Committee and the District Council.

Development Planning and Project Promotion

A) Description

The Pilot phase of the Gossner Service Team/Gwembe South Development Project was prolonged because of the struggle to free Zimbabwe.

Since the majority of the Gossner Service Team Members choose to remain at their post even through that difficult 5 years, we have the advantage that a 13-year experience is now available in the field of irrigation (large and small scale), improved dryland farming, female extension, cooperative extension, various selfhelp activities among and with the Valley Tonga and small scale industries.

Now the time has come, to make this experience available to the other two subdistricts Gwembe Central and Gwembe North as well as to the areas in Gwembe South which have been off limits during the war.

This expansion will involve not only the planner/coordinator but the other members of the Gossner Service Team as well. Therefore their km-allowance (see agreement, Annex I, page 1, 3-4) appears under the heading of Development Planning and Project Promotion.

B) Objectives

To arrange and conduct survey for new projects;
to plan new projects and programmes;
to prepare budgets for new and existing programmes;
to monitor and evaluate projects - in accordance and under guidance of the Steering Committees of the Gwembe Valley Subdistricts.

C) Estimate

Development planning and project promotion

05 OTHER EQUIPMENT	
b) stationery etc	K 1,000.-

total 05	K 1,000.-
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07 OPERATIONAL FUNDS

a) Overnight allowances	
6 Technical Assistance	
Personnel 10x24x6	K14,400.-
b) km claim for 6 technical	
assistance personnel	
(according Agreement)	
5x 1,500, 1x2,000	K30,780.-

total 07	K 45,180.-
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total Development Planning & Project promotion	K 46,180.-
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Service Unit - Administration, Workshop, Campmaintenance

A) Description

The Service Unit includes the small existing workshop as well as the administration and the campmaintenance. The camp a former road builders camp has sufficient buildings to house the required staff and the necessary offices. But some of the buildings are in a state of very poor repair. The same applies for the furniture which was supplied 13 years ago for a staff of not more than 7. In the meantime the staff has increased considerably.

B) Objectives

To supply the various projects and its staff with the necessary administrative services (accounting, typing, reporting, duplicating etc); to supply the officers of the project with the necessary 4-wheel-drive transport; to secure the reliability of all project transport, the camp-water supply (which is also the water supply for the adjoining villages; to maintain the buildings (GRZ property); to give technical service and assistance to the attached irrigation projects and the Water Development Programme and all the other projects.

C) Estimates

03 VEHICLES

a) Landrover, new	K 21,000.-
landrover, reconditioning	K 10,000.-
c) motor cycle, new	K 2,000.-
d) 2 bicycles, new	K 400.-
total 03	K 33,400.-

05 OTHER EQUIPMENT

a) Workshop	K 1,000.-
Hand grinding machine	K 1,500.-
injector tester	K 600.-
compressor	K 2,600.-
various tools, small	K 3,000.-
protective clothes, face shields, etc.	K 3,000.-
Tyres, spare parts etc.	K 10,000.-
b) Office	
Stationery etc.	K 7,000.-
total 05	K 27,700.-

07 OPERATIONAL FUNDS

a) Salaries and wages	
6 administrative staff	
7 workshop staff	K 28,344.-
3 maintenance workers	

House allowance	K 500.-
Sub.allowance	K 5,000.-
Overtime allowance	K 2,000.-
Other all./overhead	K 2,000.-
Travelling expenses	K 800.-
Leave commutation	K 2,000.-
ZNPF	K 800.-
Contingencies allowance	K 500.-
 b) Fuel and oil	K 23,300.-
c) repairs and maintenance	K 10,000.-
machinery	
d) repairs & maintenance	K 20,000.-
13 staffhouses +	
furniture	K 20,000.-
2 office buildings	K 5,000.-
fences, camp maintenance	K 3,000.-
 total 07	K 116,356.-
	<hr/>
	K 217,456.-
	K 164,344.-

Cooperative Extension Work

A) Description

At the present stage of Development we have in Chief Mweemba's area 3 Credit Unions and 1 Consumers Cooperative, in Chief Sinazongwe's are 4 Credit Unions. Two of the Credit Unions are already registered. One Credit union is organised by the Maamba Colliries workers, the others are organized by farmers and fishermen. There is one Credit Union at each irrigation project.

B) Objectives

To establish Cooperative Societies where needed and asked for; to give advise and financial support to existing cooperatives; to audit existing registered cooperatives; to conduct seminars for cooperative leaders and members.

C) Estimate

Cooperative Extension Work

05 OTHER EQUIPMENT

b) Office Equipment	K 2,000.-	
total 05		K 2,000.-

07 OPERATIONAL FUNDS

a) salary for Zambian Cusa-manager (paid by GM)	K 3,000.-	
j) Education requisits	K 4,000.-	
total 07		K 7,000.-
total cooperative Extension contribution Gossner Mission		K 9,000.-
GRZ/IRDP		K 3,000.-
		K 6,000.-

Female Agricultural Extension

A) Description

The female extension work was started as an GSDP programme in 1980 with 3 major aims: to improve the preventive medical care, (including nutrition), to get women involved in on-going agricultural projects and to look for income-generating projects.

Under 5-clinics and ante-natal care at the Rural Health Centres were taken as helpful point from where to start education in nutrition and hygiene.

Employees from the RHC, community development officers and club leaders were taught in seminars about nutrition, agriculture and teaching methods in adult education.

With the on-going drought the existing structures were used to build up and train local water committees, concerned about the use of clean water and to organize self-help groups to dig wells.

B) Objectives

To continue agricultural education for women;
to strengthen the regular health education;
to build up more local water-committees;
to investigate income-generating possibilities.

C) Estimates

Female agricultural/rural extension

03 VEHICLES

a) pick up	K 11,000.-
d) bicycle	200.-
<hr/> total 03	K 11,200.-

07 OPERATION FUNDS

a) wages, Sinazeze Hall	K 2,000.-
fuel and oil	K 3,000.-
g) seeds	K 500.-
j) seminars (teaching materials)	K 3,000.-
<hr/> total 07	K 8,500.-

total female extension

K 19,700.-

Valley Selfhelp Promotion Fund

A) Description

VSP has grown out of the work of the Gossner Service Team, in 1978, to get self help programmes started in the Gwembe Valley. All such programmes are designed to be self supporting. Any profit made should remain within the fund to set up further programmes. VSP is a registered society. Members are GRZ departments, churches, chiefs, farmers committees, credit unions and private persons. VSP is meant to supplement the development work of the government. As a NGO this society is able to react promptly to spontaneously arising needs. Thus VSP more becomes an important factor for the integrated development activities in the Gwembe Valley.

B) Objectives

To promote and support policies and programmes which are beneficial to and which serve the social, cultural, and/or economic development of the people of the Gwembe Valley and their environment especially those programmes which are geared to reinforce self reliance and self sufficiency.

C) Estimate

Valley Selfhelp Promotion Fund

07 OPERATIONAL FUNDS

- a) Salaries for VSP
Manager K 3,000.-
- j) promotion of selfhelp
activities
(clinics, schools etc) K 15,000.00

total 07	K 18,000.-
contribution GM	K 18,000.-
GRZ/IRDP	K - nil -

Gwembe South Builders

A) Description

Gwembe South Builders Co-op (GSB) was transferred from a building group within the GSDP into an independent and self-reliant Co-op in 1977. The former building group was dealing with building activities within GSDP only. The independent GSB started to work as a contractor for GRZ contracts and private customers. The cooperative has 17 members (bricklayers, carpenters and painters),

B) Objectives

To be involved in the construction of GRZ staff houses, schools, health centres, dams and irrigation facilities.
To produce concrete blocks;
to reactivate local brickmaking;
to introduce wooden doors and windows as replacement for the hardly available steel frames.

C) Estimate

Running costs for GSB will be covered by income produced within the Co-op. The management costs are covered by funds from Gossner Mission.

07 OPERATION FUNDS

j) working capital K 27,100.-

total 07	K27,100.00
contribution GM	K27,100.00
GRZ/IRD/P	K -Nil-

Small scale Irrigation

A) This programme is an alternative to the already existing diesel powered irrigation schemes in Gwembe South. It is an appropriate method to the Gwembe Tonga who lived along the banks of the Zambezi before Lake Kariba was created. Following the receding water after the annual flood they planted an additional crop into the moist soil. The records of the past 10 years show now, that the Lake level follows an almost predictable curve, reliable enough to base an adapted kind of the old zilili system upon.

B) Objectives
To introduce handpumps for the zilili gardening;
To enlarge the fields and secure sufficient water for supplementary irrigation;
To protect the land against cattle by proper fencing;

C) Estimates

01 LAND AND INFRASTRUCTURAL DEVELOPMENT		
d) barbed wire	K 5,000.-	
total 01		K 5,000.-
04 AGRICULTURAL EQUIPMENT		
c) 50 handpumps (HO-2)	K 36,200.-	
1000m flexible pipe	K 10,000.-	
total 04		K 46,200.-
07 OPERATION FUNDS		
d) spare parts for (HO-2)	K 2,500.-	
g) seeds	K 500.-	
total 07		K 3,000.-
total Small scale irrigation		K 54,200.-

Water Development Programme

(dams, wells, boreholes)

A) Description

The water Development Programme has a goal in finding out a long term solution to alleviate future occurrence of drought caused problems as well as utilizing underground water which is safe and clean for domestic and livestock in order to improve health standards and secure surface water for irrigation purposes.

B) Objectives

To drill new boreholes (10) and service the existing ones in the area; to provide assistance and material to wells dug on self-help basis; to survey sites for small dams and weirs in order to catch surface water for irrigation and livestock purpose; to make a follow-up for those dams and weirs abandoned after resettlement.

C) Estimate

Water Development Programme

01 LAND AND INFRASTRUCTURAL DEVELOPMENT

f) dams and irrigation surveys	K 5,600.-
2 pilot dams	K 50,000.-
g) 20 wells, 10 boreholes	K 55,720.-
total 01	K 111,320.-

03 VEHICLES

a) Datsun Patrol Diesel	K 20,000.-
total 03	K 20,000.-

07 OPERATIONAL FUNDS

a) wages + allowances	
4 workers, 1 civil servant	K 7,700.-
fuel + oil	K 3,000.-
1 driver	K 2,160.-
b) fuel and oil for drilling	
rig and drainage pump	K 3,000.-
c) repairs and maintenance	
drilling rig etc.	K 2,000.-
j) office equipment	
(drawing table, drawing	
utensils etc.)	K 1,000.-
total 07	K 18,860.-
total Water development	K 150,180.-
contribution GM	K 18,000.-
GRZ/IRDP	K 132,180.-

Syatwiinda Consolidation and Extension

A) Description

This Pilot Irrigation Scheme was started in 1970/71 with the objectives to find out which crops can be grown successfully under irrigation in the Gwembe Valley and whether the Valley Tonga will respond positively to the total change of life style which goes along with a modern, sophisticated irrigation system. Both questions are answered satisfactorily by now. Paddy rice as a staple food crop supplemented by vegetable provides not only cash to the farmers of Syatwiinda, but also food for the population in the Valley. And the farmers are not only willing to take their share in the financial responsibility for the scheme, they insist as well to provide more plots for more farmers who want to go into irrigation farming.

The project which has grown out of the pilot phase over the years is on the fringe to be handed over to the farmers, but in the meantime the pilot equipment is overaged and worn out. Breakdowns are a regular event and even without the low lake level, it would be extremely difficult to secure a reliable water supply for the irrigation. This unreliability of the water supply has had disastrous economic consequences for the farmers.

Therefore a final capital investment is needed to replace the overaged technical outfit. The discussions with the farmers over the best of experts technical solution were finalised, when an Advisory Committee from the National Irrigation Research Station Mazabuka met with the Representatives of the Syatwiinda Farmers Committee and the Officers of the Project on July, 6 1983.

B) Objectives

To secure a reliable water supply to the main pumping station through a permanent canal even when the Lake is on low level, to secure a reliable water supply from the main pumping station to the feeder canals and the overnight storage reservoir through several pumps of the right caliber; to secure a reliable water supply by a permanent 12 inch asbestos pipe from the main pumping station to the reservoir; to use the old plastic pipe as a standby; to repair the system of channels and gates; to complete the extension, in order to make sure that these final investments are utilised at an economic optimum. To hand over the responsibility for the scheme after the completion of the consolidation and extension phase well planned and well monitored.

Syatwiinda Consolidation and Extension

01 LAND AND INFRASTRUCTURAL DEVELOPMENT

d) fence, 3500m		
Gates	K 13,000.-	
f) Irrigation canals	K 79,000.-	
connection to the lake	K 20,000.-	
pipeline	K 142,000.-	
2 pumps	K 40,000.-	
total 01		K 289,000.-

• 2 •

03 VEHICLES

a) Toyota landcruiser	K 22,000.-
total 03	K 22,000.-

05 OTHER EQUIPMENT

a) Workshop, tools, spares	K 20,000.-
total 05	K 20,000.-

07 OPERATIONAL FUNDS

a) 2 engine attendants	
1 driver	
2 general workers	K 8,000.-
b) Fuel and oil	K 36,000.-
c) repair and maintenance	K 4,000.-
j) stationery etc.	K 2,000.-
total 07	K 52,000.-
total Slatwiinda	K 393,000.-
contribution (from other NGOs, etc)	K 75,000.-
GRZ/IREP	K 318,000.-

Fisheries Pilot Project

A) Description

When the Lake Kariba began to fill with water, there was a large increase in the fish population as nutrients were released from newly flooded soils. By 1983 over 2,000 Gwembe fishermen caught more than 3,000 tons of fish, later the fishing industry declined for various reasons. But the main obstacle was the war and development planners paid little attention to the fishing potential of Lake Kariba.

Because of the recent build up of kapenta throughout the Lake, the total fish population is larger than ever before so that fishing again ought to play a major role in the development of the Gwembe Valley. Fishing could also be one of the major sources of income and employment for some Grade 7 and secondary school leavers throughout the 1980s.

But as a result of the war the fisherboats are destroyed and the fisherman have no capital to buy new boats and new equipment. A large scale loan programme is needed and in order to provide reliable data to base a loan programme successfully upon, an appropriate pilot scheme is essential.

B) Objectives

To find the most suitable type of boats
to find out the repayment capacity of the fishermen
to find out the best organization of fishermen cooperatives
to find ways for making kapenta fishing available to local people

C) Estimates

Fisheries Pilot project

03 VEHICLES

a) VW-transporter	K 20,000.-
<u>total 03</u>	<u>K 20,000.-</u>

05 OTHER EQUIPMENT

c) 6 fishing boats and equipment (nets etc)	K 24,000.-
1 kapenta-rigg and equipment	K 45,000.-
1 kapenta boat small rigg	K 12,000.-
<u>total 05</u>	<u>K 81,000.-</u>

07 OPERATIONAL FUNDS

a) Fisheries promotor	K 6,000.-
fuel and oil	K 3,000.-
b) Fuel and oil for boats	K 4,000.-
c) maintenance	K 2,000.-
j) training course for 18 fisherman	K 14,536.-
<u>total 07</u>	<u>K 19,536.-</u>
total fisheries contribution GM	K120,536.-
GRZ/IMDP	K 6,000.-
	K114,536.-

Dryland Farming Programme (Chief Mweemba's Area)

A) Description

The Dryland Farming Programme is the continuation of the former Rural Works Programme in its educational part. In every village of the area one day seminars to be held and the follow up is done after 8-12 weeks, 4-6 times a year together with the GRZ Extension staff of the area.

B) Objectives

To discuss with all the farmers, men and women their problems; to find out together with them the source of the problems; to find out together with them ways to overcome these problems in the own village, on the own fields

C) Estimates

03 VEHICLES

c) Suzuki Ts 127	K 1,500.-
d) Bicycle	200.-
total 03	K 1,700.-

05 OTHER EQUIPMENT

c) Educational aids for 64 or more Dryland farming meetings in 16 villages 1000 Lima Booklets	K 2,700.-
total 05	K 2,700.-

07 OPERATIONAL FUNDS

a) salary and allowances for general workers	K 2,000.-
b) Fuel and oil for Suzuki	500.-
g) seeds for 16 lima maize	100.-
h) fertilizer dto.	1,000.-

total 07	K 3,600.-
total Dryland Farming Programme	K 8,000.-

NON GOVERNMENT FUNDED PROGRAMMES

Church related work

Introductory remarks

The Gossner Mission engages in development work as part of its Christian witness. Development includes all aspects of individual and communal life such as the social, economic and spiritual aspect. Therefore the Gossner Mission cooperates not only with the traditional leaders and the government officials in Gwembe South but also with the local churches. One member of the Gossner Service Team has always been a reverend. His task was to concentrate on the spiritual and cultural aspect of development and to work together with the local churches, being recognized by the United Church of Zambia as an associate minister. He was also involved in the Development work of GSDP (ADMINISTRATION) and of VSP (ADVISORY)

1982

Rev. K. Jaehn was working here until May 1982 when he left for Germany. After his departure the church work was not continued.

1983

We arrived in April, 1983. The first months were mainly a period of orientation. We spent some days at the headquarters of TEEZ in Kitwe (=Theological Education by Extension in Zambia, a programme to train local church leaders of different denominations by individual studies study groups and practical work, thus learning by doing) to get familiar with that programme. We participated in a Tonga language course. We visited church leaders on different levels and local congregations. Besides orientation we started working within the Kanchindu Consistory of UCZ (covering Gwembe South) preaching, pastoral work and advisory activities.

further objectives for 1983

- to continue visiting local congregations and local people,
- to preach regularly in the different UCZ congregations,
- to continue with pastoral and advisory work where needs arise,
- to continue learning the Tonga language and culture,
- to participate in a TEEZ-tutor training,
- to find out the need of and willingness for local church leadership training,
- to introduce the TEEZ-programme.

objectives for 1984

- to continue above described church work,
- to start 2 TEEZ groups,
- to stimulate the discussion about mission and development work in all its aspects amongst the project staff,
- to arrange for new staff members an introduction into the religious, social and cultural life of the Gwembe people,

This work is financially sponsored by the Gossner Mission. Funds from GRZ are not required.

ADMINISTRATION, WORKSHOP AND CAMP MAINTENANCE

on-going-project

03 VEHICLES:

The programme is having only one government Land Rover purchased/received in due to too much demands on it which has resulted in its overuse it will need to be reconditioned in 1984

K 10,000.-

With the expansion and reactivation of the programme in terms of activity, area and staffing, the need for a new diesel LandRover for coordination, organisation, supervision and purchasing of materials can hardly be over emphasized.

K 21,000..

For easy access to remote areas and where only one officer is needed the use of a motorcycle will be encouraged as it reduces transport costs, considerably. One motorcycle is, therefore, planned to be purchased in 1984.

K 2,000.-

For administrative contacts between the camp, the boma and other nearby government departments and related institutions and also for supervision of nearby projects, the use of bicycles by members of staff will be encouraged. Thus two new bicycles will have to be bought in 1984.

K 400.-

03 total

K33,400.-

05 OTHER EQUIPMENT

a) Workshop

The workshop should be seen as a service unit of all the programme activities. It also maintain the camps materials and equipment. With the expansion of the programme activities some new equipment materials and tools will need to be purchased to re-equip the workshop.

K 20,700.-

b) Office Stationery

For general correspondence, drawing of plans and preparation of reports, office stationery in terms of paper, stencils, duplicating paper, printing paper etc. will need to be purchased.

To improve and maintain communications with provincial offices in Choma, central ministries in Lusaka and also with suppliers of materials, a telephone line will need to be connected. K 7,000.-

05 total K 27,700.-

07 OPERATIONAL FUNDS

a) Salaries, wages, allowances and other expenses for administrative staff (6), workshop staff plus drivers (7) and camp maintenance workers (3). All of these workers stay in their own houses, therefore, housing allowance has to be paid. Due to the distances involved between the camp and project sites and where materials and other administrative facilities like banks, accounting unit are based, the incurring of substance and overtime expenses become inevitable. Other expenses are ZNPF and Trade Union contribution and any other contingencies. K 41,944.-

b) Fuel and Oil:

The location of the camp in terms of project implementation areas; district administration headquarters, Gwembe boma; provincial offices, Choma, sources of materials and central ministries, Lusaka, certainly involve a great deal of travelling. It has, also to be borne in mind that the camp relies on diesel powered engines for its electricity and water supply.

K 23,300.-

c) Repairs and Maintenance

Machinery since the camp is not connected to the electricity supply network and that it relies on diesel powered engines and also considering that water is pumped with the aid of an engine pump, the repair and maintenance of these machines need to be seen as an on-going process.

Office machines like the duplicating machine needs to be taken for service and a photocopy machine needs to be bought.

K 10,000.-

d) Repairs and Maintenance

Camp and offices: The camp has thirteen (13) staff houses and most of them need some general repairs. And since most of the officers are on technical assistance agreements, furnishing in terms of hard furniture will need to be provided in their houses. The conference room which is also used as a library and reading room needs to be furnished with proper tables, chairs and cabinets. The programme faces an acute office accommodation problem. Most of the officers, therefore operate in their own houses. For easy coordination, communication and monitoring of staff movements a ' ' office block will need to be furnished.

K 28,000.-

07 total K 103,244.-

GRAND TOTAL

K 164,344.-

Maamba Credit Union: due to problem with registration decrease of membership and share capital. Otherwise share capital would have been at K10,000, membership at about 200 after one year of existence (started in August 1981).

Nkandwe Credit Union: no progress.
(started in 1978)

Sinazeze Credit Union: started late December 1982 with 11 members.
Sinamalima Credit Union: started in August, 1981, membership at 15, share capital at K100.-

Buleya Malima Credit Union: started in April 1982, membership about 15, shares K250.

Muuka Credit Union : started in October 1981, did not get enough attention to make considerable progress.

Maaze Consumers' Cooperative: started to operate in August 1982. Sells mealie-meal with special permission. Trading license is applied for. Manager and salesman are employed. Membership restricted to 30 (in the beginning), share capital K880. Working capital K2,300 (loan from Credit Union Syatwiinda).

In general the lack of funds caused a lack of intensive education and training. Especially societies like Muuka, Malima, and Buleya were suffering from this. Besides this the establishing of Maamba Credit Union and the Maaze Consumers' Cooperative needed very much care and time.

(iii) 1983 report

Money asked for:	K5,000
approved:	2,000
released:	nil (up to end of July 1983)
spent:	nil

Money from Gossner Mission:	Salary and Travelling all. K 17,400
(up to 30.6.1983)	Car for the Consumers' Coop. K 13,000
	Funds for seminars 350
	Total K 30,750

As no money has been released up to now no seminars could be conducted. Membership of the societies is steadily increasing, the share capital is stagnant or slowly increasing due to money problems in this second year of drought. Meetings with traditional leaders in order to increase membership had to be dropped several times for various reasons.

The internal auditing of the books of accounts is done for most of the societies, only for Maamba Credit Union it is still on-going. The Maaze Consumers' Cooperative sold already 11 loads of meal-meal and is now operating with a license. Maamba Credit Union is at 400 members now. The monthly share contributions and loan repayments amount to K 17,500.00.

COOPERATIVE EXTENSION WORK

CAPITAL AREA 1984

A. On-going Products - Description and Targets

(i) PROJECT CAPITAL REQUIREMENTS

- to establish cooperative societies where needed and asked for,
- to give advice and financial support to existing cooperatives up to the date of their registration,
- to audit (internally) existing registered cooperatives,
- to conduct seminars in order to make the Boards of Directors working according to the Cooperatives Act and Rules as well as the by-Laws and to give the common members of the cooperatives the knowledge about how their society is organized operates.

PRESENT STAGE OF DEVELOPMENT

In Senior Chief Kweemba's area 3 Credit Unions and 1 Consumers' Cooperative are running. In Chief Sinazongwe's area 4 Credit Unions are established. Two of the Credit Unions are registered. One of them is at Maamba, organized by Maamba Collieries Ltd. workers. Besides Maamba all other Credit Unions are organized by mostly farmers and fishermen. There is e.g. one Credit Union at each irrigation.

The Consumers' Cooperative developed out of Syatwiinda Credit Union. They are working close together.

SPECIFIC TARGETS FOR 1984

- all present Boards of Directors of the established societies should be enabled to carry out their duties and responsibilities independently from the cooperative extension worker,
- at least half of the number of common members should be given the knowledge about their societies organization and operation through seminars,
- through this a constant increase of membership number and share capital should be initiated,
- another Credit Union should be established at Sinazongwe.

(ii) 1982 Report

Money asked for: K 1,500.-

approved: -nil-

released and spent -nil-

Money from Gossner Mission, Berlin: Salary and travelling allowance: K27,500.-

Progress of particular societies

Syatwiinda Credit Union: membership increased from 178 to 205, (started in 1977) share capital remained at K10,000 due to drought, loans given increased to total of 5500K (nearly doubled), delinquency on loans slowly decreasing.

-4-

FEMALE EXTENSION WORK IN GWEMBE SOUL. D.I.V. PROJECT

Objectives for female extension work for 1984

1. to continue agricultural education for women by organizing them in a production group at B/Malima Irrigation promoting family gardens near rivers and wells
2. to strengthen the regular health - and nutrition education at each of the 7 rural health centres by training clarified daily employees and comm.development officers in seminars.
3. to continue building up local water-committee which promote wells, digged by self-help
4. to investigate income-generating possibilities to set up an economically-sound programme.

Brief History of the programmes and strategies

Female extension work in the GSDP was started 1980 with 3 major aims: to improve the preventive medical care (including nutrition), to get women involved in on-going agricultural projects, to look for income-generating programmes.

To generate some money the first club started on a sisal programme but it closed down after 2 years as the economical basis was not sound and members lost in arrest. Under 5 clinics and ante-natal care at the RHCs were taken as helpful point from where to start education in-nutrition and hygiene. Clarified daily employees from the 7 RHCs, comm.dev. officers and club leaders were assembled in seminars and taught about nutrition, agriculture and teaching methods in adult education.

Education on nutrition was combined with information how to grow the promoted food so co-operation with agricultural extension staff is required. In Sinazeze one woman was employed with half a contract to teach, hold cooking demonstrations, organize a demonstration garden and keep Sinazeze Hall clean. In the line of agricultural education a club at B/Malima Irrigation was found. Where members cultivate and harvest together 1 Lima irrigated land. Family gardens were encouraged and sponsored with seeds.

1982 existing structures (RHCs clubs seminars) were used to build up and train water committees about the use of clean water and the organization how to dig a well on self-help, self-help means here: villagers have to dig themselves down to water-level and are sponsored with cement for casing by GSDP.

Activities 82 . In March and November 82 two 'big' seminars - each 5 days and 25 participants - were held for c.d.e. and community development workers about under -5-clinics and nutritional value of wild vegetables. Six of those trained women started teaching themselves afterwards in clinics and follow-up seminars which were held in 4 existing women's clubs.

Teaching on cultivation of groundnuts and beans was excluded, women were encouraged to start family gardens by providing them with seeds. Suleyman Ilima Irrigation club continued growing maize and mukalele. From July 12 onwards the first were committee was formed in Sinazeeze and started informing themselves and collecting villages who were interested to improve their water situation.

Activities and finances 1983

All money released by GIZ for female extension work was spent on salary of an employee who is teaching and cleaning in Sinazeze Hall.

All other activities were paid by money from donations from Gossner Mission. Such were:

2 seminars for health and comm.dev. on ante-natal care and better nutrition (1 week each)	K	600
10 follow-up seminars are at RHCs clubs	K	600
teaching material (including stationeries, cooking utensils, etc)	K	250
sponsoring Buleya Malima Irr. club with seeds	K	80
seeds for family gardens near wells and rivers	K	120
sponsoring 2 NRDC students who start a research on nutritional status (Aug/sept) with K3.50p.day	K	420

As there is close co-operation between female extension activities and village water supply K2,000 were shifted to water development to enable them to buy cement for casing wells which were digged on self-help.

WORKPLAN for 1984

Since in February 1984 my post will be taken over completely by a Zambian female extension officer, she might change the workplan according to her opinion. She will look into income-generating possibilities and intensify agricultural education.

As a central core of this work is organizing and holding meetings with people from different areas good transport, not only for herself but also for participants is necessary.

03 a. Datsun pick up K 11,000
d. a bicycle K 200

07 a. wages	K 2,000
g. seeds	500
j. teaching aids, cooking utensils	
stationerries	K 3,000
	K 16,700

It is planned to hold 2 more 'big' seminars and let them be followed in different places by small seminars, each 1 day long, subjects: nutritional food and water hygiene. Water committees should establish around the RHCs and the attending mothers. Malima Irrigation will continue together women on irrigation production. The advice how to improve village gardens will be expanded.

-5- VSP

1. Historical background and objectives

VSP has grown out of the work of the GST. In late 1978 GST started to operate a Gwembe Selfhelp Promotion Fund with an own bank account and an initial loan of G.M. It was the purpose of this fund to make possible the setting up and operation of various selfhelp programmes for the Gwembe Valley. All such programmes were designed to be selfsupporting and any profit should remain within the fund for the setting up of further programmes. In 1980 VSP was established as an officially registered society. All organised groups in Gwembe South which are working for development were invited to become a member in this society such as GRZ departments, chiefs, farmers' committees, churches, credit unions. From the beginning on VSP was meant to be a supplementary development agency. It was intended to fill some gaps which could not be filled by the government. As a nongovernmental institution VSP is also in a position to react promptly to spontaneously arising needs. Thus VSP gradually became an important factor for integrated activities within the operational field of GSDFP.

In its constitution the objectives are declared as follows: "to promote and support policies and programmes which are beneficial to and which serve the social, cultural, and/or economic development of the people of the Gwembe Valley and their environment especially those programmes which are geared to reinforce self reliance and self sufficiency. May those programmes be carried out by the GSDFP, by other Government projects, by authorities, agencies, organisations or individuals". The general policy of VSP is carried out by its Executive Committee which is elected by the annual general meeting. According to the constitution this committee administers, manages, and controls the affairs and the property of VSP. Since March 1982 a full time coordinator is employed and the society has now decided also to employ permanently a trained book-keeper.

2. Description of Programmes

In general VSP is operating in two sections: the one section includes productive and trading programmes like blacksmithing and brickmaking, selling of essential commodities, cement, cycle spares, Tonga Crafts and maize/mealie meal. This section is aimed to be money generating. The other section includes financial and technical support of communal selfhelp activities like building up rural health centres, schools, staff houses etc. (VSP is assisting such projects to the maximum of 50 % of the costs.) Besides these two sections there is still the programme of loans granted to individuals for educational, agricultural, and housing purposes.

Report on 1982

The target for 1982 to complete Sikoneka selfhelp clinic was not reached due to different reasons: the actual building work was much delayed by the delayed delivery of steel window/door frames; discouragement spread among the community due to the drought problems.

Sinazeze selfhelp staff house for a midwife was completed and handed over to Health Department in May.

The famine relief programme was called for by the S.A.O. Sinazongwe. VSP was authorised to sell maize and mealie meal. 400 bags of maize and 6,495 bags of mealie meal were transported by the VSP lorry from Choma mainly to Sichemba area.

The blacksmithing programme was continued. (about 400 axes in 82).

The brickmaking programme was discontinued, only old stock of 81 was sold.

The selling of commodities (milkpowder, salt, dried kapenta, groundnuts seed), cement and old stock of cycle spares was continued as before.

Due to the poor harvest the rice programme could not be continued. No rice from the irrigation farmers could be bought; the shelling machine stood idle.

The Tonga crafts programme was going on; crafts totally amounting K 10,000.- were bought from local craftsmen in Sinazongwe and Mweemba area. Through all the year 35 loans were granted amounting totally K3,000.- the repayment of loans is still the same big problem as before.

Financial situation

In 1982 VSP has received K 15,000.- through GM (material and cash donation).

GSDP 1984 BUDGET

SECTION: NON GOVERNMENT ORGANIZATION ACTIVITIES

GWEMBE SOUTH BUILDERS CO-OP. SOC. LTD.

Under Part A. Groupings - response

(i) Project Description

Gwembe South Builders Co-op (GSB) was transferred from a building group within the GSDP into an officially independent and selfreliant Co-op in 1977. Up to 1975 the building group was dealing with building activities within GSDP only, like construction of irrigation facilities and general buildings and building maintenance. 1975 GSB started to work as a contractor for GRZ contracts and private customers. The main activities area is Gwembe South Sub District.

GSB is consisting of 17 Co-op members (bricklayers, carpenters and painters). One manager, one supervisor and one accountant are working permanently for GSB. In the past and at present the main projects carried out were/are staff house, schools, health centres, dam construction, construction of irrigation facilities, production of concrete blocks, sales of building materials to the local public and advising individuals to improve local housing. For 1984 GSB will be prepared to continue carrying out projects of the above mentioned types. Besides that it is planned to reactivate local brickproduction and introduction of wooden doors and windows in order to cover the actual lack of steel goods (trials are started already).

(ii) 1982 REPORT

The financial and organizational situation improved in 1982, although there were few contracts only. Some surplus could be produced, which is used as working capital to prefinance running projects. Costs for the manager and his transport was covered by Gossner Mission as mentioned in separate report.

Under part C. 1984 Estimate

Running costs for GSB will be covered by income produced within the Co-op, excluding management costs, which will be covered by funds from Gossner Mission as in the past, according to separate estimate.

SMALL SCALE IRRIGATION PROGRAMME

This programme is an alternative to the already existing diesel powered irrigation schemes in Gwembo South. It is an appropriate method to the Gwembo Tonga who lived on the banks of the Zambezi before Lake Kariba was created. They used to wait until the annual flood exposed the alluvial flats. Then following the receding water they planted their crops into the moist soil; the root system follows the water table downwards. This method was giving them additional harvest during the dry season. The construction of Kariba Dam brought the big change. The resettled Tonga tried to follow their old method on the shores of the lake. But he failed because of sudden rises and falls of the lake level. They became discouraged and the majority gave up soon. But records of the last ten years show that the operation of the sluice gates at Kariba dam became more efficient so that the lake level follows an yearly predictable curve. This seems to be reliable enough to reintroduce the old planting method.

This programme could be a great contribution to the food production in the famine stricken lake shore areas. But to be convinced the Tonga people need support. To enlarge the fields and to ensure a sufficient water supply even for vegetables handpumps are needed. For protection against cattle fencing is necessary.

1984 estimates

Handpumps incl. spareparts and pipes, barbed wire and seeds should be given to selected farmers (50).

WATER DEVELOPMENT PROGRAMME

INTRODUCTION

The Water Development Programme has a goal in finding out a long term solution to alleviate future occurrence of drought caused problems as well as utilizing underground water which is safe and clean for domestic and livestock in order to improve health standards and the surface water for irrigation purposes.

OBJECTIVES FOR 1984

- (i) to drill new boreholes not exceeding 10 with the material to be purchased and maintain and service the existing boreholes within the area.
- (ii) to provide assistance and material to wells dug on selfhelp basis this should not be less than 20.
- (iii) to survey sites for erecting small dams and/or weirs in order to catch surface water for irrigation and livestock purposes exceeding 4 sites and make a follow up to those dams/weir abandoned after resettlement, more especially Kasika where there is a potential to irrigate an hectarage exceeding 5ha.

BRIEF HISTORICAL BACKGROUND

The village water development programme was started in 1976 with the aim to provide safe water for domestic and irrigation purposes. Hence two sources of water namely ground and surface water were embarked upon. The ground water is got by means of drilling boreholes and digging wells whereas the surface water is caught by erecting dams/weirs on water courses. The choice of the source of water solely depends on local circumstances.

WHAT HAPPENED LAST YEAR

Little was done last year due to the fact that the programme lacked funds and after the departure of the Water Engineer in 1979. The money which was asked for and approved for use in 1983 is not yet released. Therefore the programme is depending on Valley Self-help Promotion Society for its running.

WORK PLAN FOR NEXT YEAR

It is planned that in the first quarter we should embark on some of the wells and boreholes and from the beginning of the second quarter would be engaged in dam/weir-site surveys. The remaining two quarters resuming our work on wells and boreholes and construction of pilot dams. The detail for costing related to the objectives is also attached - this would allow us to achieve on objectives effectively.

In the GSDP budget 1983 the estimate was K40,000 for irrigation works (01-f) and K9,000 for operational funds (07). The GRZ approved only K 3,000 for irrigation works (01-f) but did not release it yet.

For operational funds (Diesel -07-b) no money is released yet.

GM sent up to June '83 K14,000 for irrigation works and is going to pay K30,000 more during 1983. GM paid up to June 1983 K9,000 as salary and travelling allowance for the officer i/c.

C 1984 Estimate

Syatwiinda Irrigation Scheme is now 13 years old, also all the irrigation equipment, the buildings, pipelines, canals and the fence. To prepare the handing over to the farmers some urgent repairs, replacements and completions are needed. For this GM paid already in 1982 and 1983 about K70,000 and is going to pay K39,000 more during 1983 (all figures include the salary and the travelling allowance for the officer i/c. In 1984 GM will most probably pay K75,000 (excluding salary and travelling allowance for officer i/c).

(The following estimate is splitted in consolidation for the present Scheme and Extension for the extension of the scheme.)

	Consolidation	Extension
3,500 m sand - rolled tiles, fencing poles, cables, tools, labour	K	K
	10,500--	1,000--

1,000

SYATWIINDA IRRIGATION SCHEME
TECHNICAL CONSOLIDATION AND EXTENSION

I Project Description

Syatwiinda Irrigation Scheme was started 1970. The aim of the Project was to learn whether in the Gwembe Valley the practice of dryland subsistence farming could be supplemented by irrigation farming regarding physical and human conditions.

At present 80 farmers are working on 22ha irrigated land supervised by the elected Farmers Executive Committee, the Agricultural Advisor i/c and the Gwembe South Development Project officer i/c (Gossner Service Team member). 70 new applicants are waiting for new plots to become irrigation farmers in the scheme (Syatwiinda Irrigation Scheme). Also the present farmers are asking for bigger fields in the scheme. So the question is answered, irrigation farming is possible within the Gwembe Valley and is accepted by its people.

The majority of the farmers are members of the Syatwiinda Selfhelp Savings and Credit Union and/or Mazze Consumers Co-operative. This co-operatives are helping the farmers in getting loans for e.g. farm implements.

Technical difficulties are arising due to the now 13 years old technical equipment and the sinking water level of Lake Kariba during the last 2 years.

In the next future GSDP (Gwembe South Development Project) will start a handing over period over some years to give responsibility over the scheme to the farmers. The preparation for this handing over period will start in 1984. An extension of the scheme was already started in 1982 financed by GM (Gossner Mission Berlin). This part of the handing over preparations will continue in 1983 and 1984.

II 1982 Report

In 1982 there was no rice harvest because of the low water level of Lake Kariba, the poor rainy season and several pump breakdowns. In the dry season vegetables were grown. For 1982 GSDP budgeted for Syatwiinda Irrigation Scheme K 40,000.- for irrigation works (01-f) and K9,000 for operational funds (07) but nothing was released. GM sent K28,900 for irrigation works and paid for the officer i/c salary and travelling allowance K 18,150 (The officer is responsible for Syatwiinda Irrigation Scheme and the Dryland Farming Programme in Sen.Chief Mweemba's area. The figure shows the share spent on Syatwiinda Irrigation Scheme).

III 1983 Report

In 1983 there was no rice harvest due to the drought as the year before.

		Consolidation	Extension	
		K	K	Total
01.	<u>Land and Infrastructural Development</u>			
d)	<u>Fence and Firebreaks</u>			
3,500	fence-barbedwire, fencing poles, staples, tools, labour		10,000	
2 gates			1,000	
				11,500
	d) total			18,000
f)	<u>Dams and Irrigation works</u>			
f1)	<u>Canals etc.</u>			
Reservoir	- repair + maintenance	2,500	2,500	
750m maincanal	- repair + maintenance	9,000	-	
325m maincanal	- erection(extension)	-	40,000	
2,300m irrigation	- repair+maintenance canal	9,000	-	
1,800m Irrigation	- erection(extension) canal	-	7,000	
2,750m drainage	- repair+maintenance	5,000	-	
2,250m drainage	- erection(extension)	-	4,000	
		25,500	53,500	
				79,000
f2)	<u>Connection to Lake Kariba</u>			
Development on channel from Lake Kariba to Syatwiinda main pump station, deepening and widening by excavator		10,000	10,000	
				20,000
f3)	<u>Pipeline</u>			
350 asbestos pipes 12" class "D" @ 4m long		42,000	42,000	
accessories: T-pieces, valves, etc.		24,000	24,000	
laying pipeline and earth work		5,000	5,000	
		71,000	71,000	
				142,000
f4)	<u>Pump</u>			
2 pump units(Diesel). incl.necessary		-	40,000	
	f) total	106,500	174,500	
				281,000
03.	<u>Vehicles</u>			
a)	1 Toyota L/cruiser Diesel		11,000	11,000
				22,000
05.	<u>Other Equipment</u>			
a)	Workshop	10,000	10,000	
total	01 - 05	134,000	207,000	
to be financed by GM in 1984		-	75,000	
				341,000
		134,000	132,000	
	carry-over		266,000	

07. Operational Funds

1984 Systwiinds Irrigation Scheme will cover about 50ha. irrigated land. By reason of the very poor rainy seasons 1981/82 and 1982/83 the water level of Lake Kariba is very low. So the pumps can not rich their full capacity and therefore they have to pump longer. So the operational funds will be higher than in other years.

a) Salaries, Wages and Allowances

2 engine attendances	K 3,000
1 driver	
2 general workers	<u>K 8,000</u>

b) Fuel and Oil

7,000 pumping hours (2 pumps)-	K 36,000
diesel-consumption 6l/h=42,000l	<u>K 2,000</u>
oil and greasc	<u>K 38,000</u>

c) Repair and Maintenance (Machinery)

for 2 pumps - spareparts, repair	
+ service	<u>K 4,000</u>

j) Other expenses

Stationery and work clothes	K 1,000
Participation at the agric.show	<u>K 1,000</u>
total 07.	<u>K 52,000</u>
+ carry-over from page 3	<u>K266,000</u>
+ Money from GM for extension	<u>K 75,000</u>
Total=	<u>K393,000</u>

GRZ/IRDP K318,000

Fisheries Pilot Project

1) Introduction

When the Lake Kariba began to fill in the late 1950s, there was a large increase in the fish population as nutrients were released from newly flooded soils and predators were dispersed over a wider area by the spreading waters.

With the assistance of a well planned and implemented fishery development programme, Gwembe men responded to this new opportunity by taking to fishing in large numbers. By 1963, for example, there were over 2,000 Gwembe men fishing the Lake, with the fish catch exceeding 3,000 tons.

During the late 1960s and throughout the 1970s, fishing was no longer a major source of income, with both production and number of fishermen dropping sharply. During 1970 less than 1,000 fishermen caught less than 1,000 tons of fish. Fishing declined still further during the war years.

As a result, during the 1970s development planners paid little attention to the fishing potential of Lake Kariba.

Yet the fish are there. Because of the recent build up in kapenta throughout the Lake, fish populations are larger than ever before. With careful planning and plan implementation it should be possible for fishing once again to play a major role in the development of the Gwembe Valley.

Fishing could be one of the major sources of income and employment for some Grade 7 and secondary school leavers throughout the 1980s.

But as a result of the war many fisherboats are destroyed. The fishermen who had to suffer the loss have no capital to buy new boats and new equipment. The few small canoes in existence are not safe enough in deep water, where the best fishing grounds are.

Kapenta fishing as a new possibility is practised exclusively by people from outside. The local fishermen, who mostly man the kapenta rigs usually have the knowhow to do kapenta fishing but the capital necessary for one rig is not available for them.

In order to overcome these obstacles a large scale loan programme for Gwembe fishermen has to be launched.

But since there are no reliable recent figures available to base such a loan programme on convincing data on appropriate pilot scheme is essential.

Since the traditional boat fishing and the kapenta fishing are very different in regard of capital input, technical equipment needed, skills required and turnover of money two pilot projects are required, one for boat fishing and one for kapenta fishing.

But as the pilot project for traditional boat fishing can be organised on a loan basis right from the beginning with only the risk through loss by accident covered by IRDP; the pilot project for kapenta fishing has to be run in two phases; phase one to obtain the necessary data and skills for the staff of the Fisheries Training Center, phase two to be conducted on loan with fishermen.

2) Goal of the pilot projects

a) The Goal of the pilot projects can be identified on the one hand by taking the rapidly growing population in Zambia as a whole and in the Gwembe Valley in particular into consideration:

more food has to be produced locally in order to feed more people properly,

more jobs have to be found or created to give an increasing number of school leavers the chance to earn their living in dignity and to improve the quality of their life.

b) On the other hand the national economy of Zambia cannot afford to neglect natural resources like the production potential of Lake Kariba.

But in order to make use of the human resources as well as of the production potential of the Lake Kariba it is essential to obtain the necessary data and facts in advance of a large scale loan programme.

These data and facts are essential to guarantee the success of such a large scale programme for the benefit of the local people and the national economy on the one side; but they are equally essential to secure the proper fulfillment of the obligations of the loan programme.

3) Objectives of the pilot projects

a) boat fishing

- 1) To find out the most suitable type of boats available
- 2) Income of the participating fishermen over the 18 month of the pilot project; conditions of loan repayment
- 3) Best size of the fishermen cooperatives in regard of income and financial burden through the loans
- 4) Most economic number of boats per cooperative
- 5) Kind of organisation of fishermen cooperatives (family based, village based etc.)
- 6) Most appropriate way of money flow, banking and loan handling
- 7) Most appropriate type, length and curriculum of training for the fishermen

b) kapenta fishing

-Phase 1 -

- 1) Give the FTC staff adequate experience in handling, technical and financial management of the two possible types of rigs
- 2) Give the FTC staff the chance to improve the rigs technical the chance
- 3) Give the FTC staff/to improve the method of kapenta fishing

-Phase 2 -

- 1) To find out the most suitable type of kapenta fishing equipment for cooperatives
- 2) To find out the income of kapenta fishermen and the conditions of loan repayment
- 3) To find out the best size of kapenta cooperatives in regard of income and financial burden through the loans
- 4) To find out the best kind of organisation of a kapenta cooperative (family based, village based etc.)
- 5) To find out the most appropriate way of money flow, banking and loanhandling
- 6) To find out the most appropriate type, length and curriculum of training for kapenta fishermen.

5) Execution of the pilot projects

The monetary control of the pilot projects will be executed by the IRDP Coordinator Gwembe Valley.

The monitoring of the pilot projects in regard of income, expenditure, technical maintenance, response of the participants, banking and loanhandling will be in the hands of the fisheries promoter, who will work in close cooperation with the staff of the fisheries training center and the IRDP Coordinator.

A monthly report based on the day to day data of the pilot projects will be given by the fisheries promoter.

A monthly meeting will be held with the participants of the pilot projects.

After 12 months an evaluation of the pilot projects will be conducted by an independent body of experts.

This evaluation together with the monthly reports and the reports given by the fisheries promoter, the Officer in Charge of FTC and the IRDP Coordinator will be the foundation for the broad based loan programme for fishermen in the Gwembe Valley.

The fisheries promoter with all the experience gained through the pilot projects will continue as promoter for the follow up programme.

The small car (pick up) assigned to the promoter during the pilot phase will become property of the fishermen cooperative and stay with the promoter.

The necessary training will be conducted by the staff of the Fisheries Training Centre, Sinazongwe.

DRYLAND FARMING PROGRAMME

Sen. Chief Mweemba's Area

The Dryland Farming programme is the continuation of the former Rural Work Programme in its educational part. In every village of the area one day seminars will be held and the follow up will be done always after 8-12 weeks, 4-6 times a year. The seminars will be done together with the extension staff of the area. The aim is to reach all the farmers, men and women, to see all the special problems of each village and for the farmers:

learning by doing - in the own village - on the own field. The preparation for this programme and the first "Dryland Farming Meetings" on experimental stage started early 1982.

1982 Report

Beginning of 1982 the GSDP-Staff, Dr. Scudder and Dr. Colson developed the idea of the later officer i/c to found a Dryland Farming Programme. This programme was confirmed by Sen. Chief Mweemba, ADAO Sinazongwe, DES Sinazongwe and D.O Gwembe during May and June 1982. In July 1982 the programme started in the villages Mucekwa, Mweela, Sinakodobo, Sinakoba, Sulwengoonde, Siabaswi, Mweemba and Kanyemba. In 1982 13 meetings were held with 640 participants (55% male 45% female). The subjects: Farm preparation and Maize production (LIMA). No funds from GRZ were involved. GM paid the salary and the travelling allowance for the officer i/c, K 10,000 (The officer is responsible for Syatwiinda Irrigation Scheme and Dryland Farming. The figure shows the share spent for Dryland Farming).

1983 Report

Beginning of 1983 8 more villages came into the programme: Muuka, Dengeza, Nyanga, Syawaza, Syanzovu, Siampondo, Kafwambila and Sinakumbi. Up to June 1983 19 meetings were held with 1060 participants (60% male/40% female).

The subjects: Ploughing and Crop rotation.

GM paid up to June 1983 the salary and the travelling allowance for the officer i/c K 9,000.- and is going to pay also for the rest of the year.

In the GSDP 1983 K 5,000 were estimated. The GRZ approved K 2,000. Up to now nothing is released.

C 1984 Estimate

1984 we should start to make demonstration fields in each village. Therefore the extension staff should be mobil and a gen. worker should be employed.

03) Vehicles

c) Suzuki Ts 125 (for extension staff) K 1,500.-
d) bicycle (for gen. worker) K 200.-

K 1,700.-

05) Other Equipment

c) Education aids for 64 or more
Dryland farming Meetings in
10 villages and
1,000 LIMA-booklets K 2,700.-

07) Operational Funds

a) Salary and allow. f. gen. worker	K 2,000.-
b) Fuel and Oil for Suzuki	K 500.-
g) Seeds for 16 Lima maize	K 100.-
h) Fertilizer for 16 Lima Maize	K 1,000.-
	<u>K 3,600.-</u>

Total=----- K 8,000.-

Summary of the action of the Advisory Committee for the
Siatwinda Irrigation Scheme held at the National Irrigation
Research Station Mazabuka on Wednesday, July 6, 1983, 10.30-13.15

Chairman: Mr. T.C.H. Hill, Principal Research Officer NIRS
Secretary: Mr. Schaefer, Coordinator I.D.P. Gwembe Valley
Members: Mr. I.A. Qasem, Senior Technical Adviser
Mr. R.P. Pradt, CCZ, former GST, 7 years Siatwinda
Mr. Isaac Krisifoe, former GST, 10 years Siatwinda (exc.)
Invitees: Hon. Senator Mief Mweenda, Farmers Representative
Mr. V.S. Sankondo, Farmers Representative
Mr. Mutinta, Extension Officer, GRZ
Mr. Samson Mbale, Water Engineer, GRZ
Mr. Hans Fuchs, GST
Mr. Moses Banda, Economist, GRZ
Guests: Mrs. Sietske Krisifoe GST
Mrs. Ingrid Fuchs GST
Mr. Peter Wendt, GST
Mr. Fleming Danish Volunteers

Recommendations of the Advisory Committee:

- 1) To deepen the canal between the Lengwe and the main pumping station
- 2) To instal 3 strong slowrunning permanent pumps and 1 standby
- 3) To instal a 12 inch asbestos high pressure pipeline from the main pumping station to the reservoir
- 4) To instal new boxes for a direct distribution system
- 5) To repair the main feeder channel
- 6) To repair resp. instal a drainage system with gates

Summary of the discussion:

To begin with, Mr. Schaefer outlined the objectives of the meeting: Siatwinda was started as a pilot-project by GRZ 1970/71 to find out, what could be grown successfully under irrigation in the area and to see how the local farmers would respond to the change of lifestyle that goes along with a modern intensive irrigation system.

Meanwhile we have learned that especially rice can be grown successfully and profitable and the response of the local farmers towards irrigation is very positive.

But there are constraints as well: chiefly the unreliable water-supply for the irrigated crops.

This constraint has to be overcome in order to hand over the project to the local farming community, which is necessary because the pilot phase of the project is passed and over.

The objective of the meeting is to find the most reliable technical solution for the water supply system and to find a solution which minimizes the future running expenses.

The Chairman taking up this, pointed out the meeting has to look for the best solution in regard of use of funds and in regard of the background of the project: it ought to be simple to operate with a minimum on maintenance cost and spare parts.

Mr. Qasem stressed the necessity to make the project economic sound in regard of land capacity, pump capacity and farmers capacity.

Mr. Bredt remembered that very soon after he started to work at the Siatwinda Pilot Project in 1971 the question came up, whether the project is economic viable. He also remembered that break-downs of the water-supply system started already in the mid-seventies.

Reports of the Farmers representatives:

1) S. Chief Wweenba:

The main problem: there is not enough water through engine breakages, which happened even before the drought of the last years. Engine repair may sometimes take 6 month. In addition there are leakages caused by rats.

2) Mr. Syakondo:

There is not enough water, it takes 3-4 hours to fill a channel. With a breakdown there is no water for 3 weeks. It takes 30 minutes until the water reaches the reservoir. A long canal to the main pumping station is needed.

Reports of the Officers:

1) Mr. Mutinta:

The type of pump and pipeline are causes of failure. The pipes are not suited. Low pressure pipes. Cramps are required. Farmers spend a lot of time repairing the pipeline. The canal to the pumps is not good, it should be lined with bricks.

2) Mr. Fuchs:

The pipe problem is operational. The pump is producing 175 cbm/h. The pump is running according to the needs, 12-14 hours a day. The pump provides 48 l/sec. There is only one pump in operation. We have two pumps 12 years old and one newer one. Everything is old. The water has to be lifted up to 15 meter. The problem started last year.

Suggestions of the farmers representatives and the officers:

1) Mr. Syakondo:

The farmers will take the responsibility for the system. If everything is running properly, the farmers will meet the costs.

2) Mr. Mutinta:

The farmers are very interested. But first the old project has to be consolidated.

What should be done:

- a) improvement of a canal to the pump
- b) 2 high pressure pipe-line-systems (it was originally intended to have two systems - 2 stationery engines, 2 pipelines, 1 standby -
- c) reconstruction of the main feeder channel.

We need a good system, which helps the farmers and which is simple to handle.

In 1978/79 the rice was very good, but that was because of rain. But poor years are a result of water shortage because of an unreliable system.

The existing system cannot be successful.

3) Mr. Fuchs:

The farmers have dug the canal to the pumping station deeper by themselves. They will pay out of their rice crop. By the end of 81 the farmers agreed to pay the running cost, but there was no rain.

4) Mr. Mbale:

A workshop is also needed as part of the project.

5) Mr. Banda:

The land use in average is below 17 %.

- 3 -
Comments of the Advisory Committee

1) Mr. Hill (Chairman)

Pressure piping is available
lining of the delivery canal is expensive
one major breakdown means the end of the crop, you cannot fill the storage.

One cannot run a diesel-engine 24 hours, but there is no way then pumping, therefore 2 engines are required.

Land Development Service with its big machines could dig the canal.
GRZ cannot support Siatwinda for ever, money comes from taxpayers.

There is probably a labour shortage in the rainy season.

Any new system must be feasible - moneywise -
and acceptable - socially.

Question: is a 12 inch pipe acceptable? It will cost more than three
6 inch pipes.

Suggestion: 2 more pumps

1 12 inch pipeline
canal between Lake and pumping station with a fence
in addition: Worldbank has mentioned electrification, same pipeline
borehole needs a water survey, is very expensive
wind should be investigated
we can only decide about the best technical solution and
make suggestions, but we have to keep the expenses in
mind, depreciation has to come in
but - there are situations when irrigation does not pay.

One should enquire what pumps are used in the mines. The pumps should
be slow running.

Seepage is not real a loss in irrigation, it keeps up the water table.
Saltproblem starts only with a high water table, it starts in a small
way. Constant monitoring is needed through soil surveys at Mt. Maku
or NIRS.

A workshop is urgently needed, but what about staffing?

2) Mr. Qasem

50 l/sec. for 22 ha is impossible.

2 pumps are needed.

At the moment brick lining is not possible, cheaper technology
required.

The reservoir should be used for night storage and a pump
The existing pipes are wrongly designed. A canal must be built
In any case, a canal to the pump is needed, with dam on both sides
A borehole is very expensive, big diameter well cheap.

Solar pumps are not ready yet.

The farmers should take responsibility for
the repayment capacity of the farmers? Right now the land is about
about 10 ha in the rainy season and 6 ha in the dry season.
We should get more money out of the land. Is the size of the
appropriate? In Chiabi more than one line is needed.

3) Mr. Bredt

When he left the project was still technically viable. There was
always a heavy loss of water, partly at the valves, some valves
were left (matter of education).

All technical things need maintenance. The farmers have to put some
money aside for replacement, because they cannot continue putting in
money for ever.

The farmers are capable, but the local authority for still more

then 2 years.

Dieselpumps are a high risk, unless one has a sophisticated workshop. Electricity would be better.

One should deepen the canal to the main pumping station. Vegetable are floating and get stuck in the canal because of the wind, so the farmers should clean it regularly.

Through a deep enough canal the water is much longer available and the land use is better.

The farmers must know the real costs including depreciation.

Observation: the clay-soil parts of Siatwinda (Mopane) developed a perched water table, rice did not do well.

The drainage system was neglected.

Response of Mr. Qasem: the water table may have gone up.

A drainage system with gates is needed.

Conclusions of the meeting:

- 1) To deepen the canal between the Lake and the main pumping station
- 2) To install 3 strong slow running pumps and 1 standby
- 3) To instal a 12 inch asbestos high pressure pipeline from the main pumping station to the reservoir
- 4) To instal new boxes for a direct distribution system
- 5) To repair the main feeder channel
- 6) To repair resp. instal a drainage system with gates.

Nkandabwe, July 13, 1983

K.W. Schaefer
Coordinator IRDP Gwembe Valley
as Secretary.

ANNUAL REPORT 1982/1983

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INTRODUCTION

Prior to the arrival of the Water Engineer, the Water Development Programme was carried successful by Mr. G. Madyenku (as the officer in-charge) although some problems were encountered here and there. The hand over is done and I am hoping that the same spirit will be maintained and shared in this respect.

The Water Engineer is not only to execute work in Water Development programme but also irrigation for all schemes. At present I am involved in Siatwiinda Extension. Let's hope this will form a base as a replica for other intended irrigation schemes in future.

For the new extension a main channel has been constructed to feed water to feeder channels which are constructed but not yet opened in the middle. Dyke and bush clearing have been successfully done by Land Development Services.

Apart from this many other things have been done for Siatwiinda Extension, and not forgetting a visit by the Provincial Agric. Officer and his entourage.

1.0 SIATWIINDA

Siatwiinda extension is a proposed extension area of 25 ha. to be irrigated by surface irrigation method (furrow irrigation and basin irrigation mainly for rice). The extension is planned in three phases. The first phase construction of main channel, second phase construction of feeder channels and lastly installation of pump set including pipeline.

Besides this a dyke has been constructed and reclaiming a portion of land of 12.5 hectares.

1.1 MAIN CHANNEL

- Levelling along the proposed main channel was carried out a profile prepared. The proposed levels were computed and distribution boxes sited.
- Filling of anti-till soil and construction of the main channel was commenced on 18th Oct. 82. Filling was completed in Dec. while lining of the channel is still in progress. The distribution boxes are constructed but not plastered yet.
- Two bridges are constructed on the channel and a drainage pipe.

1.2 C... M.C.R.

12...

1.2 CASUAL WORKERS

- Casual workers were employed in order to assist in the construction of main channel. To begin with 27 casual workers were employed in digging anti-hill soil but now 7 are still employed to execute the remaining work. The remaining have been mainly involved in dyke and feeder channel construction.

1.3 GWEMBE SOUTH : BUILDERS

- The Gwembe South Builders has a contract to line the channel. So far the base is already lined while the sides are to be completed soon. The delay in completion has been made by the contractor itself.

1.4 LAND DEVELOPMENT SERVICES

~~DD~~ - ~~66~~ tractors (cartepillar) arrived at the site on 9th Feb. 1983 for dyke building, bush clearing, erection of feeder channels and canal. The canal is not built due to non-arrival of motor scrapper with a reason that the ground was still soft or wet.

1.4.1 DYKE

- The dyke has been built in two parts. The first dyke on the side of existing irrigated area has reclaimed a portion of land of 6.8ha while the other part is 5.70ha.

1.4.2. BUSH CLEARING

- About 14.90 hectares has been cleared on the extension. This also includes some parts reclaimed by a dyke.

1.4.3 ACCESS ROAD

- An access road has been constructed between pump station 1 and 2 in order to allow movement of pump operators as well as vehicles during the time of flood or when it is dry.

1.4.4. FEEDER CHANNEL

- 4 feeder channels have been erected even though not opened in the middle.

2.0 WATER SUPPLY

At the moment not yet much has been done with water supply. The concentration has been based on individuals who have to contact us or apply for a well or borehole. The work done was a combined effort with my predecessor. So far a well has been dug at Mr.F.Syandabile of Sikalabula village. The total depth of the well is 10.4m with a water height of 1.5m. The material used for casing are thirteen (13) precast concrete rings. The owner provided half the cement where us provided half as well. The well contains clear fresh water.

At Mr. S.Sindaaza's home in Siabaswi a borehole is drilled to a total depth of 15m. The borehole is lined with pipes. The hand pump is to be installed.

3.0 MISCELLANEOUS

3.1 PROPOSED GAUGE STATION AT SIATWIINDA

It has been seen that there are no records showing the behaviour of the lake at Siatwiinda Irrigation Scheme. That is measurements of stage of the lake in terms of rise and fall. For this serious matter a proposal was put to establish a gauge station. So far a survey has been carried out to determine the zero point of the gauge. The deepest point within 150m distance from the present lake shore is chosen.

The workshop will help in making the vertical staff gauges to be used. From the survey carried out it is seen that the lake can rises between 2.8m and 4.0m normal seasons according to the marks left on the "big" tree standing in water near to the lake shore. Measurements taken from the ground level of the tree.

3.2 ORIENTATION TOUR

-A two day Water Development Programme tour was organised in order that we look at the previous work done by my predecessor. Sinazongwe and Senior Chief Mweemba's areas were visited. Most of the wells are dry due to the lowering of the water table. This maybe that the aquifers did not have enough recharge due to the spell of drought as well as that the wells are of shallow depth.

The boreholes were doing fine since most of them are still in operation except in case of faults on the pump.

3.3 VISIT BY THE PROVINCIAL AGRICULTURE OFFICER

-The visit of the P.A.O. culminated into construction of the dyke. The invitation was made so that the P.A.O. could check on spot the problems facing our irrigation schemes in connection with water shortage due to the spell of drought and putting up proposal which could alleviate this situation if it occurs again in future.

CONCLUSION

The main channel which was scheduled to be completed in January 1983 is still being lined by G.S.B. The delay has been sheer to the management. Let us hope such deeds should not be repeated in future if there are to scoop more contracts.

The dyke, bush clearing, feeder channel and levelling are successfully done. Except that some parts which needed levelling very much are still covered by farmers crops.

Compensation was the only solution if we had to level but finance is a constrain. Land Development Service team was not expected, during the time they came, so farmers were told to cultivate the fields. Were feeder channels had to pass the farmers were told that they will be compensated with little money at hand. This of course was reached after negotiations with the concerned farmers.

The present major problem of the drilling rig is that there are no tubes. So it cannot be brought to the workshop for service as well as moving it to other sites for drilling. A request was made to the workshop management and promised to provide the tubes.

In order to execute the work effectively transport system should be improved. ie by providing an extra vehicle instead of relying on one Land Rover.

Compiled and written by:

Samson Moale - G.S.D.P.

Gwembe South Development Project

ANNUAL REPORT ON GWEMBE SOUTH BUILDERS CO-OP SOCIETY LTD

1982

by Manfred Sitte and Wilson Ncite

1. Finances (M.Sitte)
2. Contracts (W.Ncite)
3. Organisation (M.Sitte)
4. Future (M.Sitte)

1. FINANCIAL MATTERS

GSB financial year (1.4.82 to 31.3.83) was a successful year indicated by the surplus which the Co-Op was able to produce, although there were few contracts only compared to former years. Simplified preliminary figures are as follows (showing changes in 82/83 only):

Income / Expenses

Income from revenues	K 64.000	
sales & other income	K 3.100	
sales of capital goods	K 1.800	K 69.000 = 100%
Expenses to wages	K 20.600	
building materials	K 19.900	
transport	K 7.600	
repayment of liabilities	K 7.200	
payment to debtors	K 1.100	
capital goods	K 1.000	K 57.400 = 83%
Surplus left over from activities in 1982/83	K 11.600	K 11.600 = 17%

Changes on Assets

Spent on assets: stock K7.700 (mainly cement and roofsheets), to debtors K1100 (mainly farm loans and advances to members), Capital goods K1000 (purchase of buildings) K 9.800

Spent on repayments of liabilities from the time before 1981 K 7.700 +)

Available in cashbox and bank account K 11.600 +)

+) If these old liabilities would not have to be paid, a left over surplus of K19200 would be available at 31.3.83 instead of K11600.

Changes on liabilities

Except repayment of old liabilities no new appeared K 0

From that surplus of 11.600 our lorry has to be repaired, building materials have to be purchased, income tax has to be paid,

wages have to be paid, our buildings have to be repaired. Nevertheless it was decided to provide a dividend to the members, which is a big progress compared to the poor years in the past and which may be able to give a fresh impetus to the members of the Co-Op.

The question may arise whether GSB are financially independent now. The answer is: no, because if the project (GSDP) would not have taken over the costs for the manager (K10000), for his car (K3000), for the supervisor (K4000), for transport capital goods (K10000) and building capital goods (K1000), additional K28000 would have to be spent. Under these conditions GSB would not have worked profitable.

2. CONTRACT MATTERS

GSB received contracts worth 62.000K (66700K in 81/82). Contracts were given by GRZ Depts. worth 30000K (44800K in 81/82). That means much less than last year. There was no chance to get worth mentioning contracts from kapenta fishing companies as expected last year.

Carry over contracts from 1981/82 are completed. These are school in Sinemalima for Dept. of Agric., dwelling house (3o2type) in Sinazeze for Health Dept., Maize mill in Sinankumbi for Sisters of Charity, dwelling house in Sinazeze (2o2type selfhelp project) for VSP, dwelling house in S/zongwe (Weekendhouse) for Brooks, dwelling house in B/malima for Mulders, church extension in Maamba for Sisters of Charity, Rural Health Centre in Sikaneka for VSP (selfhelp project).

New contracts in 1982 were carried on by GSB at the following places: Dwelling house in S/zongwe (3o2type) for PWD worth 15000K; this house could not be completed up to now due to lack of window and doorframes. So it is a carry over project to 1983. Dwelling house renovation (3V type) in S/zongwe for Dept. of Fisheries worth 15000K in 1982 + 14000K in 1983. This house will be completed in 1983. Renovation of Gossner Mission Hous in Lusaka worth 2000K. Extension of Irrigation in Siatwiinda for GSBP worth 30000K. A part of this contract will be done in 1982 and it will be continued in

1983. Dwelling house in Choma for Syatalimi: This project is almost roofed and is still on stand by because the owner has no money to pay up to the stage where it is now. After payment it will be continued except there will be a different agreement in future.

3.1 ORGANISATION MATTERS

Transport: Lucky enough GSB were offered a new two ton Pick Up for free use, which is expected in April 83. By this chance our main problem of daily multipurpose transport seems to be solved very soon, because our old two ton pick up had stopped working and will be sold in April 83, while the old non running one ton pick up was sold already. Income from these sales will be used to repair our 911 Benz 5.5 ton lorry. This lorry is growing old now and needs major repair worth estimated 15000K. It is the question whether it is worthwhile to invest such an amount into this car, but there is no chance to finance a new one.

Office and Bookkeeping: We were forced to dismiss our accountant in May 82. The big job of moneyhandling and accounting was left to the manager on top of his activities. As the storeman seemed to be very honest and motivated he was trained to take over moneyhandling, which is working allright now. It was also decited to send him to training courses to enable him to take over bookkeeping business. First course will start in April 83.

Management and Calculation: Calculation business is still on me because nobody was found to be involved responsibility on that item, and it will probably remain like that in near future. Monitoring and budgeting system is working now (quarterly reports), but all activities are still on me. In future I will involve the new accountant in this business bit by bit.

Membership matters: Although there were strong discussions among the members, the payment status of the members compared to nonmembers could not be changed. (Members and nonmembers are paid by hours), Members are still employees to their own company). As special service to members we continued to provide farming loans in order to encourage their farming business.

4. FUTURE OUTLOOK

As figures are showing, GSB may run their business independently, if circumstances will remain as they are. They will hardly be able to raise funds for manager's and supervisor's costs, for transport and building investment capital. That means the GSDP umbrella is still needed for the future.

There is always the discussion whether it is worthwhile to continue a project which does not work really profitable. But within a development project the question is different: Is there a chance, that activities are improving the situation of the area according to the defined strategy. In case of GSB: even if GSB themselves will not be really profitable and independent, they may cause development consequences, e.g. improving housing system, trade handicraft, accumulating capital in the region. Last not least GSB activities are one step to bring the Tonga society from traditional subsistence economy towards the required cash economy.

Since the GSB Co-Op is existing, nearly any building activity within the formal building sector of the region is handled by GSB. Big amounts of capital could be accumulated in the area instead of having gone to companies from far. Should this change in future?

Nkandabwe, 25.4.83

Annual Report 1982 by Monika Sitte

The first half of the year I was still exclusively working for VSP as a treasurer/manager. Since August I am only partly involved here as an advisor to the treasurer, while on the other hand I try to take some courses in basic mathematics.

1. VSP

In the first executive committee meeting in January I had officially announced that I was no longer prepared to continue my work within VSP as I did before. As I refused to stand for elections again the committee then decided to employ a capable man as a programme coordinator. Thus after a short time of advertising Mr. E. Syabbalo was elected out of twelve applicants and was employed since March.

Later in July the general annual meeting elected Mr. V. Syankondo as a treasurer who since then is keeping the books and controlling the money in close cooperation with the coordinator.

Before I finally handed over the job to my successors I prepared a detailed statement about all the programmes and accounts, explaining how they were handled in the past, which activities, demands, liabilities etc. were pending. I introduced the treasurer into the book-keeping system and I am still assisting and advising him.

Although Mr. Syankondo is a trained man it is still difficult for him to keep the books up to date as a part-time worker. Also from January 83 on Mr. Syankondo is supposed to be employed by CUSA. VSP should then employ a full-time accountant to keep the books. While the responsibility for the VSP funds could be with the coordinator controlled by the elected treasurer.

In the passed year some general problems became serious which made the running of the society difficult.

First there is no clearly defined status of responsibility for the coordinator on one side and the executive committee on the other side. One could frankly say that the coordinator was sometimes made a tool of the committee members. This is -as I see it- due to his own weakness and reluctance to use his powers as a manager and to take over responsibility. But the situation is also caused by the executive committee itself which is mainly composed of "big men" who are local authorities

and politicians. According to my observation there is hardly anybody who would dare to oppose these big men. And the big men themselves are too much used to their non-opposed authority. Thus even fair criticism sometimes became a problem.

Another problem is the sectionalism between the two chieftancies which was always existing but apparently became more serious. For me it sometimes looks like as if the VSP society is made the plaything of local policy.

As a result of all this one could observe a certain standstill and inactivity; the executive committee didn't work regularly since the last annual meeting. The committee members just didn't turn up; mostly no quorum was formed. Thus the practical work was delayed because the executive committee is the highest authority and decision taking body. So the well-being of the society is depending of the willingness of its committee members. A weak point here may be that the constitution doesn't contain any regulation concerning how the committee could be controlled by the members of the society.

Another weak point seems to be the enrolment into VSP. Here the right channel should strictly be followed. In relation to the above named sectionalism it appears that each party tries to bring in as many supporters as possible into the annual meeting. Paying a membership fee of 50 n only everybody just becomes a "one-day-member" for voting only. I never realized that those people shouting loudly in the annual meeting ever felt concerned about the functioning of the society afterwards. Here the regulations of the constitution must strictly be followed so that application for membership is made in time to enable the executive committee to decide on it in time.

Since the long lasting procedure of receiving a general trading licence (pending since 1980) was now finally successful the society is looking for its own premises. The Gossner Service Team offered repeatedly a number of buildings of the former Zeze Coop. But due to the failure of the committee a decision was never made and the final offer expired without any response by VSP. Just recently negotiations were taken up again.

Following some brief informations about the various programmes:

Loans The total amount of loans granted throughout the year was amounting K 2 966.- The total number of loans was 35, out of which 30 loans were amounting up to K 150.- and 5 loans amounting from K 200.- up to the maximum of K 500.-

- On the side of refunding of loans one can still observe that small credit holders are more likely to repay their loan than big credit holders. High amounts are mostly given to "big men". The total amount of loans repaid was K 1 161.- including interest. Additionally Gwembe South Builders Coop repaid K 1 552,80.

Blacksmithing A new man was employed since March who since then had produced 384 axes up to the end of December. The problem is marketing. On the one side VSP cannot produce enough axes to fulfill the request of big shops like TARRY; on the other side there are cheaper axes of the same type in the local shops at choma e.g. Thus only two axes were sold.

Brickmaking No more bricks were produced while the selling of bricks made in 81 went on. About 2000 bricks are still left for sale. The selling price is fair (10 n per brick); the problem is on transport from the kiln to the customers' place.

Sewing The programme of sewing school uniforms was not yet started due to the special licence which was not yet granted. The four sewing machines donated from Germany are kept in the VSP office.

Cycle spares Old stock was sold amounting the total sum of K 11.-

Commodities Mainly milkpowder (sales income K 1 156.-) and salt (sales income K 185.-) were sold. The selling of groundnut seeds and of kapenta fish was just started towards the end of the year.

Cement 100 pockets were purchased additionally to the carried forward stock of 81, while altogether 299 bags were sold.- GSB replaced resp., repaid old debts of 81. Thus the total income from cement was amounting almost K 3 800.-

Rice Due to the drought this year no rice could be bought from the farmers. Thus only the remaining rice of 81 was sold.- The shelling machine was stationed at Siatwinda irrigation scheme and sheltered; it is still under VSP.

Tonga crafts The total amount of about K 10 740.- was spent on purchasing crafts; about K 4 240.- were spent on salary and Km-allowance to Mr. M. Malyenkuku.- Additionally about K 2 500.- were spent on reprinting post cards. Thus the total expenses were amounting about K 17 480.-, while the total sales income was about K 11 640.- Meanwhile Mr. Malyenkuku just recently gave up his job; up to now no new arrangements were made.

Maize/Mealie Meal Due to the poor harvest the DES office called for a famine relief programme for the remote areas. Thus VSP was authorized to sell maize and mealie meal in Siameja area. Totally 400 bags of maize and 6 495 bags of mealie meal were brought to Siameja. The VSP lorry has been running 14 885 km for this programme only.

Second hand clothes The actual sales income from donated clothes was about K 15 500.- Out of this money selfhelp projects were assisted as follows: Sikaneka clinic K 7 770.-; Sinazeze staff house K 2 460.-

Sikaneka clinic The clinic building is roofed. Door and window frames could only partly be filled due to the lack of delivery by LUMC. No progress on the two staff houses and four pit latrines: local people have moulded bricks but which were not well burnt.

Sinazeze staff house The house was finally completed and handed over to the selfhelp project manager.

Sikaneka clinic The clinic building is roofed. Door and window frames could only partly be fitted due to the delayed delivery by LENCO. No progress on the two staff buildings and four pit latrines; local people have moulded clay bricks but which were not well burnt.

Sinazeze staff house The house was finally completed and handed over to the Health Department in May.

Transport The VSP lorry had run a total of 26 964 km in 82. It consumed 7 476 litres of diesel. Summarizing all the costs like insurance, road tax, diesel, service, repairs, and spare parts, and including wages and allowances for the driver and the lorry man the actual running costs were 47 n per km (depreciation not included). - The actual cash-income from hiring out the vehicle was amounting K 2 975.-

Seminars No funds were granted for seminars in 82.

Workshop The VSP workshop is still officially rented to Mr. Kwela, although since May he failed to pay the agreed rent of K 20.- per month. Obviously Mr. Kwela after a lot of negotiations is not willing to pay and he needs to be forced. Meanwhile he shifted his business from the VSP workshop to his private place near by; but still he keeps the keys...

Management Already in January Mr. Mische offered that the Gossner Mission at Berlin could take over the salary for a VSP coordinator for a certain period. (He actually proposed a system of declining payments within 3 years.) The only condition put by the mission is that VSP had officially to apply for this financial assistance in written. After a long delay this application was finally sent in January 83.

Dryland farming The money (almost K 6 000.-) still standing with VSP from the former GSDP Rural Works Savings Programme was finally paid to Mr. H. Fuchs for GSDP dryland farming programme.

2. Teaching

While working for VSP I very often experienced that many people lack a basic knowledge in mathematics. Adding more than two figures at one time or simple multiplication are already a problem. The more difficult it is to do a very simple profit-and-loss calculation for any small private business. So my idea was to run courses and make people more aquainted with dealing with figures.

The starting point was already made on a seminar for the women's sisal club at Siabaswi in April. The club members had just tried to make some additional money on baking buns. This business failed because it was not really planned; no expenses were recorded and in the end the sales income was less than the expenses before. Since that time I met Siabaswi women regularly every fortnight and later every week on wednesday. The attendance was quite good. The situation only changed in December when Ms. Ch. Mufwimpizi's employment was terminated. Since then this study

group seems to have come to an end.

At the beginning of September a first meeting was held at Siatwinda irrigation which was attended by 26 farmers (among these only 3 men). Due to the difference of previous knowledge (11 participants had schooling grade 6 or 7; 7 participants had grade 4, and 8 were without any schooling grade) it was agreed to have two groups who should meet one after the other every Monday.

In reality now the groups are mixed. Everybody interested comes at the same time and participates whether it is a lesson for those who have never been at school or for those advanced school leavers. I am always surprised how patient the people are. - After some starting problems the attendance now seems to be quite stable; there are always about 15 women of whom almost half got a schooling grade (4 to 7) and half no grade at all.

The state of knowledge with school leavers is much lower than I expected. The reason might be the lack of practice especially for the women since they left school. Thus most of the knowledge has slowly disappeared. After a certain time it is no longer just a refreshing of knowledge but people have really to learn again. It is due to this fact that I was teaching on basic rules (addition/subtraction, simple multiplication).

As the above named gap can never be filled in this way I shall try to introduce knowledge more by practice than by theory. I am planning to separate groups more strictly again and to encourage men also. The introduction into the handling of a scale and into calculation of prices is most urgent for those selling crops. I plan to buy some multiplication manuals which could be given at least to some participants. This might help them to calculate the right selling prices even without knowing enough about multiplication in general.

As sometimes there are language problems since the beginning Ms. M. Ngandu is assisting me interpreting and explaining in Chitonga. Being a community development worker this can be recognized as part of her job. Thus the programme didn't involve funds up to now.

ANNUAL REPORT 1982

W. Ncite

Community Development

I could only do very little on comm. Development because no transport for going around, and to communicate with development officer and villagers. Of course there were a few pockets of cement to share to the interested people in putting up modern houses in this area, only 10 pockets of cement were given to each centre also there were some problems because each officer in the project claimed for some pockets.

I feel there is need to encourage people to have permanent houses since the trees are almost finishing. The best could be to teach people how to mould clay bricks and to burn them but this needs transport to go round. This project should think twice on this otherwise the future generation will suffer there will be no more trees growing.

If necessary the best could be to assist the people with transport for delivery of their building material e.g. roofing sheets, cement, door frames and window frames, instead of giving free material.

On Selfhelp Projects

There is only one big project onselfhelp which is Sikaneka it will be rural health centre was started in 1980 already with donations and digging of foundations. The clinic building is about to be completed the delay was because of doors and window frames which took quite a long time to get them from Lenco. 2 staff houses are still on slab level since the end of 1981. The delay is because donations from villagers are not enough V.S.P. is financing the project in order not to stop completely it might disappoint people after spending what they had.

The local people are doing well labour work (general jobs) The G.S.B. are providing bricklayers and carpenters. The building engineer Mr. Mannfred Sitte is assisting in calculations drawings also Mrs. M.Sitte helped a lot in organising the people to make them understand how selfhelp project is run.

I am always trying my best to involve Chief Sinazongwe to talk to the people and give them advice to make them work and donate money to make the job go forward. There is no help from ward councillors. I have to invite them instead of inviting me and hear the difficulties I have with people. Sometimes when a councillor is asked to attend meetings he will say yes I will come after few minutes he forgets.

The village people like to co-operate if they can have people to help them to understand new way of development.

W.Ncite
BUILDING SUPERVISOR

Siatwiinda Irrigation Scheme,
P.O. Box 3,
SINAZEZE.

March, 1983

ANNUAL REPORT FOR 1982 - SIATWIINDA IRRIGATION.

Introduction

The year 1982 was a critical season. Adverse conditions prevailed so much that the farming community started panicking and did not know how they were going to survive. The Lake level went down; gradually water went down on number two station and this brought too much work trying to re-improve the channel and this did not prove successful. These were attributed by poor rainfall during 1981-82 seasons.

Scheme:- Siatwiinda Irrigation

Farmers involved:- 74

Plots in the scheme - 110

Hectarage: There are 32 ha in all.

- (a) 28 hectares including channels are used by the farmers and
- (b) Four (4) hectares used by the Research Branch.

Farming activities: The majority of the farmers showed interest as farming is concerned. The only problem was water, however the following were produced.

TOTAL CROP YIELDS AND SALES 1982 SEASON.

CROP	YIELD	SALES
Okra	30,000kg	24130kg
Tomato	3,900kg	1918kg
Beans	1 x 90kg back	1 X 90kg back
Rice	40x80kg bags	Nil
Wheat	1x50kg bag	Nil
Onion	520kg	321kg

Marketing:

At the beginning, marketeers from Lusaka were buying in large quantities. Also some came from Choma, Monze, Mazabuka and Kafue although these were buying on a small scale; however they helped the farmers to raise these figures on sales column.

The above crops were sold as follows:-

- (a) Okra 70n per kg
- (b) Tomato 50n per kg
- (c) Beans K1.00 per kg dried and 50n per kg green.
- (d) Onion 80n per kg

Rice and wheat- National price, but we did not sale as you can see on the sales column.

Pumps and Engines: Beginning of the year, started pumping by using engine No.1723H4A28 which was on the main station and later No. GRZ 112055 repaired at Nkandabwe and started working although this engine did not work for a long time and this forced the management to remove the engine from number two station and put on the frame with wheels. This was due to lower lake level of the Kariba Dam. In September, 1982 Engine No.1723H4A28 shifted to the third station following water. Later a 200 metre pipe line was dug from the second station and the engine was re-shifted. Since the distance of pumping increased, this resulted to poor output of the engine. Hence poor yields to all crops were experienced.

Diesel: During 1982 season, 3500 litres were bought and brought on 22/11/82.

Research Trials: Two crops were tried.

- (a) Groundnuts advanced variety trial with 12 varieties.
- (b) Preliminary Nation Sorghum yield trial -20 varieties.

These are done to the advantage of our farmers within the irrigation and also the Dryland farmers.

Rice: There was not enough water for this crop as a result 40x80kg bags were harvested and kept for consumption and some of it for seed.

Farmers participation: Farmers tried their best to work as a team; especially during shifting of the engine, channel clearing and during the shifting of a 200metre pipeline.

New Extension: The construction of the main channel started in September, 1982. Twenty-seven casual workers were employed and later the number dwindled according to the requirement of the Gwembe South Builders as the contractor. The casual workers are paid by EEC fund for the new extension. The new area is likely to cover 25 to 30 hectares when completed.

Staff position: Siatwiinda Irrigation is run by two officers and also there are two engine attendants. The table below shows the names and ranks of the staff Siatwiinda Irrigation.

NAME	RANKS
Mr. Hans Fuchs	Agriculturist GSDP
Mr. David Mutinta	Agricultural Advisor
Mr. Simon Sinkende	Engine Attendant
Mr. Charles S. Simogwali	Engine Attendant

Remarks: Mr. Charles S. Simogwali employed on 1st May, 1982 following the redundancy of Mr. D. Sianziba on 30th April, 1982.

Miscellaneous: The Land Development Services brought two D6D caterpillars and started working on 10th February, to 17th February, 1983.

Duties: (a) Two dykes embankments;
(b) ~~Erection~~ of four (4) feeder channels;
(c) Bush clearing;
(d) Land levelling;
(e) Improvement of access road between pump station 1 and 2;
(f) Ripping of the reclaimed land;

The work above took 239 hours with K9,660.00.

Conclusion: Working in an irrigation scheme is enjoyable and at the same time disappointing especially during the breakdown of the pumping unity. Farmers complain a lot and force to travel to Nkandabbwe to solve problems of mechanical faults. This drained off my pocket without kilometre claims especially the year 1982 was very critical as funds were concerned, mostly to Zambian staff. In an irrigation scheme:-

(a) Transport must be available;
(b) Kilometre claims must be given in case of private transport;

(signed)
D. Nutinta
Agricultural Advisor

Gwembe south Development Project
ANNUAL REPORT 1982 AGRICULTURAL EXTENSION
Hans-Peter Wendt

Introduction

1. Buleya Malima Irrigation Scheme
 Buleya Malima Orchard
 Buleya Malima Reconstruction Phase II
2. Nkandabbwe Irrigation Scheme
3. Small Scale Irrigation
4. " Draw -down" Cultivation

Introduction

Every Tonga remembers that 1981/82 the rainy season was very poor. The District Agricultural Show was cancelled because there was nothing to expose. Apparently the same occurs in the rainy season of 1982/3 which I think will be even worse. In general it was observed that the farmers were sowing seeds twice. Even the second crop often failed. Some managed to get sunflower seeds which were sown as a third trial from the middle of February 1983 up to now, 15th of March. Nearly everyone this year became more interested in millet. Farmers who were able to organize seeds planted it. So areas where usually maize was growing have been filled with millet. For the next years millet seeds will be plenty because more farmers are growing it all over Gwembe South while in the past only farmers in more remote areas cultivated millet. (multiplying+ distribution effect)

1. Buleya Malima Irrigation

The growing of vegetables was comparable with 1981. But after the first crop's harvest pumping had to be stopped because of the low lake level. The pump system seems to be okay now: all the three engines plus the two generators are in good condition.

Buleya Malima Orchard

The marketing of oranges and mandarines was easy. Grape-fruits still have no market except those which were sold to the liaison office in Lusaka.

The same spraying time-table like in 1981 was followed. Some of the young orange trees, planted at the end of 1980 were already carrying some fruits. At the end of the year three more casual workers were employed (total number: now: six (6) workers).

Buleya Malima Reconstruction Phase II

The area lays between the orchard and the reconstructed area of phase I. The total size is 10ha (40 plots of 1 lima). The work was started October 6th 1982 and completed January 31st 1983, under the day-to-day supervision of Mr. Mbewe (landuse and planning office in Choma). The channels - length 1100 metre were made from bricks - locally made by two farmers -. The outlets are of the same type like in Nkandabbwe Irrigation: raise of water-level in the channel allows water to enter the outlet. An average number of 30 farmers were employed during that work period. The estimated 18 000 K were overdrawn on K 9 000, so the total costs of the reconstruction came to K 27 000. The over-draft is due to two reasons:

- a) the pumping system has to be improved (two engines had to be reconditioned which came to K6 000)
- b) while I was sick with hepatitis - the general co-ordination was poor.

2. Nkandabbwe Irrigation

The handling of money, collecting water-fees, spending it on scheme maintainance and prefinancing of seeds is going on successfully. The allocated GRZ money was not needed and given to Siatwiinda scheme. Again sisal from Lusumpuko Womens' Club was planted along the irrigation fence. This method of fencing is the appropriated one for our area - barbed wire is too expensive and cutting of trees should be reduced wherever possible. The vegetables season was good. Less tomatoes were grown, replaced by beans. Only a few farmers managed to grow green maize towards the end of the year because of lack of water in the coal pit. Some nearly matured crops survived through additional pumped water - the running costs for this pumping were paid by the respective farmers.

3. Small Scale Irrigation

Because of lacking funds a follow-up of Simumpando and those dams like Kasaka dam could not be made.

4. Draw-down Cultivation

Discussions with Colson/Scudder turned me on to think more about possibilities of draw-down cultivation on the lake shores of Kariba. This method is not new to Tonga people but was used already before the Kariba dam in their Zilili-gardens. After studying literature of E. Colson, T. Scudder, a. Weinrich and the datas given below one finds that every 10 years a heavy 2-years-drought takes place and every 5 years one medium drought has to be expected. (The 1982/3 rainy season is the second year of the 10 years droughts). The lake level datas show that around June-July the water-level starts continuously dropping at least up to December. That gives the opportunity of growing crops by following the lake from June-July until beginning of December. The following months-September until December - are needed for the last planted crop to ripen before the flood comes.

I proposed to the staff meeting to introduce draw down cultivation methods in some chosen areas for trial. The staff agreed but could not give any funds for this season. Expenditures would arise from building up a proper fence to protect against cattle and hippos. Those fences have to be shifted every season because the gardens, depending on the water-level will be placed on different sites every year.

LL = Lake levels in metres

Flow = Discharge through Kariba Dam from turbine electricity
in cubic metres/second.

	72/73		73/74		74/75
	LL	Flow			
1 Oct	484.33	674	482.71	789	486.11
16 Oct	484.18	792	482.48	798	485.91
1 Nov	483.98	735	482.25	793	485.72
16 Nov	483.79	748	482.15	795	485.56
1 Dec	483.63	736	481.95	789	485.51
16 Dec	483.46	742	481.90	743	485.61
1 Jan	483.28	728	482.91	782	486.29
16 Jan	483.21	749	482.03	626	486.55
1 Feb	483.17	618	484.61	610	486.49
16 Feb	483.18	611	485.52	706	485.54
1 March	483.41	742	486.71	647	485.48
16 March	483.44	601	487.61	3837	484.94
1 April	483.43	620	487.60	3757	484.25
16 Apr.	483.50	734	487.59	3827	483.89
1 May	483.55	618	487.15	3784	483.81
16 May	483.70	625	486.70	4480	484.52
1 June	483.75	754	486.16	2836	485.01
16 June	483.76	670	486.43	569	485.32
1 July	483.70	606	486.62	548	485.49
16 July	483.57	775	486.67	687	485.59
1 Aug	483.40	770	486.61	696	485.55
16 Aug.	483.23	784	486.50	723	485.46
1 Sept	483.03	781	486.36	712	485.36
16 Sept	482.88	793	486.25	707	485.24

KariBa-2

1975/76			1976/77		1977/78		1978/79	
10 Oct	485.09	703	485.94	684	486.49	833	485.90	785
16 Oct	484.93	698	485.79	742	486.32	900	485.76	851
1 Nov	484.72	736	485.58	893	486.04	1000	485.50	891
16 Nov	484.56	671	485.44	894	485.81	920	485.45	906
1 Dec	484.45	699	485.29	783	485.66	946	485.29	869
16 Dec	484.37	721	485.14	783	485.62	926	485.65	832
1 Jan	484.30	681	485.08	797	485.77	760	485.89	779
16 Jan	484.48	693	485.00	827	486.73	973	485.89	861
1 Feb	484.60	587	484.97	837	487.19	5587	485.97	873
16 Feb	484.83	696	485.17	766	486.69	3938	486.04	1556
1 Mar	484.44	1234	485.51	800	487.09	5425	485.99	2375
16 Mar	485.33	1265	486.10	819	487.19	5485	486.10	2424
1 Apr	486.67	2150	486.81	767	487.38	5434	486.16	2360
16 Apr	487.43	6264	486.93	2384	487.51	5349	486.40	2367
1 May	487.44	3792	486.72	2370	487.80	5461	486.88	2437
16 May	487.58	3822	486.76	2353	487.86	5517	487.24	2481
1 Jun	487.71	3897	486.84	2362	487.79	3941	487.42	2504
16 Jun	487.52	3978	486.92	807	487.71	3970	487.31	2532
1 July	487.13	3910	487.14	859	487.37	3911	487.08	2416
16 July	486.60	3927	487.20	847	486.90	3951	486.72	2590
1 Aug	486.28	767	487.13	1000	486.25	3056	486.39	955
16 Aug	486.23	790	487.01	926	486.23	937	486.27	958
1 Sept	486.16	852	486.83	979	486.16	896	486.13	908
16 Sept	486.04	803	486.67	975	486.00	943	485.98	854

Minutes of the team-meeting in OCTOBER 1982

1. Opening by the chairlady Monika Sitte
2. Apologies: Hanne and Ingrid Fuchs on leave
3. ~~MINUTES OF THE TEAM-MEETING IN SEPTEMBER 1982~~

Kariba - 3

1979/80			1980/81		1981/82	
1 Oct	485.82	953	485.89	1076	485.97	1025
16 Oct	485.65	947	485.65	1031	485.70	1062
1 Nov	485.48	954	485.38	1009	485.45	909
16 Nov	485.27	914	485.14	873	485.22	1037
1 Dec	485.12	965	484.98	1022	485.07	991
16 Dec	485.64	815	484.96	971	484.83	1038
1 Jan	485.56	2309	484.86	838	484.66	854
16 Jan	485.04	3969	483.65	946	484.56	1018
1 Feb	484.54	2387	485.27	848	484.42	
16 Feb	484.62	987	486.62	844	484.36	
1 Mar.	485.16	1003	487.30	3949	484.34	
16 Mar.	485.95	926	487.19	4789	484.32	
1 Apr.	486.38	1023	487.01	2325		
16 Apr.	486.51	2317	487.10	2520		
1 May	486.54	2399	487.23	2399		
16 May	486.59	2545	487.38	2700		
1 June	486.62	946	487.39	2578		
16 June	486.79	965	487.26	2621		
1 July	486.87	1091	486.96	1107		
16 July	486.79	1064	486.93	1120		
1 Aug	486.64	1091	486.80	997		
16 Aug	486.49	1054	486.60	985		
1 Sept	486.28	1028	486.41	1145		
16 Sept	486.11	1669	486.18	1102		

ANNUAL REPORT 1982 FOR THE WORKSHOP
IN THE GAMBIA SOUTH DEVELOPMENT PROJECT
by Hans-Joachim Spreng

1. Introduction
2. Transport
3. Camp maintenance
4. Workshop
5. Appropriate Technology
6. Outlook Planning
7. Training
8. Summary

1. Introduction

In the past year 1982 we had again not enough money. The new idea of joining IRDP (Integrated Rural Development Project) did not develop, and on the top we had problems with recurrent vote which we had to use the first time in 1982. In fact we got only money out of the capital vote like it was already in the past. But it was not sufficient for the year so that the activities were reduced and five workers had to be laid off.

2. Transport

Leyland "white" GRZ No. 5870 D

This Leyland is out of road because of a damaged drivingshaft. The repair can be done as far as money is available, the same with the sparepart itself.

Benz 911 GRZ No. 817E

The front drivingshaft was assembled and the lorry was on the road, but it was not used because the project was not in the position to employ a driver. Still the steering of the Benz is rough.

Leyland "blue" GRZ No. A 37 V

The gearbox was again dismantled and the mistake was localised but the sparepart couldn't be found.

Land Rover GRZ 309 V

Over the year reconditioned the whole engine by fitting new piston/bearings/gaskets after getting the block rebored and the crankshaft reginded. The LandRover is on the road but the first gear is not working.

3. Camp maintenance

The major problem was the generator and the waterpump. Several times we were without water and electricity. A borrowed engine from a Farmers Training Centre was out of use after sometime.

The water shortage became worse when the drought had a peak in nov./dec.,

The watersupply in Kanchindu was also a problem.

In both cases the Gossner Mission felt responsible after the GRZ-funds were not available to supply the required equipment.

4. Workshop

As I mentioned already we had to lay off five workers. The remaining four are the minimum manpower for the GSDP workshop. One welder (grade 5), one mechanic (grade 6) who is driving also, one waterpump specialist (grade 9) and the storeman (welding grade 9). The work was done in a good way, especially when breakdowns took place. Still there was a big need for a driver but he could not be employed, because of lacking money.

5. Appropriate Technology

I had several contacts to the university and it's Technology Development an Advisory Unit. With their contacts we will get one man from Ghana who will follow up some of our developments. In fact not much progress was made, but one has to remember our turbine is still in use and is working very sufficient.

6. Planning

As soon as funds are available the workshop should do again training and the service to the irrigation. The transport should be improved. The service quality should be improved through better equipment and available spareparts. A system of maintenance the irrigation regulary is improtant.

7. Training

After five men had to be laid off the training was done with the remaining workers. They were sent regulary to the grade test in Livingstone. The foreman A.Chikopa is looking for a further training because he reached already grade 5 in welding. Funds for his training were already given to the Gossner Service Team.

8. Summary

The workshop section got K 4779.01 for spareparts, fuel, welding-gas and K 13566.16 for the salaries. In June five workers were laid off. Compared to the small money which the workshop got, the work was done great. one has to mention that the laying off people made a bad feeling to the local community. At all one could be satisfied with the work was done.

Gwembe South Development Project,
P.O. Box 3,
Sinazeze.

15th Feb, 1983

Annual Report on Village Water Supply for the year 1983.

During the year the programme did organise two wells in Nkandabbwe area of Chief Sinazongwe in Sikalabula village. These two wells were on selfhelp basis as usual. The programme section only helped by producing technical assistance and ten (10) pockets of cement to each well.

The drilling rig was used on one bore hole at Siabaswi in S/Chief Mweemba's area. Two handpumps were repaired in S/Chief Mweemba's area, thus Sulwegoonde and Syamatimba villages. The programme was sluggish due to lack of funds to help the participants. The drilling rig has also a problem of tubes which can't be found due to lack of funds in the project for this section.

During the year the project was blessed with an officer from the ministry of Agric. and Water Development whose main job is on water engineering (NRDC graduate) This officer is seconded to the Gwembe South Development Project. Therefore my duties on village water supply were handed over to him.

The programme is very much liked by the people and proves to be very useful. The new officer will try to work hand in hand with the District Council in water affairs in the area.

Reported by:-

(signed)
G.K. Madyenkuku
former/ Programme Officer - GSDF

Gwembo South Development Project

ANNUAL REPORT 1982 - FEMALE EXTENSION WORK

Eva Engelhardt

Introduction

This report on female extension work deals with the problems of organizing women, with successes and failures of teaching, with trials of co-operation, with the little steps forward and backwards in learning. For a technical interested person this report will be too long, because there are hardly any straight figures, indicators or clear balances. For him I summarize this report in short sentences:

1. the programme of the Lusumpuko Women's Sisal Club closed down (p 2)
2. the Irrigation Club at Buleya Malima continues to discuss a new organizational set-up (p 3)
3. two seminars on health and nutrition education were held at the FTC Malima (p 5)
4. women from Sinazese became active in the "Village Water Supply Programme" (p 6)
5. it is planned to look out for a Zambian successor for female extension work, who would be paid by Gossner Mission (p 7)

LUSUMPUHO WOMEN'S SISAL CLUB

The L.W.S.C. was the first programme which I started under female extension in October, 1980. The aims of this programme were:

- to use local available resources (sisal and water)
- to meet local needs (rope)
- to involve young women into programmes of GSDP
- to create an income-possibility for not-married girls

After an encouraging start (look at Annual report from 1980) members became less and less. Changes like paying the members small salaries and the efforts to recruit new members among the school leavers did not improve the situation. Still the programme was not stopped immediately because women showed interest in being taught about agriculture, health and how to calculate small business. Yet in the end of 1982 it had to be stated that the sisal programme itself was not continued by the club-members. In the following I enumerate some reasons which are probably responsible for the failing of the sisal programme:

- 1) there was no sound economic basis
Economically the rope production has to compete with sisal processing in Tanzania and Kenya which is highly mechanized. The sisal workers in Kenya are known to be the worst paid workers in the country.
In the LWSC besides rope-making itself the production was pure hand-work, which means that it takes much more time to produce 1 meter sisal rope at LWSC than in Kenya. From this one could draw 2 conclusions: either to fix a price referring to the real amount of labour-input, which will be of course higher than in Kenya. Or, to fix a low but competitive price which would undervalue the human labour. LWSC decided to fix a price which would cover their labour (1 hour work for 1 meter rope = 27ngwee) and bring some profit for them and the club (+13n= 40ngwee for 1 metre) They relied on the fact that in their local markets there will be no competition with Kenyana production.
- 2) But the rope-making-machine is limited to sizes between 6mm and 12mm. 6mm is too big for the fishermen and 12mm are too small for oxen. To use the rope for lime measurements is too expensive for farmers (25m=K 10) so the demand for the ropes was low.
Still the marketing was not the main problem but the production itself. Why after the promising start in 1980 did women stop to come?
- 3) the target-group were unmarried girls who one after the other married and moved away.
- 4) They did not see their individual benefit out of working with sisal. The promise, they might earn regular money could not be kept. The plan that they should pay themselves out of their own production, which means working in advance before money is seen, did not fulfill the high expectations.
- 5) It was a mistake in the set-up that from the beginning two women, after half a year one woman, was paid, because she knew how to handle the machine and should organize the club.

.....

As she did the same work more or less like the members they did not understand why she was paid why they themselves should work voluntarily.

6) Did the sisal-programme meet the girls' interests? For sure the most attractive point was the hope to earn money. The work itself on processing sisal is not attractive, especially not the scraping of the soaked leaves which stink worse than a pig's stable. Processing sisal is no fun but hard dirty work which cannot be compensated by the social aspect to meet each other and exchange gossip.

No wonder, that the girls kept on asking for material for sewing and knitting, which is a clean pleasant work where one can sit together and talk. This wish was partly fulfilled by Monika Sitte who started to teach the club since May 1982 in simple mathematics and how to calculate profit and loss in a business. On the side of education furthermore two seminars were held for LWSC: one in April under assistance of Mr. Mutinta about growing vegetables. Another seminar took place in September when women from Sinazese came for 2 days to teach about water hygiene and the promotion of wells.

Maybe that LWSC might still continue with education and needle work, but there is no motivation from their side to work again with sisal. That is why a committee of the GSDP staff, including Mr. Mutinta, Mr. Malyenkuku, M. Sitte and E. Engelhardt, decided to stop with this sisal programme and release the paid lady, Christina Mufwimpizi, who has worked with GSDP since October 1980. The rope-making machine will be still standing at Sisawi Centre and Mary Ngandu (community development officer) will get permission to use it for her clubs. Christina Mufwimpizi promised to teach her the technique of that machine.

MALIMA IRRIGATION CLUB

As foreseen the club suffered from missing leadership after Mrs. Duncan (chairlady) and Mr. Duncan (agricultural advisor) were transferred. When also Mr. Malala left there was no close supervision any more. Like all plot-holders the club complained about missing water due to the broken pumps, the first harvest in 1982 of rice and Irish potatoes dried up.

When I told Colson/Scudder about this trial to involve women into agricultural production and education they agreed to the aim but were sceptical about the club structure. They doubted whether the set-up as a collective group who works on a general field would be successful. Why not give small shares to single women who have to take full responsibility for them? I also had come to the opinion that the traditional set-up of women's clubs does not fit at all for productive and money oriented activities. Especially in agricultural production where continuous and reliable work is fundamental the unclear definition of a collective task disturbs the functioning. And unlike a dress which one is sewing, a field does not indicate the individual effort and its quality.

/3...

Reasons, why the traditional set-up of women's clubs does not fit for agricultural production:

- a) there is no clear definition of individual tasks and benefits in the Tonga society the women's share in field work is a part of her female duties. There is no discussion about it who has to perform a clear-cut task whether she is enthusiastic about it or not. She is educated to obey orders from parents or her husband, but would hesitate to do voluntary work on top, especially if it does not show clear benefits.
- b) the idea of a collective improvement is unusual and too far away for a single woman's motivation. The thinking "I work for the club and the club helps me" sounds like an invitation to voluntary work in comparison to the daily duties. As there is no authority behind it, turns out to be "nobody can control what I am doing" and "nobody has the right to criticize me"
- c) there is no control from above and no feeling of individual responsibility concerning club-duties in this club-set-up all responsibilities are simply delegated to the elected board: those have to work hard, call in the other members.... But even when the board performs those tasks it is not really appreciated and respected by the members.
- d) there is no guarantee for justice, that busy members will be honoured while members will be blamed. no woman criticizes another woman in public as she fears aggression. Still the members want an authority and several times asked me to execute some punishment. According to club rules the board should point out bad members which of course they do not dare to do, because already now members seem to oppose their board.
- e) there is a gap between the elected board and the members on the one side all jobs are delegated to the board, on the other side the same board, especially the treasurer is not trusted. Easily suspicions arise that the treasurer has taken money for herself- even if there is no proof at all- or that the whole board gets extra-allowances from the side. Because why should one work for nothing. They are not trusted as representatives of a mutual interest.
- f) the club wants and needs strong leaders and at the same time refuses them and constructs intrigues wherever possible. The board hesitates to use their executive power because they fear conflicts and troubles in their daily relationships.

When Yvonne Makonka, the District Home Economics Officer from Gwemba came to work with me for three (3) months we started this discussion again to find practicable alternatives for this club-set-up. This was the first alternative which we presented to the club in October, 1982:

under responsibility of the

WHOLE CLUB

- decide what to grow
- buy what to grow
(seed fertilizer)
- organize and pay ploughing
- pay the waterfees

under responsibility of

INDIVIDUAL WOMEN

- cultivate and weed individual shares
- do on the plot for watering
- selling of her produce
- give a certain amount of money (rent) to cover all inputs to the club.

It took us several internal discussions to calculate realistic figures how much "rent" could be expected if a woman cultivates a certain piece of land. E.g. if the club grew 1 line maize and the women got individual lines would they be prepared to pay K 7 per line? Each line could produce between 120 and 150 cobs of maize which can be sold at 15n each. Any money above those K 7 should be her private profit.

This proposal was explained and discussed in ci'tonga at length within the club, but still refused. No-one wanted to carry individually the financial risk not to cover the rent-costs. "How can you calculate with maize plants which are not even 30cm high?" Even after several repetitions of the calculation - very well done by Ms. Mukonka - the money-side of the the set-up seemed to be too risky for the women.

So a less individualistic version was developed: each woman should look after certain lines which would later indicate whether she was lazy or busy. "Women like competition" Ms. Mukonka said. Like before the harvest should be sold by the board and the money be kept and paid by the treasurer. My private idea was, to set up formal rules, which could be used for a control independent from the single board members. Even when this version was not rejected openly, but accepted, it never was introduced. Obviously here are fears to insult single members and to be approached by the Farmers' Committee if lazy members did not work properly on the plot.

So all long talkings did not yet turn in a new better practicable concept. But of course the discussion will go on, hopefully with the help of a Tonga-speaking lady as interested and helpful as Yvonne Mukonka is.

HEALTH AND NUTRITION EDUCATION

In 1982 two seminars - one week each - for clarified daily employees, of the Rural Health Centres, community development officers and club leaders were held at the FTC Malima. During the first seminar in March the women were trained in ante-natal care by Mrs. Mwansa from Sinazongwe. The aim was to enable them to examine pregnancies whether they develop 'normal' or whether the mother should be send for examination and delivery to the hospital. A list with missing equipment for ante-natal care in the RHC (like blood pressure machine and scales) was sent to Sinazongwe and to Gossner Mission.

The second seminar in November for the same target group was held together with Ms. Mukonka and a young German nutritionist Karin Micheelis. It dealt with nutrition, mainly the use of wild vegetables.

Not only me but also the participants were impressed by Ms. Mukonka's teaching, which was filled with enthusiasm - finally she had an audience for what she learnt for 3 years at NRDC - and very convincing. One should also not forget the social meaning of such a rare situation that an educated Zambian town lady sits in the middle 'of the bush' and teaches women from the rural areas. Both seminars had to be sponsored out of donations from Gossner Mission.

As far as I can judge, the 3 seminars which were held up to now, succeeded to promote the spreading of health education. Participants like to come, exchange experiences from their work and being trained. Whereas they were encouraged again and again to see themselves as teachers who should address later their patients and club members. The RHCs at least seem to have implemented the idea of regular health education and I see them as good starting points for activities concerning, women, children and family life.

VILLAGE WATER SUPPLY

How can one teach hygiene if people do not have clean water for drinking? The 'Village Water Supply Programme' has been started already by Uli Shlottmann in 1974. As a water engineer he sank boreholes and developed a simple hand-pump. After he took over GSB, Gray Madyonimba was in charge of the programme.

As the rainy season 1981/2 was such a disaster the need of clean water and wells became very urgent again and the women's group in Sinazense decided to become active. Those 8 ladies were trained to be the 'hard core' of teachers, who know

- the different steps of digging a well
- how to organize it on a self-help basis
- how to approach the District Council
- and of course: why clean water is basically important for health.

They went around to women's clubs, FTC courses, RHCs and some village meetings to talk about the need of clean water. (which was 'running into open doors')

We learnt that in Chief Mweemba's area there are still 120 wells from the time of resettlement which are mostly unused because they are dirty, were abandoned or are feared to be poisoned.

Here the District Council people were active with cleaning but often lacked transport for material and people, or failed because they had no proper pump to get out the dirty water. The improvement of the water supply has two sides:

- a) the technical side of digging and casing a new well or of cleaning and old one. This is in responsibility of the District Council or as the GSDP is now in the good position to have engineer, it is one of the duties of Mr. Mbale.

b) also important is the education of the well-users, the women. E.g. why they should collect their water from a well, even when the stream was nearer. Why the water from a well is always cleaner than the water from the river etc. Women can be addressed through the clinics and bring the topic into their places. If the villages and the headmen are really interested meetings will be held and actions can be planned. It is also important to teach the villagers later on to keep the well clean and to prevent anyone from throwing certain items into it. Considering the big number of abandoned wells in Mwemba's area one can say that the mistake in those days was exactly that the villagers were not informed properly how to handle that new construction. As the rainy season 1982/3 is very poor again the water campaign will continue, if the problem of missing funds can be solved. GEDP promises every village, that if they dig down to the water-level they will receive half of the cement which is needed for casing free from the project. As there is no money to implement until now, this promise cannot be kept.

FINAL REMARKS

The reader of this report will not have missed my enthusiasm about the co-operation with Ms. Mukonka. Indeed this experience was very important for me and adjusted some of my opinions.

After struggling myself for 3 years to motivate women in clubs to co-operate and work for voluntary purposes etc., I saw how different it looks like if a Zambian woman talks about the same items in citonga. Most important: she is a member of this society, though she is urbanized she knows the backgrounds, how to behave with certain people, with old ladies and so on. She knows the taboos and which subjects have to be approached very cautiously, where you can expect an answer or which question just cannot be asked straight forward. She could

be an example for the other women - even when she is from town and highly educated - because she is a Zambian and she found herself a way into modern life. After looking at Yvonne's dresses suspiciously the women were very eager to talk and to listen to her, to find out how she lives and how such a young lady sees and handles problems. As she speaks citonga as a vernacular she understands all the 'undertones; the secret subjects, which are hardly mentioned. How clumsy my own behavior and teaching are in comparison! The longer I went along with S. Mukonka the more I was convinced that a successor like her would be the right person in my position and might be more successful in her work, because she has immediate feedback and can evaluate her approaches faster and more realistic.

Maybe that she could still learn from me how to develop ideas work out and adjust concepts, get used to the unpleasant ambiguity that every solution carries some mistakes and that a success does not last forever but has to be gained again and again. Gessner Mission agreed to employ a Zambian successor, of a willing qualified lady can be found and if GRZ agrees.

As the staff already applied for a female extension officer in 1981 I see no problems from the side of the government.

The bigger problem will be to find such a high educated women who is really motivated to stay and work in Sinazeze even when she knows that she can leave the place after 3 years. I hope to find a willing lady among the NRDC students - section: nutrition - who leave NRDC in July 1983. Then we would have still some time to work together before she finally takes over.

QUARTERLY REPORT OF THE WORK WITH COOPERATIVES IN THE SOUTHERN
CHIEFS VALLEY FOR JANUARY/FEBRUARY/MARCH 1983

(For CUSA and the NHCO only: Financial Reports have been submitted to your offices as follows:

Syatwiinda CU: up to March 1983

Nkandabbwe CU: up to March 1983

Sinazeze CU: up to March 1983

Maamba CU: still in preparation (up to March 1983)

Malima CU: up to March 1983

Euleya CU: up to March 1983

Thuuka CU: up to November 1982 (others not yet done)

1. Syatwiinda Selfhelp Savings and Credit Union

The membership has increased to 210 now. The sharecapital remains at about 10 000 K due to the drought and the need for cash to buy food.

I audited the books of accounts and after some booking corrections the books are correct now.

The Board of Directors meetings did not take place due to poor attendance in these three months.

The loans committee has contacted the members with delinquent loans again. Those who are employed by an organisation filled in the stop order forms for loans so that the situation especially on some very old loans will improve now.

A Form III school leaver is assisting the treasurer in his job. We want to make sure that in case of absence of the treasurer somebody else is able to write the books of accounts. This providence has proved good already as the treasurer got ill for some time. His representative was able to take over without big difficulties.

2. Nkandabbwe Credit Union -study group

As the arranged meetings had to be dropped again due to lack of attendance I prepared a letter giving a final date for a meeting(see the attached copy).

I still have to fight against the idea of making business in this CU as some members always come up with this idea in order to attract more members.

3. Sinazeze Credit Union -study group

On one of the meetings with Sinazeze CU some members of Nkandabbwe CU were present. After some quarreling both CUs decided to stay as separate societies.

The meeting with Chief Sinazongwe and the ward chairman had to be dropped because of illness of the chief.

I audited the books and found them in order.

Now we are preparing for the elections of the Board and the opening of a bank account.

4. Malima Savings Society -study group

Both meetings for the recruitment of new members had to be cancelled due to the visit of the General Secretary and the illness of the chief.

I wanted to audit the books. As there are no changes the books are still alright.

Malima CU is also preparing for the opening of a bank account.

5. Buleya Savings and Credit Union -study group-

The meeting with the chief and the ward chairman will have to be cancelled for Buleya CU as well.

After some corrections the books of accounts are correct now. Buleya CU also thinks that membership will increase soon when it has an account with the bank where the money gets some interest. The total money is about 194 K of which 177 K are shares. The membership is at 33 members.

6. Muuka Savings and Credit Union -study group-

After the meeting in December we arranged that Muuka CU should give note after they had a Board of Directors meeting so that I go there and we discuss the problems together. Up to now I did not hear anything from them.

7. Maamba Collieries Savings and Credit Union

Maamba Credit Union was registered on 20.1.1983 under No. 1784. Now we are preparing for the 1. Annual General Meeting. The writing and the auditing of the books is still going on.

Here we have to think of how to solve the problem of the treasurer's big job, especially as up to the end of 1983 the membership is expected to be at 600. The treasurer is still working voluntarily. The management of Maamba Collieries Ltd. gave the Saturdays as days free for CU work. But these days are filled up with the attendance to members.

Due to wrong information Maamba CU also thought of starting business with the share capital.

As some of the mine workers are living within Svatwiinda CU's area we had already the problem of double membership and double loan application. The member was referred to Maamba CU as that one is on the safe side concerning loan repayment.

Maamba CU is suffering heavily from the lack of passbooks. Members are not willing to join if they do not get any record of their money with the society. Through this report I would like to ask the responsible officers again to try to get the passbooks printed as soon as possible otherwise also the other CUs are going to suffer soon.

8. Maaze Consumers' Cooperative -study group-

On several meetings the contracts of the manager and the salesman were discussed. They are now ready for confirmation.

It was decided that the manager should be the driver of the MCC's car for the time being.

The manager gets support in his job from a Form V school leaver who is interested in such work. I am looking for a course for further training on cooperative management for this young man.

Since September 1982 8 loads of mealie-meal have been sold each one of about 250 bags (25 kg). I've got some problems with other shop keepers as the price of the MCC was lower than theirs. To avoid such difficulties in future it was agreed that the MCC follows the price of other shops at least with bags of mealie-meal.

9. Miscellaneous

I got 350 K from the V.P. Society for two seminars. I have been and I am still busy with auditing so that I was not able to run these seminars. At the moment it even looks like I shall get money for my work from the Government which I would like to spend for seminars also.

GSDP-DRYLAND FARMING PROGRAMME

Mweemba Area

Time-Table for May and June 1983

date	time	place	subject
6.5.	8.00	Kanyemba, Siabaswi, Sinakoba, Sulwegonde, Sinakumbi, Sinakodobbo, Mweela, Mucekwa	Information to headmen and teachers about the Dryland Farming Programme-time-table
9.5.	8.30	Mucekwa	Interploughing, Crop rotation
11.5.	8.30	Mweela	" "
13.5.	8.30	Sinakodobbo	" "
16.5.	8.30	Sinakoba	" "
18.5.	8.30	Sulwegonde	" "
20.5.	8.00	Sinakumbi	" "
23.5.	9.00	Siabaswi	" "
27.5.	9.00	Kanyemba	" "
6.6.	6.00	Kafwambila, Siampondo, Nyanzovu, Syawaza, Nyanga, Dengeza, Muuka, Mweemba	Information to ward-chairman, headmen, teachers about the Dryland Farming Programme-time-table
10.6.	9.00	Mweemba	Winter Ploughing, Crop Rotation
13.6.	8.30	Muuka	" " " "
15.6.	8.00	Dengeza	" " " "
17.6.	8.00	Nyanga	" " " "
21.6.	7.00	Syawaza	+
22.6.		Nyanzovu	+
23.6.		Siampondo	+
24.6.		Kafwambila	+

Please let me know one week in advance if you want to join, except + (= not possible!).

Kanchindu, 23.4.1983

Hans Fuchs, GEDP officer i/c Dryland Farming

cc: Sen. Chief Mweemba, Kanchindu
 ADAO Sinazongwe, Sinazeze
 GSDP Co-ordinator and Staff, Mkandabbwe
 SAA Mr. L. Numbula, Kanchindu
 AA Mr. D. Mutinta, Syatwiinda
 CD Mr. Munsaka, Sulwegonde
 CD Mr. Skachibovu, Muamba

van Uliet

HOW THE METHODIST CHURCH STARTED IN THE GWEMBE VALLEY

1. INTRODUCTION

As early as the 16th century the Portuguese settled on the East and West Coasts of Africa, i.e., in Angola and Mozambique. They claimed the land between Angola and Mozambique as their field of trading in gold, ivory and slaves. They had trading posts on the Zambezi, such as Sena, Tete and Feira. They went in Mashonaland, in King Monomatapa's land for gold and slaves and in the Gwembe Valley for ivory and slaves. Most slaves were sold to them by chiefs and hunters who obtained cloth, beads, guns, etc., from them in exchange. This was an evil, but it was profitable trade. Slaves were sent to America, Portugal and Spain to work on Plantations, in Mines and Houses.

As one of their aims was to convert people to Christianity, the Portuguese also sent out missionaries to Mashonaland in Zimbabwe and to the Gwembe Valley, but without success. There were several reasons for this:-

1. That the Portuguese were interested in gold, ivory and slaves from the Gwembe Valley and Mashonaland and in preventing their trade with the East; gold was mainly obtained from Manyika area in Zimbabwe and ivory and slaves were mostly obtained from the Zambezi Valley in Zambia.
2. They were few to cover the vast area which they had claimed between Angola and Mozambique, and as well as Mashona, Manyika and Rozwi areas in Zimbabwe. Portugal was too poor at the time and had not enough men to cover the land it had claimed.
3. They were often prevented by the Bantu to extend their activities into the interior of Mashonaland and the Gwembe Valley.
4. Most of them died of Malaria fever; some of them were killed by wild beasts, such as Lions.
5. They could not use their boats on the Zambezi because of Rapids, Gorges and Falls, such as Kayaba and Nameson Rapids, Kariba Gorge and Victoria Falls.
6. In the era of ruthless imperialism between 1890 and 1895 they were too weak and backward to enforce their claim for land.

So after the Portuguese had left the Valley and Mashonaland (Manyika, Rozwi and Shona areas), Christianity died out there, for the Portuguese confirmed themselves in Angola and Mozambique. Then Christianity came back to Zambia, it came from the south, after David Livingstone three great journeys i.e., 1852-56; 1858-63 and 1866-73. In 1860 he bought a canoe from Sinamani of Syampondo area for use on the Zambezi river, and thus, the valley Tonga called him "Simutobelazyalwizi", someone who follows the course of the river; some called him "Munali", someone who walks quickly. In Zambia as a whole he is important as an explorer who helped to create World Wide interest in Central Africa (Zimbabwe, Zambia and Malawi) and in this way contributed to the abolition of slavery and in a smaller way to the growth of normal trade in its place. He opened up the way for various traders, Governments and Christian Missionaries into Central Africa.

2. CHRISTIAN MISSIONARIES

Before coming to Zambia, various Christian Missionaries began working among the Bantu in Basutoland in South Africa at the beginning of the 19th century. Livingstone own Missionary Society, was the first to send out Missionaries to Barotse in 1859, but without success. This was followed by Paris Evangelical Mission that sent out Francois Coillard who established the first successful Mission station at Lealui, in Baroseland, in 1885. He was followed in suit by the Methodist Missionaries, also from Baroseland, who established first Methodist Mission stations in Zambia, i.e., in the Gwembe Valley and in Namwala District among the Valley Tonga and Tonga Ila.

3. FIRST METHODIST MISSIONARIES IN ZAMBIA

The first important, devoted Methodist Christian Missionaries who brought Christianity to the Tonga people in Zambia in the 19th century were: Chapman (Micabaani in Ila), Pickering, Budwin and Buckingham, Walter Hogg, John Robert Fell, Buckery and Jerald. The first four are connected with Methodist Church work among the Tonga Ila in Namwala and Nambala District and the Ila four are connected with methodist church work among the Gwembe Valley Tonga in Gwembe District. They all first worked in Basutoland in South Africa where they had established a Mission station in the 18th century. They can not be described separately, for they are one in their churchwork in Zambia, but I will give a short accounting

of their church activities among the Tonga Ilia and the Gwembe Valley.

It was along, slow, dangerous and expensive journey from Basutoland to Nkala, in Namwala District or to Sicooba in the Gwembe Valley, for there was no railway line from Bulawayo to Wankie, it reached Wankie in 1903 and crossed the Zambezi at Victoria Falls in 1904; a distance from one village to another was completed by footing in those former days. So, Reverands Chapman, Pickering and Walter Hogg with our faithful Evangelists Basuto teachers and determinant Basuto carriers set up their journey from Basutoland, in April 1898 for Zambia, partly by train and partly by foot, following Father Coillard's foot steps and reached Wankie Wearly. At Wankie rouped themselves into two teams and travelled in two directions, i.e., from Wankie to Nkala in Namwala District and from Wankie to Sicooba in the Gwembe Valley. Reverand Chapman and Pickering and two Evangelists Basuto teachers and three Basuto carriers continued their journey from Wankie to Lealui Evangelical Mission station where they spent four days with father Coillard of Paris Evangelical Society who assisted them to obtain full information about the way from Barosteland to Nkala (now Kafue National Park), Nanzila area, Namwala District. Footing and resting on the way from Barosteland, they reached Nkala in 1900 and established the first Methodist Mission station called "Nkala Mission" (now Nanzila Mission). Later on, they were followed by Reverend Budwin and Buckingham and some Evangelist Basuto teachers who helped them to extend church activities among the Tonga Ilia in Namwala and Mumbwa Districts. Reverend Chapman opened up Namantombwa Mission station in Mumbwa District and Reverend Budwin opened up Kasenga Missionstation Namwala District.

4. REVEREND WALTER HOGG IN THE GWEMBE VALLEY: 1901-1905

Now, Reverand Hogg and two Basuto Evangelist teachers named Buzo and Masunyane and three Basuto carriers were delayed to reach Sicooba, in the Gwembe Valley, in time by Lions and Elephants on their way. They had to wait for the British South African Company and Police to lead them all along from Wankie to Sicooba across the Zambezi River, Zambia. They were advised to establish their Mission station close to the Boma for protection. By faith and determination, Reverend Hogg, the primitive Methodist devoted Missionary and his Basuto companions reached Sacooba safely in 1901. He estbalished the first Methodist Christian Church and School at Sicooba in Chief Syampondo area (now Sikatongo) in the Gwembe Valley.

Some of his duties during the early days of his missionary activities are:-

1. Visits to villages and studying citong language, customs, agriculture, etc.,
2. Building living church and school shelters;
3. Enrolling school boys for classes; girls were forbidden to attend church services and school lessons by parents.
4. Writing Primary School text books for use in school;
5. Preaching on Sundays in the villages.

He had some problems in learning citonga language because there was no single mutonga who could speak English, but by using the language of action he quickly grasped the citonga sound. Also his Basuto Evangelist teachers assisted him in learning the citonga language. Some of his problems in his missionary work in the Gwembe Valley include the following.

1. Polygamy.
2. Witchcraft-charms killed people;
3. Frequent famine-mostly caused by drought, animals, birds and insect pests, such as Plant-suckers (Bacimvinya).
4. Lack of transport- the only reliable transport at the time was means of human carriers;
5. Strange foods-Reverend Hogg depended on nsima of Nzembwe and Maedelele and goat's meat; there was no tea or sugar, except light sweet beer (ciyaaya or cibwantu) - just enough for a small army.
6. Tonga unnecessary customs, such as that of burrying twins, alive in big clay-pots at the cemetery called "Katombe", unclean grave yard.

Unfortunately, Reverend Hogg did not complete his plan on Methodist Missionary work in the Gwembe Valley. He suddenly died on 6th February, 1905. He was buried at Sicooba by his Basuto companions and Sicooba Boma Officials, ~~including~~ including the District Commissioner, Mr. Williamson. His grave is under the Lake Kariba Water among the graves of the deceased Gwembe Valley Tonga. This disappointed his Gwembe Valley fellow Tonga. They mourned him sadly for one month. This is because he prepared them to meet the new dangers that were coming ahead from White traders and settlers. He was replaced by Reverend Stone who became unhealthy and returned to South Africa in 1906.

Also in this year, the District Commissioner, Mr. Williamson past away and was burried close to Rev. Hogg's grave; their sign posts were both removed before the arrival of Lake Kariba Water in 1957. The whole situation at Sicooba became very unfavourable for white people to live in. So, in 1907, when Rev. John Robert Fell came in the Gwembe Valley to resume Methodist Missionary work, he immediately removed the Mission station to Loongo, downriver from Sicooba in Bung'ombeland within Chief Syampondo's area where he himself did not stay for a long time and instead he left Mr. Buze there to be in-charge of Loongo School. He and his other companiens continued the trip downriver and established a mission station called "Kanchindu Mission" at the mouth of Kachindu river (small river) in Mudodoli's land, ten kilometres away downriver from a German by nationality, Mudodoli village to Chief Mujuku Mweemba's village, where Father Antion (Syamwami, Chief Peacemaker) of Jesuit Mission was unable to establish a Mission station in _____. He was found dead in the morning by his servant in his shelter. He was burried under a "Musanta" tree by his servant and Chief Ciysala Mweemba's Elderly people. When his fellow Missionaries came after a month of his death, they fixed a cross on his grave. This iron cross was removed by some missionaries from Fumbo Jesuit Mission before Lake Kariba covered the Gwembe Valley Tonga original homeland. Therefore, there was a chance for Rev. Fell to begin and extend the Methodist Missionary activities in the area concerned. Also the District Commisioner, Mr. Cook, who was replaced in Mr. Williamson's position in 1908, removed Sicooba Boma from Sicooba to Ibbwemunyama, south of Pilgrim Holiness Mission, Chikankata.

So, besides carrying on Missionary work at Kanchindu Mission, Rev. Fell immediately took over the responsibility of:-

1. Writing 'FIRST Tonga Primary Book' (HALAAWA) and 'SECOND Tonga Reader' called 'THE CAT' (MANGOWE).
2. Writing of 'TCNGA READERS' such as 'PLANT LIFES (BUUMI EWAMISAMU) 'THE POTTER' (SYABUMBA), etc.
3. Writing of 'TONGA GRAMMAR, and 'TONGA DICTIONERY.'
4. Collecting and Writing of TONGA STORIES (NGANO ZYABATONGA), etc
5. Translation of parts of the BIBLE, i.e. 'Matalikilo: (Genesis) 'Matayo' (St Mathew's Gospel), 'Maleka' (St. Mark's Gospel), 'Psalm's -(Ntembuuzyo), etc.
6. Translation of christian Hymn-book from English language into Citonga and also adding some Tonga ritual songs to it.
7. Training of Vernacular Evangelist Teachers(TVETS) mainly those School w boys who were enrolled by Rev.Hogg at Sicooba

abandoned school and continued their lessons with Rev. Fell at Kanchindu Mission. These include Issiah Mutengwana, Samson Syacinkononga and Petrol (Peter) Syakacite.

Vernacular Evangelist Teachers were trained as Evangelist Teachers after completing Standard II (grade vi). Some of them were trained as bricklayers, thatchers, carpenters, farmers and blacksmiths. Girls were excluded in all this field of education and church work. They were forbidden by their parents to step in the classroom or to kneel down in the church. Luck enough, vernacular Evangelist Teachers who married illiterate girls assisted the Missionaries to bring women into the school and the church. Vernacular Evangelist Teachers' were sent out to village schools, such as Mweemba, Sinakumbi, Siameja, Muuka, Sinang'ombe (Loongo), Syampondo and Syatwiinda.

Between 1909 and 1915 some ~~Methodist~~ Methodist Missionaries came in the Gwembe Valley to work with Rev. Fell; of course, some of them went to Namwala and Mumbwa circuits, e.g. Rev. Lyon and Smith. In 1910 Rev. Cardwell joined Rev. Fell at Kanchindu Mission and he immediately established a second Mission station in the Gwembe Valley at Kampilu Hill near Sinacisikili village in Chief Sinazongwe's area, downriver away from Kanchindu Mission. But this new Mission station was abandoned in 1912 because of Rev. Cashwell and his newly married wife who were seriously attacked by a lion at night in their house, built of local poles, mud and grass. The lion broke the couple's lamp into pieces and took away their handsome dog. Thus, Kampilu Mission station was closed indefinitely and Rev. Cashwell and his wife, Christian by name, and a Musuto Evangelist Teacher, Mr. Rueben Mahilitone, returned to Kanchindu Mission after which Rev. Cashwell was transferred to Namantombwa Mission, Muumbwa Circuit.

In 1913 Rev. Buckery came in the Gwembe Valley to work with Rev. Fell, and in 1915 Rev. Jerald and Rev. Rose came to Kanchindu Mission, in the Gwembe Valley as Missionaries, teachers and ~~Doctors~~ Doctors. They completely wiped out leprosy in the valley, from Chief Sikoongo's area down river to upper river. They also treated leprosy in the villages, in Chief Bbinga's area, across the river. In 1916 Rev. Fell was sent to Kafue by the Synod to start a big school for the Methodist Missionary Society in Northern Rhodesia (Zambia). In the same year, Rev. Curry came to Kanchindu Mission and Rev. Buckery became in-charge of the whole Kanchindu circuit when Rev. Fell went to Kafue. In 1902, Rev. Lyon came to the Gwembe Valley to work with other Missionaries from Namantombwa Mission, Muumbwa circuit.

All Missionaries at Kanchindu Mission lived in a big beautiful house which was built by Rev. Fell in 1915. Rev. Fell was a Missionary Builder, teacher, carpenter, etc.

In 1928, Rev. Lyon founded a Mission station called "Masuku" Mission, (because of more nice masuku fruits at this place) between Maamba Coal Mine and Choma township. This was formerly a rest camp for the Missionaries from and to Choma and Kanchindu Mission. Briefly there were a school, church and a clinic at Masuku Mission. A Boarding school received all school boys and girls from the valley. It was a co-education school for both boys and girls and the classes arranged from Standard III to IV. Boys who passed Standard IV were sent to Kafue Training Institute for further studies i.e., Standard VB, VIB, and three years Teacher Training and Evangelism combined. Some Evangelist teachers were sent to Epworth Ministerial College, Mashonaland, Salisbury (Harare) South Rhodesia (Zimbabwe).

Between 1930 and 1951 the white methodist missionaries lived at Masuku mission. Some of them went down the Valley each year and worked there during the cold months of June and July and returned to Masuku Mission at the beginning of August, they spent most of their time at Choma, where they had a small church. Most of the school and church work was left in the hands of a Zambian and Evangelist teachers of valley blood. Thus, the Methodist church work suffered, especially after Independence most Evangelist teachers were politically removed from the valley to other various parts of Zambia and the new teachers of various denominations with different ideas came in the Gwembe Valley and confused the whole situation of methodist christian life. This began in 1965 when many people from different parts of Zambia and other neighbouring countries who came into the valley to work in Maamba Colliaries and those who came to trade in fish along lake Kariba. They brought with them different religions and customs that narrowed the methodist (UCZ) religion.

Briefly, the methodist missionaries deseted Kanchindu Mission because:-

1. That the Gwembe Valley people were poor, they offered very little money for God's work.
2. That Masuku Mission was a better place to live in, for it was near Choma shops.
3. That the Gwembe Valley was unhealthy place to live in, it is mala malarial.

4. It is difficult to construct roads in the Gwembe Valley due to roads and muddy in the rain season.
5. That rainfall is uncertain in the valley and there is shortage of food always. People starve and have no time to attend sunday service. They often go out to look for bush fruits and vegetables and roots.
6. That the Gwembe Valley people are difficult to abandon their old ways of living. For example elder people themselves refused to accept the new religion because it was contrary to their customary marriage, that of polygamy, in a form of where a man has more than one wife since they were elders in the society, their attitude had powerfull influence over the people in the neighbourhood.

They disliked christianity because becoming a christian meant that a man became separated from the life of the society. He could no longer take part in their religous ceremonies of the Valley Tonga Society. He became practically an outcast from the society. So as long as the Valley Tonga were Independent they felt no need to adopt a new way of life. Therefore although the missionaries were well treated by the people, they found it impossible to make coverts.

Rev. Fell went to Kafue with some students from Kanchindu mission to start the new school with them. They also went to Kafue to help him build the school. These include Mr. Mukatuka David Syamayuwa, elder brother of late Chief Johanne Ngandu Syamayuwa, Mr. Syamaneta and Mr. Mponyongwe Zakaria, Students from Kasenga, Nanzila, Namantombwa and Nambala circuits joined them when the school was opened in 1919. Students from Kasenga Mission were M. Luchendu, Mr. Price Shimunza and Mr. Shankwaya and from Nanzila were Mr. Mathew Lucheya and Joseph Mufalali, from Namantombwa was Mr. Namakumba and from Nambala Mr. Mulala. Some of these became ministers and worked in the Gwembe Valley, e.g. Rev. M. Lucheya and Rev. P. Shimunza. Mr. Harry Nkumbula was one of the Evangelist teachers who taught at Kanchindu and Masuku Missions from Namwala.

5. MEETING OF THE EARLY METHODIST CHRISTIAN MISSIONARIES.

The Methodist Christian Missionaries had three main meetings, namely, the Synod, Quarterly, and Local preachers meetings. The Synod met once a year and it was responsible stationing new ministers and transferring of ministers in the circuits, The quarterly meeting met four times a year in each circuit, the minister in charge was the chairman of that meeting. All ministers from various circuits

circuits met at the synod and discussed progress and problems of various circuits in the country. Each circuit sent a local representative to the synod with the resolutions from the local community prepared by the quarterly meeting. Training of ministers was arranged by the synod. By 1940 successful candidates were sent to Epworth Theological College, Mashonaland Salisbury (Harare) Southern Rhodesia to study God's word for seven years. These teachers first worked as Evangelist teachers in the circuits before going to the ministerial college. Ministers, Evangelists, and Evangelist teachers were paid by the church monthly. In 1930 a minister was paid K25.00 per month and an Evangelist teacher was paid K15.00, a white minister's cook was paid K6.00 per month. The synod was a law making body for all the circuits. The preachers meeting met once a month and reported all its progress and to the quarterly meeting which reports to the synod. It was very important because it was responsible for the recruitment of more local preachers from the entire circuits preachers were classified as follows:-

1. Fully accredited preachers;
2. Preachers on note;
3. Preachers on trial;

6. OFFERING TOWARDS GOD'S WORK

This was carried on in four ways:-

1. Yearly Gifts (Zipo Zyamwaka)

Each person had to give part of his or her produce either in money or in grain. Usually, a minister in charge of the circuit gave empty bags to the headmen and each headman and his people filled their bag with grain and they took it to the minister who put together with other bags from other village. The money from the sales of grain was used to develop God's work. People who had no grain could give anything which they had produced such as eggs, beans, pumpkins, clay pots, stools etc. These were sold for to God's work. Sometime pumpkins rotted before they were sold out.

2. Class Money

This was paid by all christians i.e. on note, on trial, full members and other new followers of Jesus Christ who attended fellowship classes.

3. Sunday Offerings

This was money which was collected on Sunday during Sunday services in church.

4. Holy Communion Offerings (poor fund)

This was money collected at the time of receiving Holy Communion. It was mostly used to help the poor. With poor fund money the minister

bought blankets or short trousers to give to the poor people in circuit.

After sometime the Government started to help the methodist church in the mission schools as well as other missionary schools in the country with grants of money. But education developed slowly because the Government was also poor, and this is because it depended on copper which was sometime not sold on the market. However when the British Colonial Government took over the responsibility of running the country from the B.S.A. Co. (1899-1924) some teachers especially Government teachers who taught in local authority schools started receiving salaries. But since 1900 mission schools have been important as teachers of basic literacy, as teachers of clerks, teachers and preachers and as introducers of modern teaching. Some well known European and Zambian missionaries who assisted to develop education in the 20th century in the Gwembe Valley were: Rev. Stamp, Salisbury, Nightngale, J.L.Mathews, Johneson, C.R.Hopgood (translator of the holy bible from English language into citonga). B.T.Foster, J.T. Mack Cormack, Jinkin and M.Lucheya, G.B.Njase, D. Ramushi (from Basutoland), P.Shimunza, Syaluzu and M.K.Malyenkuku, Rev. Jinkin was the last white missionary who worked in the valley (1952-1963) He witnessed the Kariba settlement in 1957-8. Some Evangelist teachers, just to mention a few, who worked together with the above mentioned ministers in the Gwembe Valley- J.Fulele Luke Madyenkuku, J.M.Syamayuwa, T.Syavwela, A.Syankusulwa, B.Syandele, J.Syazameno, Harry Nkumbula Mwaanga (LION OF ZAMBIA) and J.Syamutondo. Robison Nabulyato speaker of national assembly, Enock Kavu and Noah Mabutwe were some of the Evangelist teachers who taught at Kafue Training Institute in 1946.

Also shortly after the Kariba resettlement some missionaries of Gossner Service Team, Berlin, West Germany, began to assist both in manpower and material to develop the methodist church U.C.Z. in the Gwembe Valley. These include Rev. Steward Kriebel (1971-74). Rev. Clem Schmidt (1976-79) Rev. Kalus Jaehn (1979-82) and Rev. Jaehn and Rev. Waltruat Vliet (1983). They built a church (Trinity) at Nkandabbwe, Sinazeze and local preachers were trained.

In 1928, when Rev.Fell was preparing himself to go back to England, Mr.Ratham the Director of European and African in Nothern Rhodesia at the time asked him to open a Jeane training school at Mazabuka. From Kafue training school, he built the first Government Jeanes (inspector school in the country. As a principal of the college, he opened it in 1930 and organised the college until 1935

when he left the country for his homeland, England. He left Mr. Cetreal, Mr. Keth and Mr. Hages as teachers at the college. After a time, this college was removed to Chalimbana and was known as Chalimbana Teachers College in the country.

As a result of Rev. Fell's missionary work many methodist missionaries from Europe came in the Gwembe Valley. Besides spreading christianity, they taught domestic skills and handcrafts and built schools and clinics, such as Masuku and Kanchindu clinics.

9.7.82.

Herrn Mische / Herrn Knebel Gossner Mission

Liebes Herr Mische,
wir danken Ihnen für Ihre
noch an mich, ich war
1980/81 in Zambia, u.a. im
Gwembe Valley, dort habe
ich den beiliegenden Bericht
geschriften.

~~Ein~~ 102 Kopien davon habe
ich schon vor langer Zeit
nach Tansania zum GST
geschickt. Ich denke, daß
Sie auch Zukünftig an einer
Kopie für die Bibliothek hier
haben. Außerdem liegt mir noch
ein handschriftlicher Bericht
bei, einen Kurzbericht über meinen
Aufenthalt in Zambia sowie einen
Report aus dem Gwembe-Valley
der bei Ihnen sicher bester Ver-
wendung findet als bei mir.

G. W. →



Berliner Missionswerk

Handjerystr. 19/20 1000 Berlin 41

Tel.: 030 / 85 10 21

Entschuldigen Sie, daß
ich diese Sachen etwas spät
und überrekt bringe, aber ich
habe vollauf mit meinem
Diplomarbeit (auch über Tambu,
be. Prof. Sachs) zu tun und bin
jetzt am packen da ich in
Westdeutschland arbeiten
werde.

Vielleicht trifft ich Sie bei
meinem nächsten Berlin-
Besuch an, ich würde gern
eine kleine Menge Hörer aus dem
Gwend - Valley hören.

Mit freundlichen Grüßen

Hubert Padelberger

GOSSNER MISSION

Handjerystr. 19/20
1000 Berlin 41,
den 19.11.1982

Herrn
H. Redelberger
Billingshauserstr. 26
8771 Birkenfeld

Lieber Herr Redelberger!

Für die freundliche Zusendung Ihres ausführlichen Berichtes über Mais-Produktion und Lagerung im Gwembetal möchte ich Ihnen sehr herzlich danken. Ich bin ja blutiger Laie auf diesem Gebiet, trotzdem fand ich Ihren Bericht für mich sehr instruktiv und auch wieder bedrückend im Hinblick auf die deutlichen Verluste der Grundnahrungsmittel durch falsche und unzureichende Lagerung.

Ich werde demnächst mal bei Team nachhaken, in welcher Form Ihr Bericht im Projekt ausgewertet wird und welche Schritte unternommen werden sollen, um die von Ihnen beschriebenen Probleme aufzugreifen und dann nach Lösungen mit den betroffenen Menschen zu suchen, die eine sichtbare Verbesserung der Gesamtsituation bewirken. Sollten Sie wieder einmal in Berlin sein, würde ich mich über einen Besuch freuen. Vielleicht bekommen Sie auch vom Team eine Reaktion oder vielleicht frage Sie nach einer Zeit mal an, was aus Ihren Überlegungen gemacht worden ist. Haben Sie übrigens dem PAO, Mr. Chivema, in Choma auch eine Kopie zugeschickt? Ich bin sicher, daß er sehr daran interessiert ist, zumal Sie ihn in Berlin getroffen haben, wenn ich mich recht erinnere.

Mit den besten Grüßen
gez. E. Mische (nach Diktat verreist)

Hubert Redelberger

Billingshauserstr. 26
D-8771 Birkenfeld/ W.Germany
(Tel. 09398 - 542)

Brief Report on Work- and Study Programme on Post-Harvest Losses
of Grain in Zambia from November 4th, 1980 to April 20th, 1981

The general topic of the programme was 'Reduction of maize losses on small farms'. This topic was brought up by Prof. R. Sachs as the major part of a study project at the Technical University of Berlin.

I participated in this project when it was held at the Faculty of International Agricultural Development in Berlin for the first time in 1979/80. In this project the case of post-harvest maize losses in Zambia served as an example for the planning of an extension campaign.

Prof. Sachs also made the proposal for my programme in Zambia and established contacts with Mount Makulu Central Research Station and the Rural Development Studies Bureau (RDSB) at the University of Zambia. Arrangements for my study programme in Zambia were made by Mr. E. Sakufiwa, Food Conservation and Storage Unit (F.C.S.U.) of Mt. Makulu Research Station and Prof. Evans, then Director of RDSB, who cared also for the study and research permit. To all of them and to the staff of the respective institutions my sincere thanks.

Three months of my stay in Zambia were sponsored by ASA, a West German students programme for works and studies abroad of the Kuebel Foundation. For further three months I lived on my own private funds and on some additional funds provided by Technical University of Berlin for materials and data collection for teaching purposes.

Aims and objectives of the programme

- (1) To gather information on small-scale maize farming in Zambia and on the maize sector as a whole. Particular reference was given to post-harvest losses. This aimed at the provision and collection of further data for the study project on 'Maize in Zambia' at the Technical University of Berlin. Data collected during my programme in Zambia were used for this project when it was run for the second time in 1981/82.
- (2) To carry out a pilot study on improvement of maize storage on small farms in Zambia with particular reference to extension efforts. This study is to be included into my master's thesis in Agriculture at the Technical University of Berlin. Objectives of this study are:
 - i) Maize is the main staple food in Zambia. The reduction of losses on stored maize (which range from an estimated 10 to 30 %) could contribute considerably to the food supply.
 - ii) Improved storage methods for small farmers" have been developed by bodies inside and outside Zambia, but have widely not been adopted by farmers.
 - iii) The investigation into the reasons that make farmers reject the recommended innovations in storage methods is considered necessary.

To improve the traditional storage methods, some innovations have been recommended by the Research Branch. So far none of these recommendations have succeeded. Some hypothetical reasons why farmers rejected these innovations are:

- i) The problem of losses of stored grain on the farm has been over-emphasized in its importance to farmers.
- ii) Recommended improvements need too much change as compared to traditional methods of storage and are not adapted to the needs of small farmers.

- (iii) Farmers are not very conscious of the extent of losses of stored grain.
- (iv) Extension efforts have not been effective and efficient and do not provide the necessary link from research to the farmer and vice versa.

(3) To take part in the ongoing research at F.C.S.U. in order to gain useful experience with regard to technical aspects of grain storage, assessment of losses and to get an idea of research work in a developing country in general.

Results and reports of the programme

- (1) I took part in a trial on 'Efficiency of some traditional methods of storing grain' at F.C.S.U. at Mt. Makulu. In this trial, the effect of wood ash, oil, sand and smoking over a fireplace on the reduction of losses of stored maize, sorghum and beans was tested. The results of the trial were not completely evaluated at the time of my departure from Zambia. However, when I was back in Germany I wrote some reports to review the preliminary results and the personal experience gained in this trial.
- (2) A draft of a report on 'Grain production and storage in Gwembe Valley, Zambia' was compiled in Zambia. A revised form of this report has been completed in Germany (45 pages). This report has not been published but will be available from UNZA and Mt. Makulu libraries. It discusses the problems faced by grain producers in the area, focusses on storage methods and structures on farms and gives some ideas on improvements and further work. The need for extension efforts in the field of farm storage is stressed, but seems only to be viable when grain production in general can be promoted in the area.

(3) The results of the pilot study in Choma District, Southern Province, have been evaluated and are presented in a draft paper 'Maize storage on farms in Choma District, Zambia'. A revised form of this report will soon be available to interested persons. Preliminary results show that losses occurring in farm stores are quite serious and that farmers are conscious of the severeness of these losses; they are asking for feasible improvements.

(4) Results of the pilot study in Choma District and other data collected during my stay in Zambia will constitute the major part of my master's thesis in agriculture at the Technical University of Berlin. It will be available from Institute of Socio-Economics of Agricultural Development, Podbielskiallee 64, D-1000 Berlin 33, Germany (title: 'Problems of agricultural extension activities. The case of improved maize storage on the farm in Southern Province of Zambia'.)

Experience gained during my stay

Through my involvement in every-day work and a trial at Mt. Makulu Research Station I gained useful experience on the assessment of losses in stored products and how to set up a trial. At the same time I gained insight into research work in a developing country in general.

During the pilot study in Choma District I studied applied storage and crop cultivation methods on farms and learned about knowledge and attitudes of farmers towards improved storage and change in general.

While using a questionnaire I had to learn about problems and limitations of social research under field conditions. I realized a lot of the problems and constraints that peasant farmers have to face.

These bottlenecks make adoption of new methods difficult to the farmer however simple they may look to the researcher. That made me also realize that basic research, too, has its limitations.

More important were the personal experiences gained: How to initiate a project in the field with limited finances and other constraints. Very fruitful were also the personal contacts and friendships with Zambians, especially with farmers in the villages.

Problems encountered

Some of the problems have been mentioned already. The personal handicap was the accomodation problem at Lusaka and the transport.

In addition to the problem of having to change accomodation several times, transport was another problem. I had to use unreliable public or costly private transport. For similar projects in future, at least arrangements for accomodation in Lusaka should be made in advance.

Some of the problems mentioned here arose because of my unclear status as research affiliate. I got study permit through RDSB, but most of the time I was supported by F.C.S.U. at Mt. Makulu, and responsibilities were not pointed out clearly enough.

I therefore had to improvise a lot and spent some additional funds of my own. But a lot of friendly people helped to cope with the situation and to make my programme a success in spite of all the bottlenecks.

Time-table of the programme

4/11/1980 - 21/11/1980:

Arrival in Lusaka, friendly reception by Dr. J. Mwanza, Vice-Chancellor of UNZA. Temporary accomodation at Marshlands University Village.

Introduction to F.C.S.U. and Rural Development Studies Bureau. Preparation of programme, discussions with Prof. Evans and F. Maimbo of RDSB.

21/11/80 - 15/12/80:

Setting up of trial on efficiency of traditional methods of storing grain at Mt. Makulu. Building of structures and first sampling procedures.

17/12/80 - 19/12/80:

General introduction and survey on area for pilot study in Choma district. Visit to agricultural extension officers at Siakacieka, Mbabala, Batoka and Muzoka Agricultural camps, at Pemba Agricultural Station and at Kanchomba Farm Institute. Discussion of programme and preparation of actual field study in February. Discussions with officers at the office of the PAO (Provincial Agricultural Officer) in Choma, and at S.P.C.M.U. (Southern Province Central Marketing Union). The whole programme in Choma district was organized and supported by Mr. Mphande, food storage extension officer under F.C.S.U., stationed at Mochipapa Regional Research Station near Choma. He also arranged for accomodation at Mochipapa Research Station.

Transport was facilitated by a "Honda" 90 from F.C.S.U.

20/12/80 - 5/1/81:

Survey on grain production and storage in Gwembe Valley. I was received by Mr. Jähn of GST (Gossner Service Team) of GSOP (Gwembe South Development Project) at Nkandabwe Camp. He also cared for transport, accomodation and gave me much further assistance. Many thanks to him also for the nice Christmas we spent together. Many thanks also to the whole staff of GST, and to Mr. Syabbalo who taught me a lot about Tonga life and history. Together with him I visited some farmers in Siatwinda area. I also paid visits to some other farmers, assisted by Malima FTC. Through discussions with extension staff at Sinazeze I could gather additional information.

7/1/81 - 4/2/81:

Work on draft-report on 'Grain production and storage in Gwembe Valley'. Preparation of actual pilot study in Choma district (preparation and discussion of questionnaire etc.). Sampling and laboratory assessment procedures for the trial on efficiency of traditional storage methods.

5/2/81 - 21/2/81:

Actual pilot study in Choma district. 20 farmers in Siakacieka, Bato-ka, Mbabala, Gamela and Kanchomba areas were visited and interviewed by using a questionnaire. All the farmers were selected by Mr. Mphande of F.C.S.U. or by local extension staff. The questionnaire covered personal data, maize cropping and storage methods, storage structures and extent of losses. All the farmers had access to extension services. Most of them were, however, not informed about improved storage methods or had not yet adopted improvements. But farmers considered their losses to be serious and asked for improvements.

Mr. Mphande was again very helpful in assisting the whole programme and arranged again accommodation with Mr. Malamba at Mochipapa Research Station. Many thanks to all of them. Further useful information was obtained from staff and Marketing Manager of S.P.C.M.U. and officers of the Ministry of Agriculture. The whole programme was successful despite some problems:

- lack of transport from Lusaka to Choma, delay through public transport,
- the "Honda" 90 from F.C.S.U. was in bad condition, several punctures and repairs caused delay and disappointments,
- heavy rains in Pemba areas made roads impassable and some visits to farmers quite adventurous.

28/2/81 - 27/3/81:

Evaluation of results of the pilot study at Mt. Makulu Research Station. Continuing trial on efficiency of traditional methods. Further discussions with officers and experts at Namboard, Ministry

of Agriculture and Rural Development Studies Bureau. Accomodation was a problem during most of my time in Lusaka or Mr. Makulu. During this period I fortunately found private accomodation with Mr. Ken Mohapeloa, lecturer at UNZA.

27/3/81 - 30/3/81:

Informative trip to Mongu, Western Province.

1/4/81 - 19/4/81:

Further evaluation of results. Writing of reports. Collection of additional data from Government Bodies (Namboard, Ministry of Agriculture et al.) and at UNZA.

Discussion of results of the programme. Accomodation during this time was arranged with some Dutch teaching assistants at UNZA. My sincerest thanks for their friendly help.

20/4/81:

Departure to Germany. Back home in Berlin I had to face the accomodation problem again and had to get used to the way of life in Germany again. After some final examinations and together with a job as tutor at the Institute of Socio-Economics of Agricultural Development at the Technical University of Berlin I am writing the final reports on the programme as well as the thesis on the same subject.

TECHNISCHE UNIVERSITÄT BERLIN

Fachbereich Internationale Agrarentwicklung (FB 15)

INSTITUT FÜR SOZIALOKONOMIE DER AGRARENTWICKLUNG

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Datum April 5th, 1982
Sa/Zu

Dear Sir,

In addition to the attached reports by Hubert Redelberger (1) on his field work in Zambia and (2) on "Grain (Maize) Production and Storage in Gwembe Valley, Zambia" I would like to recall the background of these activities.

When I worked with the University of Zambia in 1974-76 holding the course on "Agricultural Extension Education" in Mount Makulu, I was confronted with the problem of traditional maize storage on the farm, since more and more high-yielding maize varieties were grown and stored which are increasingly susceptible to different causes of damage. This case became the nucleus of our extension course. It was exhibited during the Lusaka Show in 1974, and afterwards I have used it several times in seminars and teaching projects here in Berlin. Hubert Redelberger took special interest in that matter and I have gladly supported his activities in preparing and conducting field observations and investigations in Zambia. Now he is writing his MSc. Thesis on this topic in connection with the problems of the agricultural extension service. Beforehand he has written the above-mentioned reports and I am glad that we can send them to you now, although somewhat delayed, first of all as an expression of gratitude for all your assistance, secondly as an indication that we, and in particular myself, are still paying much attention to Zambian affairs on rural development.

I close with a sentence the Vice-Chancellor of the University of Zambia has expressed in his last letter to me: "It is my hope that the cooperation between UNZA and your Institute will grow from strength to strength".

Sincerely yours,

for: Reinhold E.G. Sachs

Mr. Tinsley
(Secretary)

GRAIN (MAIZE) PRODUCTION AND STORAGE

IN GWEMBE VALLEY, ZAMBIA

by

Hubert Redelberger

Lusaka, Zambia, February 1981

INSTITUT

FÜR SOZIAŁOKONOMIE

DER AGRARENTWICKLUNG

DER TECHNISCHEN UNIVERSITÄT BERLIN

GRAIN (MAIZE) PRODUCTION AND STORAGE

IN GWEMBE VALLEY, ZAMBIA

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Hubert Redelberger

Lusaka, Zambia, February 1981

Den Mitarbeitern der Berliner Gossner Mission
für Ihre freundliche Unterstützung

Hubert Redelberger

GRAIN (MAIZE) PRODUCTION AND STORAGE IN GWEMBE VALLEY, ZAMBIA

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1. Foreword

The visit to Gwembe Valley from December 19th 1980 to January 5th, 1981 was part of a six-month research project, sponsored by ASA, a West German students' programme.

Areas visited in Gwembe Valley were Nkandabwe, Sinazeze, Siatwinda, Malima Farmers Training Centre (FTC) and Malima irrigation scheme as well as other activities of Gwembe South Development Project (GSDP) all of which are in Gwembe South region of Southern Province of Zambia.

The scope of the study are the methods and problems of grain storage in Gwembe South and the attitudes of farmers towards grain storage, grain production and possible improvements.

It was not possible to collect comprehensive empirical data, but the information can still be useful for policy-making and further work.

Information was gathered by means of visits to farmers and discussions with local authorities.

Ten farmers were selected by staff of GSDP and by local extension staff, all in the areas named above.

A questionnaire was used rather as a data-schedule (Appendix 2) than in a formal way. The questionnaire served as a form to fill in results, and the interviews formed also a pre-test for the questionnaire used for another study in Choma District.

Useful information was also collected through discussions with local authorities, including Assistant District Agricultural Officer (ADAO), extension staff, the Officer-in-charge for Malima Farmers

Training Centre and the staff of Gwembe South Development Project, all of whom I thank for their cooperation.

However, most informative were the discussions with local village people and farmers, who received me very friendly and showed great interest in the task.

Many thanks also to Prof. Sachs of Technical University of Berlin, who proposed my project and made useful comments, and to the staff of Food Conservation and Storage Unit of Mount Makulu Central Research Station, Zambia.

The aim of the report is to present data and problems discovered and make suggestions for improvement to the people in Zambia working in this field.

It serves also as a data collection for a student's study project on "Maize in Zambia" held now for the second time at the Technical University of Berlin.

Lusaka, Zambia, February 1981

2. Summary

Grain and, more especially, maize production in Gwembe Valley is decreasing, while the production of the cash crops sunflower and cotton is increasing.

This is due to climatic factors as well as to marketing and pricing policies.

Climatic factors are hampering grain production in Gwembe Valley a lot. Rainfall is comparatively low and erratic compared to the plateau areas of Southern Province of Zambia.

There is no improved maize variety available to the farmers in Gwembe Valley that suits the prevailing climatic conditions. This is one reason why sorghum still plays a considerable role as staple diet for subsistence farmers in the area. The consumption of mealie meal, which has to be imported from outside the Valley, is steadily increasing. Even many farmers and rural people depend on the supply from outside. Government pricing policy makes mealie meal cheap to the consumer despite the high costs which are involved when transporting it to Gwembe Valley.

Storage structures

The common storage structures in Gwembe Valley are much the same as on the plateau areas of Southern Province, i.e. storage bins are mostly made out of wooden poles raised on a platform. There are however some differences: A bin which is muddied inside and outside with clay (kabbule grain bin) is almost exclusively in use for the storage of unthreshed sorghum and for groundnuts. In a few remote areas of Gwembe Valley, there is still a traditional solid-walled bin (cimumbwa cabwaalo) in use, which is not reported from other parts of Zambia. This bin appears to have all the properties of an improved storage structure and could be used for the storage of shelled maize.

Grain handling

No common practice of post-harvest handling of maize (cleaning of buildings, drying, selling) was observed. No proper seed selection is practiced with the local varieties by many farmers. Pure local varieties and hence their positive genetic potentials are vanishing.

Losses of stored grain

Losses of stored grain as reported by farmers are quite serious. It is estimated that an average of 40 % insect-damaged grain occurs on stored maize in December. The last weeks of December are also the end of the storage period for most farmers, since they do not store enough for home consumption up to next harvest.

The average insect damage over the whole storage period to maize put in store is estimated at about 20 %, which corresponds to approximately 2.5 % weight loss (1).

In previous years when an estimated number of 15 - 20,000 bags of maize were retained on farms in Gwembe Valley, these individual losses of maize stored on the farm would make up an overall loss of 500-1000 bags. Valued at the current price of K 13.50 per bag, this amounts to 6000-13500 Kwacha per year for maize on the farm only. The losses on stored sorghum appeared to be of the same severeness as with maize. Up to 50 % of the grain was insect-damaged at the end of December. With sorghum it was, however, difficult to assess weight losses and make estimates.

Improvements

The storage of shelled maize, treated with insecticide (100 grammes of Malathion dust 1 % per 90 kg bag of shelled maize) is recommended by the Food Conservation and Storage Unit (F.C.S.U.) of Mt. Makulu Research Station. There is, however, some concern about the safety

of the recommended insecticide to man and as to whether the correct application by the farmer can be assured. Solid-walled bins are recommended for improved storage of shelled maize. The local structures known as 'kabbule' and 'cimumbwa cabwaalo' grain bins in Gwembe Valley have most of the properties that are required for improved storage of shelled maize. To make storage of shelled maize possible, it is, however, necessary to assure proper drying of the grain on drying cribs.

Extension work

No systematic extension work on food storage has been done in the area up to date. Extension work in general is hampered by lack of funds for transport of course participants and their accomodation.

Recommendations

The running of a course on food storage with extension staff at Malima Farmers Training Centre is recommended. The need for an improved maize variety suitable for low-rainfall areas like the Gwembe Valley is stressed and local research in this field is recommended. Since production and storage of maize is rather small and the storage period is short, it is not recommended to put isolated efforts into the field of storage on the farm. This could only be viable within an integrated programme to improve local supply with maize and food in general.

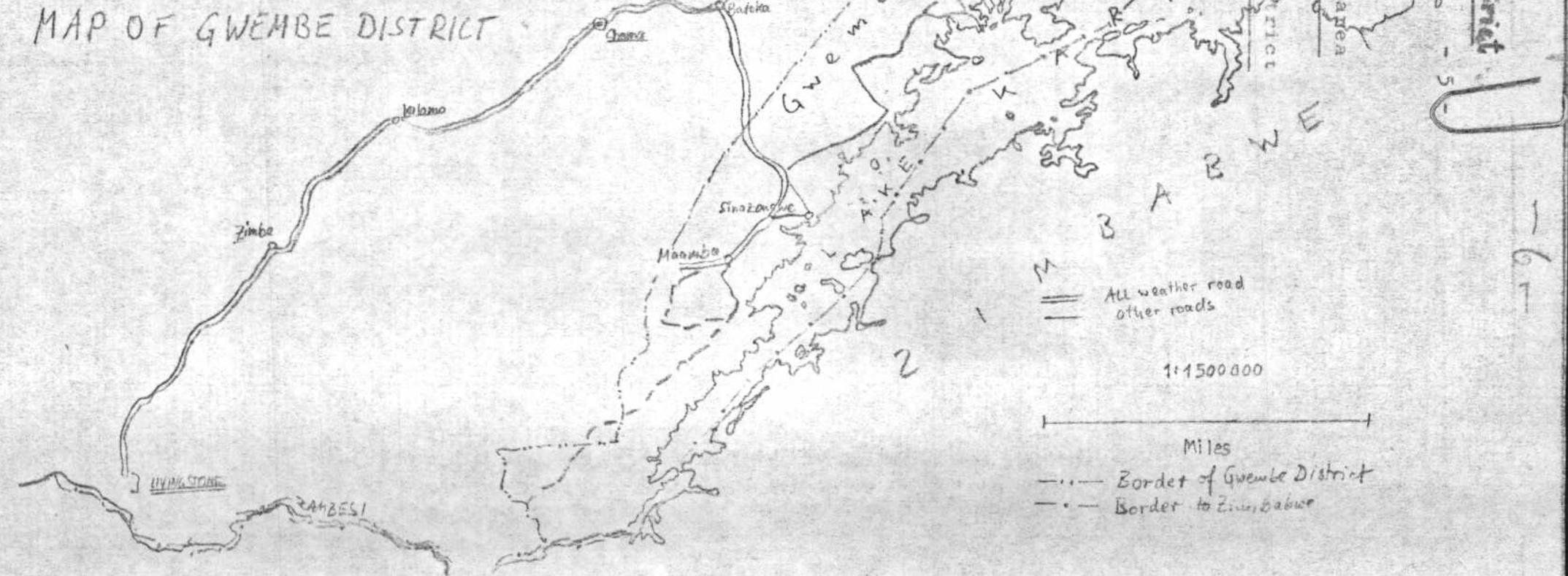
3. Introduction

3.1. Map of Gwembe District

— 6 —



MAP OF GWEMBE DISTRICT



3.2. Agronomic conditions

Gwembe District lies in the Southern Province of Zambia. The eastern border of the district is formed by Lake Kariba and the Zambezi river and this is at the same time Zambia's border to Zimbabwe. As one can see from the name Gwembe Valley, most of the district is formed by a river valley and the Zambezi escarpment.

The whole district shows a lower altitude than most other parts of Zambia. The altitude is between 550 metres at Lake Kariba and 1,000 to 1,200 metres NN at the Zambezi Escarpment, where Gwembe Valley meets with the Plateau of Southern Province. Due to the lower altitude, the temperature is higher than on the plateau areas of Zambia.

Climatic Data for Gwembe Valley (2):

Beginning of rainy season:	15th November
(the latest in Zambia besides Luangwa Valley)	
End of rainy season:	15th March
(the earliest in Zambia)	
Average annual precipitation:	711 mm
(the lowest in Zambia)	
Average fluctuation of annual precipitation:	762 mm
(highest in Zambia)	
Average daily temperature maxima	
October	35° C
January	27° C
Average daily temperature minima	
October	20° C
January	20° C

As can be seen from the statistics, rainfall is generally lower than in other parts of Zambia, while the temperature is higher. Agronomically more important, however, is the uneven and erratic distribution of rainfalls within the area, between successive years and within a particular rainy season.

Due to this climatic situation, a number of crops like bananas and citrus can be cultivated in the valley, which is not possible on the plateau. But the agronomic conditions for maize are less suitable than on the plateau.

Soil

Soils are a major limiting factor in Gwembe Valley. The largest areas are covered by mopane soil, which is considered very poor, but there are three other soil types, some of which are very good for maize and cotton cultivation.

3.3. Situation and history of the Gwembe Tonga

Most people in Gwembe District belong to the Valley Tonga group of the Tonga tribe.

Before the construction of the Kariba Dam, there was not much agricultural and social change among the Valley Tonga. The Kariba Lake, one of the world's biggest man-made lakes, caused the resettlement of more than 50,000 people, many of whom moved into Southern Gwembe region. This caused a radical change in the system of agriculture, which was until then based on the annual flooding of the Zambezi. As a consequence, agriculture deteriorated and many young men looked for jobs outside agriculture and outside the valley.

On the other hand, after the establishment of Kariba Lake, more attention was paid to the development in Gwembe South, particularly on the exploitation of coal resources at Maamba Mine. A new road and schools brought further change. The recent development including the introduction of new cash crops has reversed the decline of agriculture, but there are still few employment opportunities in the area.

3.4. Economic situation of farmers in Gwembe South

Farm data for Gwembe Valley 1973 (5)

Average family size: 8-10 persons
Average cultivated area: 3 ha
Average income: K 132 per year

<u>Income sources</u>		<u>Expenditure</u>	
Sales of cattle	19 %	Textiles	32 %
Beer brewing	10 %	Local beer	9 %
Other agric. sales	7 %	Additional food from groceries (about half of which	
Non-agricultural activities	64 %	is mealie meal)	16 %
		Meat and fish	7 %
		Other household expenses	25 %
		Cattle purchases	6 %
		Agricultural expenses	5 %
	100 %		100 %

The data show that agricultural income and particularly agricultural expenses are very low and most people earn their cash income outside agriculture.

The radical change in agriculture after 1960 has also led to a situation where people, even farmers in Gwembe Valley, are not self-sufficient in food grain.

Sales of food grains in 1971: (5) 49 kg per family and year
(mainly for local beer brewing)

Purchases of mealie meal in 1971: 98 kg per family and year

It should be noted that 1971 was a good agricultural year and since then less and less maize was grown. Therefore, the purchase of mealie-meal is much higher nowadays. It is therefore assumed that even in good years some thousand tons of mealie-meal have to be imported to Gwembe Valley from other parts of Zambia.

3.5. Farm types in Gwembe South

There are different approaches in classifying farmers. One common way is to distinguish between subsistence farmers, emergent farmers and commercial farmers. There are no real large-scale commercial farmers in Gwembe Valley. It has been found that there exist big differences in the economic resources of households that could be classified as subsistence farms (4). This fact should be considered in any programme meant for this group of farmers. The only available survey covering Gwembe Valley (5) classifies farmers into three types according to their method of cultivation:

Type 1: only hand-hoeing
Type 2: owns one pair of oxen
Type 3: owns more than one pair of oxen

The study gives the following data for each farm type:

<u>Farm type</u>	<u>Percentage of farms surveyed</u>	<u>Cultivated area (average)</u>
Type 1	50 %	1.5 - 2 ha
Type 2	30 %	3.0 - 4 ha
Type 3	30 %	4.5 - 6 ha

During the time of that survey (1973), the average farmer was little involved in market or monetary economy. This applies particularly to his agricultural activities. Agricultural expenditure was then only 5 % out of a total expenditure of K 132, equalling K 6.6 per year. Since then the situation has changed a lot with the introduction of

fertilizer and pesticides and with the introduction of cash crops such as cotton and sunflower. Gwembe District is now the first cotton-producing area of the country.

The economic situation of farmers interviewed;
the emergence of a new farm type

The introduction of new cash crops, the use of fertilizer and draught-oxen on a larger scale has changed the agriculture of the Gwembe Tonga.

This change was reflected by the group of farmers interviewed. The farmers interviewed showed, typically, the following farm data:

	<u>Range</u>	<u>Mean</u>
Average cultivated area:	6 - 15 ha ^{x)}	8.5 ha
Maize cultivated area:	4 - 10 ha	5.5 ha
Cotton cultivated area:	1 - 2 ha	1.5 ha
Sunflower cultivated area:	0.5 - 1 ha	0.5 ha
Family size:	10 - 25 people	15
Number of trained oxen:	3 - 10 oxen	4
Method of cultivation:	Ox-ploughing, ridging with oxen, planting by hand into plough-furrow or by ox-drawn planter. No hand-hoeing except for weeding.	

x)

There are also a few farmers in Gwembe South who cultivate up to 20 hectares or even more by ox-ploughing. They can be called emergent farmers.

The data of the group of farmers interviewed show that they do not belong to any of the three groups from the report quoted above (5). A new group of farmers has emerged and I want to name them (according to Honeybone and Marter (4)), Group 4. All the farmers inter-

viewed during my stay belong to this group.

Assuming average yields of 800 kg (16 bags) per hectare of sunflower and 1,200 kg per hectare of cotton, the additional agricultural cash income of these farmers should be between K 680 and K 1,640 per farmer and year. (At current prices of K 0.46 per kg of cotton and K 16.40 per bag of sunflower.)

4. Grain production

4.1. Problems faced by grain producers

Pricing policy

One main problem, specific for Gwembe Valley, is the low and erratic rainfall.

Therefore, the area is not considered very suitable for maize production. Furthermore maize production is discouraged by relatively low producer prices (below import parity) for maize and relatively high prices for sunflower and cotton (above export parity), by unreliable supply with fertilizers and seeds for maize production and by heavy consumer and transport subsidies for mealie-meal.

More and more farmers shift from maize to cotton and sunflowers, from which they earn the cash to buy mealie-meal (if available) throughout the year. This seems however not to be in line with policies of regional self-sufficiency and decentralization efforts as proclaimed in TNDP.

Many of the problems are due to marketing and pricing policy and not because of natural conditions. And even the problem of low and erratic rainfall should not hamper food production, if it was tackled seriously (like in other countries under similar or worse climatic conditions).

Maize varieties

One answer to the agronomic conditions in Gwembe Valley would be a drought-resistant, high-yielding and fast-maturing maize variety. SR11, a variety which fulfills these demands has already been developed. But it was not available to farmers from NAMBoard in the last years. Also Pioneer Hybrids (namely Pioneer 542 under drought conditions) have proved more suitable and of higher potential under low rainfall than SR52, but are not available in Zambia. SR52 Hybrid is the only improved variety which is available most of the time. It is however not very suitable for the prevailing agronomic conditions in Gwembe Valley because of:

- its long vegetation period (about 170 days to maturity),
- its need for high and evenly distributed rainfall for good results,
- its genetic variability; Zambian-produced SR52 seeds seem not to be pure;
- the high management level required; correct appliance of fertilizer, purchase of seeds every year in time, correct spacing, timely planting are requirements which are not fulfilled by many small-scale farmers;
- its susceptibility to storage pests due to its soft grain and incomplete husk cover; particularly small-scale subsistence farmers depend on the storage properties of the crops they grow for home consumption;

As a result, in recent years (e.g. in 1978/79), the yields of SR52 in Gwembe Valley were low, many farmers made a loss and some farmers had stopped maize production completely.

Local varieties like the small (Flint-maize type) variety of the Valley Tonga called "KAILE" do not cause some of these problems:

Advantages of local maize varieties are:

- Needs only 3 months to mature. (Traditionally, before Kariba re-settlement, the 'Kaile' variety was planted in the Zambezi plains in the dry season in July/August and harvested in October already).
- The hard grain and tight husk cover of the small cobs give good protection from storage pests.
- Since it is not a hybrid, seeds from the farmers' own harvest can be used and no cash is required for purchase of seeds.
- Local people prefer its taste for home consumption.
- Needs less rainfall, fertilizers, lower management, and is more resistant to drought.

There are, however, some disadvantages as well:

- The local varieties have small cobs, genetic potential and yields are low.
- Areas cultivated are small and the varieties are vanishing.
- No seed selection is commonly practiced by farmers nowadays, so there is no natural improvement of the genetic potential.
- In many cases it is no longer a pure variety, because of poor seed selection. In store, local varieties are often mixed up and interbred with other varieties (Hybrid), which leads to a degeneration and disappearance of the properties.

An alternative to the development of a new hybrid variety at the Central Research Station (which is unlikely to reach farmers and be supplied evenly to them, as was the case with SR11) would be the improvement of local varieties by teaching farmers good seed selection and improving local varieties locally. This may be a long

way but it seems more promising than new hybrid varieties, which attract great attention at the Central Research Station and in newspapers but are neither suitable nor available to the farmers in Gwembe Valley.

Another thing discovered and connected to improved farming was that farmers have difficulties in applying accurate quantities and types of seeds, insecticides and fertilizers. They do not know the size of their plots, the correct spacing nor any measurement to plan the required amount of seeds and fertilizer.

The LIMA Extension Programme makes an attempt to tackle this problem. This programme could be applied for farmers in Gwembe Valley as well, but there seems not to be a systematic approach including supervision to spread the information to many farmers. The Lima Crop Memo Brochure (obtainable from Mr. McPhillips, Department of Agriculture, Research Branch, Mount Makulu) as well as posters and visual aids should be available in the local language, i.e. Tonga.

4.2. Grain marketing

Maize is grown both for home consumption and as a cash crop. The average area under cultivation is however small and the marketed production is still decreasing. Sorghum is still grown in large quantities almost exclusively for home consumption and for local beer brewing. Millet is grown in smaller quantities for home consumption only. Sunflower and cotton have become important cash crops in the area and tend to displace grain production.

It is the policy of the Department of Agriculture of the Government of Zambia (according to the report of the District Agricultural Officer) and of the GSDP that individual farmers and the Gwembe Valley as a whole should be self-sufficient in food, i.e. maize production.

In contrast to this declared policy, grain production in the district has steadily declined (Appendix 1). From observations it is also evident that the area cultivated with maize for home consumption has shown similar decreases. It is estimated that 70 to 90 % of the maize is retained for home consumption in years of good harvest. In addition, about 10 % of the whole production are marketed locally or bartered with neighbours and relatives. This leaves only between 1 and 10 % out of the total production to earn cash income and to feed the nation. In recent years, when the harvest was low, only about 5 % of the production was sold by farmers to NAMBoard.

Production of sunflower and cotton, particularly in Gwembe South, are rising steadily, while grain production has decreased.

The decrease in grain (maize) production seems to be due to two facts:

- a) unfavourable agronomic conditions for maize as compared to cotton,
- b) Government pricing policy and seeds supply, which encourages cotton growing and discourages maize growing for the market.

4.3. Marketing agencies and facilities

Up to December 1980, NAMBoard (National Agricultural Marketing Board) was the sole agent for grain marketing in Gwembe District. NAMBoard runs about 23 rural depots in the district, 6 of which are in Gwembe North, 9 in Gwembe Central and 8 in Gwembe South respectively.

Maize is only temporarily stored in the rural depots and then transported to the main depots in Monze and Choma for permanent storage and further distribution.

Difficulties reported by farmers and concerning the marketing system are:

- (a) Seeds are not available, or often not available in time.
- (b) No improved maize variety suitable for Valley conditions (like SR11) is available at rural depots.
- (c) Fertilizer is not available in time, and often not the required types.
- (d) Insecticides (particularly those for stored products) are not in stock.

On the 1st of January 1981, Southern Province Central Marketing Union (SPCMU) took over all responsibilities and activities from NAMBoard in Gwembe District.

5. Grain storage

5.1. General storage pattern on farms

It was already shown that grain production is low and still decreasing. The quantity stored on all farms visited was not enough for subsistence needs of the family. In most cases, grain stored on the farm was finished in November/December and from this time onwards the farmers rely merely on mealie-meal. Some farmers sell parts or all of their maize soon after harvest and store small quantities or no maize at all. In some cases (due to difficulties with SR52) farmers grow only sorghum and store it for home consumption. This leads to the situation that farmers depend on cash income and regular supply of cheap mealie-meal.

There is a lot of transport and marketing costs involved in moving all the mealie-meal from Choma or Lusaka to the Valley and distribute it to rural households and farmers. In addition, even the few bags of maize that were marketed in the previous years in the Valley were transported and stored centrally outside the valley in Choma or Monze.

This marketing structure seems to be very uneconomical and also not in line with Zambian agricultural policies. It means inefficient use and misallocation of scarce transport and marketing resources.

By encouraging maize production and improved storage on the farm, more maize could be produced and retained in Gwembe Valley, thereby reducing transport costs. Farmers would be safer in years of famine (which is still occurring) and less dependent on mealie-meal supply and prices of mealie-meal. Any maize sold should be stored and marketed locally. This could be done by S.P.C.M.U. or other bodies such as GSDP.

The work of pounding maize, which is done by women, is hard and time-consuming, and this is another reason for farmers to prefer mealie-meal. The problem of pounding maize could be tackled by establishing local grinding mills. The efforts of Siatwinda Credit Union and GSDP are a good example in this respect. This Credit Union has bought maize from NAMBoard in the 1980/81 season, stored it locally in Siatwinda. It owns a Hammer Mill, where local women can grind their own maize cheaply. The Credit Union was able to release maize to people in need (e.g. to Siameia). If this policy could be generally accepted, it would be necessary to train people in practices of storing maize on their farms and in local stores all the year round.

5.2. Storage and the marketing and pricing system

Some problems can, however, not be overcome by local efforts alone. These are mainly problems caused by the central marketing and pricing system. In some areas producer prices for maize are still below the cost of importing it to the particular areas. Maize can be produced in the more (agronomically or structurally) favoured areas and shipped to less favoured and remote areas because transport costs are not considered in the whole marketing system. NAMBOARD heavily subsidize the transport costs for maize as well as the price of mealie-meal.

Regional price differentiation would help to avoid these misallocations, give more chances to local farmers in unfavoured areas and promote self-sufficiency.

In the present system, the same price for maize is paid to the farmer throughout the year. This means that the farmer has no incentive to store maize on the farm and sell it later on, if he does not need it for home consumption. The reason for this pricing policy may be that the Government wants to know as soon as possible after each harvest how much maize was harvested and what has to be imported to feed mainly the urban population. This may be important for the policy-maker and the urban population, but it is not in favour of the rural farmer.

Seasonal price differentiation would give incentives to keep more maize locally in each area and it would give the farmer an additional share of the "consumer's Kwacha", which otherwise goes to Central Marketing Agencies. Efforts like the envisaged national grain reserve and forecasting of the maize production should allow the implementation of this policy of seasonal price differentiation in favour of the farmer.

5.3. Storage structures

Butala grain bin

This is a general name for a wooden-pole or sorghum-stalk type of bin. Its properties are as follows:

Platform: Always raised on poles (mostly of termite-resistant mopane wood) between 1.5 and 2 metres above the ground. The platform is often larger than the bin to produce a veranda.

Walls: Either made of wooden poles connected by smaller poles and ropes (Figure 1, 3, 4) or of closely connected sorghum stalks (Figure 2).

The pole-type bin is sometimes plastered inside or both inside and outside. In this case, some segments of the walls are often not plastered to allow air ventilation (Figure 3, 4).

Floor: The floor is always plastered.

Outlet: Access to the grain was in most cases observed to be a door or a hole in the middle of the wall.

The door is made either of wood or of sorghum stalks.

Size of

container: Varies considerably from 1.5 metres in diameter and 1 metre height to 4 metres in diameter and 2.5 metres height.

Roof: Grass-thatched roof as common in Zambia. Sometimes also made of sorghum-stalks.

Material

used: The materials used can vary considerably according to the various sizes of the bins. The amount of material used is normally not known or recorded. This was, however, done in the Kariba Resettlement Survey carried out in 1956 (7). The Survey mentions the following data for the whole area: average grain bins per hut 1.1 - 1.4 of various sizes and shapes.

Components of a specimen average-sized grain bin in two Chipepo villages of Gwembe Valley, 1956 (7).

Size: 8.6" diameter = 3 metres

Poles:	Number	Diameter	Length
Bin (6 ties)	139	1"-2"	6'4"
Tray	64	1"-2"	8'6"
Legs	17	4"-5"	3'
Outer supports	14	4"-5"	8'
Roof (9 ties)	49	2"	12"6"
Grass	25-30 bundles		
Plaster			

Grain Storage Structures in Gwembe Valley
(Notice: all in different scale, 1 equivalent 1 Meter, shows scale)

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Fig. 1 Big unplastered Butala Bin of wooden poles



Fig. 2 Big Butala Bin of Sorghum stalks



Fig. 3 Partly plastered Butala of wooden poles



Fig. 5 Kanbule bin, fully plastered, for Sorghum storage

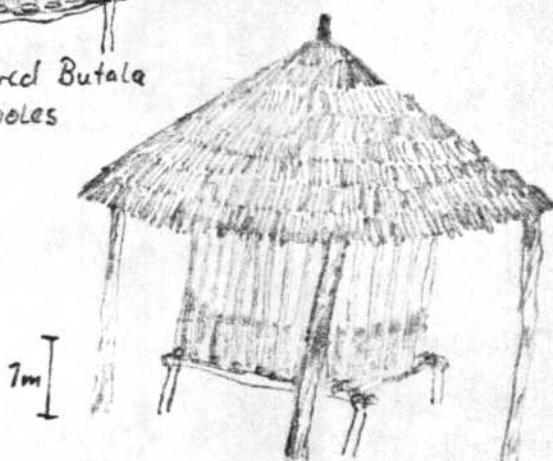


Fig. 4 Butala bin from wooden poles, partly plastered from inside with big roof providing Veranda



Fig. 6
Cimumbwa Cabwaalo
or Cimumbwa Cipate
(Big Grain Bin)

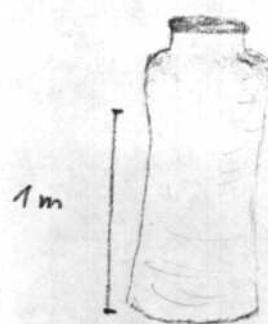


Fig. 7. Example of kasuntulua with approx. 3 bags capacity for seed storage

Big Butala types, particularly those of sorghum stalks, are often multipurpose cribs. Maize (local and Hybrid) and sorghum are stored there as well as seeds, fertilizer, mealie-meal and different farm and household requisites. Some are also used as temporary houses for family members or guests.

If there is more than one bin in a household, the main, biggest one belongs to the head of household, where maize for the whole family is stored. Each wife and eventually the mothers or other family members have also one bin, ^{each} mostly of the Kabbule type, where they store maize or more frequently sorghum for themselves and their children.

Kabbule grain bin (Figure 5)

The Kabbule is constructed in much the same way as the wooden pole type of the Butala. The Kabbule is, however, smaller in size and always muddied over the whole height of the wall.

Platform:	raised 1 - 1.5 metres above ground on mopane poles
Walls:	from wooden poles, plastered from inside or both inside and outside with mud
Size of container:	average diameter 2 metres, average height 1 - 1.5 metres
Outlet:	hole in middle of wall

The Kabbule bin is mainly used for storing unthreshed sorghum. Often these bins belong to the women, while the husband has a bigger bin of the Butala type.

Cimumbwa cabwaalo or Cimumbwa cipati (Figure 6)

This is said to be the traditional type of grain bin among the Tonga people, while the Butala and Kabbule types were (formerly) only used

for storing groundnuts etc. Now the Cimumbwa cabwaalo is only found in a few places and many people seem to have forgotten it. Before the Kariba resettlement this bin was reported from the Western end of the Gwembe Valley and from the south banks in Siachelaba and neighbouring chiefdoms, where it appeared to be the only type of grain bin (7). Nowadays it is only found in a few areas, which are Siameia, Kafwambila and Siampondo in Gwembe South. Because these areas are remote and there are still landmines from the Zimbabwean war, these areas could not be visited.

The bin has the shape of a large bottle and is made from clay mixed with grass. The foundation is a platform raised on 4 big stones. 2 big woodpoles are laid on these stones. These 2 poles are crossed by about 6 small poles. These smaller poles are again connected with smaller poles and branches to make a tight platform. This platform is muddied with clay. The container itself is built from clay mixed with a soft annual grass (local name of the grass is mpunga). The grass is collected in early June and broken to soften it. The clay is watered for 3 days to make it soft and then mixed with the grass. The bin is built up with lumps of this mixture and is smeared to make a smooth surface. The bin is covered with a lid in the shape of a disc made from the same material. The whole process of construction and collection of materials can take up to 3 months. The bin is always built away from the house on the eastern side, which is the prevailing wind direction.

The bin is constructed by men and usually owned by the head of household. This may be due to the amount of work involved and because the main purpose of the bin is to help the whole family in cases of emergency or famine. The owner of such a bin was considered wealthy and safe from famine. It was common to decorate the bin with symbols (e.g. womens breasts) showing that the owner had no difficulties in getting women for marriage.

The bin was used mainly to store finger millet for a long time. People say that finger millet could be kept safely for 5 or more years in this bin. In about two thirds of the height of the bin there is a pole crossing both walls of the bin. This pole (local name: sikayo = heart of the bin) is used as a step to enter the bin and remove grain. Its height indicates also a level of grain that shows a good harvest and which is enough for the subsistence of the family.

The size of the Cimumbwa cabwaalo (or Cimumbwa cipati = big grain bin) can be considerable, i.e. about 1.5 metres in diameter and 2 metres high. The whole bin is protected by a big thatched roof on wooden poles.

Smaller bottle bins (Kasuntulua) (Figure 7)

Smaller bins of the same type as the Cimumbwa cabwaalo with 1 or more bags capacity are used for the storage of smaller quantities of grain and seeds (e.g. groundnut seeds, pumpkin seeds). Two examples of this bin with about 2 bags capacity are kept at the Tonga crafts Museum at Nkandabwe Camp of Gwembe South Development Project.

Other structures

Drying cribs (cisanza) can also be used as a temporary means of storage. Maize on the cobs or shelled in bags is sometimes kept in any type of house in the homestead. Drying cribs (cisanza) are made out of wooden poles in rectangular shape, raised on strong poles about 2 metres high and without roof. They are used for drying as well as for temporary storage.

5.4. Post-harvest handling of grain

Stores observed were often unclean. There is no uniform way of storing and handling grain. Farmers used quite different methods without giving reasons for it. Sorghum, Hybrid and local maize are often

stored in the same bin. While generally farmers store their maize on cobs with husks on, sometimes cobs without husks can be found in the same store. Cobs of hybrid maize with untight husk cover and heavily infested with insects can be found inbetween local maize cobs.

Drying

Drying is often done by leaving maize excessively long in the fields. This increases the risk of high infestation. In some cases observed, maize was mouldy before the beginning of the rainy season, which indicates insufficient drying. Drying cribs (cisanza) are used by a number of farmers.

Shelling

Shelling is only done for sales of maize to NAMBoard after harvest and later in the year in small quantities for home consumption. Shelling is mainly done by hand, a work exclusively done by women. Women to whom I explained the recommended shelling of maize before storing it, were reluctant because they felt it is a lot of work. Some farmers with two or more wives find shelling a problem, because it makes it more difficult to control how much maize their wives take out of store and for what they use it.

5.5. Losses of grain stored on the farm

Factors of losses

All farmers reported serious losses and most of them named insects as the main factor. The main insects observed are weevils (*sitophilus spp.*) and grain moths (*sitotroga cerealalla*). Both were found in all maize and sorghum stores observed. Visibly insect-damaged grain accounted for up to 20-50 % in the bins observed in December, which is for most farmers the end of the storage period.

Rats were not reported as a particular problem.

Mouldy maize was observed in a number of cases at Malima and Siatwinda. Farmers explained that cobs had already been affected in the field.

Extent of losses

Serious loss was both observed and reported by farmers, mainly caused by insect damage. The loss in quality and quantity is difficult to assess on the basis of the data collected. But it can be estimated that an average of 40 % of the grain is insect-damaged at the end of the storage period in December. The storage period is 5 months only, on the average. Taking into account that only part of the grain remains in the store for five months or more and no serious damage occurs at the start of the storage season, the average insect damage to the amount of grain put into store should be 20 % or less. As was found in other studies, 20 % insect damage equal approximately 2.5 % weight loss for maize. This takes only quantitative loss into account. Loss of quality is difficult to assess and to evaluate, since there are alternative uses (beer, chicken feed) for damaged grain.

Taking figures from previous years, when an estimated number of 15,000-20,000 bags were retained on farms, the individual losses would make up an overall loss of 500-1,000 bags for Gwembe District.

Valuing this loss with the current producer prices (K 13/bag), it comes up to K 14000. In years of production below self-sufficiency, the cost for the nation was even higher, since maize had to be imported at higher prices. This does not include losses of sorghum and millet.

There was also serious insect damage observed on sorghum and millet. While bulrush millet was always considered not to be susceptible to insect attack, a sample of bulrush millet taken from Siatwinda showed more than 50 % visible insect damages. The insects bred

out from this sample belonged mainly to *Sitotroga* spp.

5.6. Seed storage

No particular method for storing seeds was reported by the (comparatively prosperous) farmers interviewed. Since Hybrid maize from one harvest cannot be used for planting next season, it should be kept separately from local maize. Separate storage of local maize seeds was traditionally practiced by hanging cobs in bundles from trees. In this way, it can dry well and the exposure to the sun keeps insects away. This practice seems to disappear. Separate storage of local maize for seed as well as seed selection was not practiced by any farmer visited. On the contrary, it was observed that local maize and Hybrid maize were mixed on several occasions. This happened either when both local and Hybrid maize were stored in the same crib or when local maize was used to fill spaces in fields planted with Hybrid maize. The proximity of plots with different varieties adds to the occurrence of interbreeding.

It can also happen that Hybrid maize from the last harvest is used for planting again, which leads to degeneration. This was evident when farmers showed me a 'local variety' called "Gileyile", a dent maize with large cobs, which was apparently mixed up with improved varieties.

Seed maize is taken from the same bin where the maize for consumption is stored. Farmers select visibly less damaged cobs. But there is already a lot of insect damage at planting time in December and this may be one of the reasons why germination is unsatisfactory and on many plots the spacing is very scattered. Selection of good, healthy cobs at harvest time and separate storage of seeds in suitable containers (e.g. in pots, calabashes, small cimumbwa bins) and protection of the grain by insecticides or wood ash for seeds should be encouraged.

5.7. Some social aspects

Social aspects seem not to be closely linked with grain storage. But some observations should be mentioned here.

Some of the work related to storage is done by different members of the family. While ploughing and planting is done mainly by men, also women have their own plots, where they plant their own maize or sorghum. They store also quite a reasonable amount of grain in their own bins. Storage bins are, however, always constructed by men. Other activities related to post-harvest grain handling are only done by women. This includes shelling, pounding or grinding, taking the grain out of store and cooking. Therefore, women play an important role when post-harvest handling of grain on the farm is concerned.

When grain is to be stored in shelled form, as recommended, women have to be convinced that it is worth doing this. It was also observed that men as well as women cared only for their own store and were not so much interested in the store of their wife or husband respectively. If only men are included in extension work, it is, therefore, possible that the considerable part of grain stored by women, either married or single living in their own homestead, is not included.

5.8. Recommendations for improved on-farm storage

As can be seen from the afore-mentioned, hybrid varieties with their soft grain and poor husk cover do not store well. Local varieties cause less problems, if undamaged cobs with tight husk cover are selected and stored properly. The recommendations for the storage of the Hybrid maize, given by Food Conservation and Storage Unit (F.C.S.U.), Mount Makulu, are as follows:

1. Shell maize for storage;
2. Store dry maize in a solid wall bin;
3. Admix grain with insecticide (1 % Malathion dust);
4. Control rats by raising bin and fixing rat baffles on legs.

Shelling

Shelling means additional work, but it is considered necessary because:

- Grain moths are controlled since they cannot move within the shelled grain;
- Shelling allows the proper admixing of insecticide (or traditional materials) to control weevils and the other main insect pests causing damage.

A solid wall bin is necessary because

- It allows storage of shelled maize;
- Insecticides are less exposed to sun, moisture and air and therefore last longer;
- Sealing of solid wall bin can prevent re-infestation physically.

Drying

If maize is stored in a solid wall bin, it must be dried very well (moisture content 12 %). Drying should be done by harvesting the cobs when mature (25-35 % moisture content) and by drying them in an elevated crib, eventually protected from rain by a roof. The cisanza drying crib is a suitable structure for this purpose. Drying should not be done by leaving the plants in the field (further damage can occur) or by stooking plants together (danger of mould and cross-infestation).

Locally made solid-wall bins for improved small farm storage

As reported, most farmers use ventilated unplastered or partly plastered bins for storage of maize on the cobs. For the storage of shelled maize, the following local structures are feasible.

Cimumbwa Cabwaalo

This structure is known to many farmers in Gwembe Valley and still used in some areas. But some farmers have forgotten how to build it. From my observations these bins seem to have all the advantages a small farm maize bin should have:

- They are local structures,
- They are long-lasting (20 years reported),
- All materials are locally available, no cash involved,
- Easy to clean because of smooth surface,
- Keep grain cool and dry, since clay is a good insulator, (but have to be protected by a roof),
- Can be sealed to prevent insect-infestation,
- Allow admixture of insecticides or other materials,
- Eventually to a certain extent airtight.

Further investigations should be made to enquire the suitability of this bin for improved storage. The bin is however gradually disappearing, and reasons should be investigated (work involved in construction, skills required, disadvantages of the bin, social reasons for the change).

Kanbule grain bin

This bin is currently used only for sorghum, but it seems also to be suitable for storage of shelled maize. It has however to be strong enough, since shelled maize is heavier than cob maize or sorghum. Like in other solid-wall bins, the grain must be very dry. The bin should be plastered smoothly inside and outside and protected by a good roof. Raising the bin 1 metre above the ground and fixing metal-stripes makes it rodent-proof.

Apart from that, the Kanbule bin is very similar to the improved traditional bin recommended by F.C.S.U.

Improved solid-wall bins as recommended by Mount Makulu Research Station

These include an improved traditional bin (basket plastered and sealed with mud), a cement-plastered basket and the Ferrumbu (a structure made out of chicken wire plastered with cement). A full description of these structures can be obtained from F.C.S.U, Mt Makulu Research Station, P.B.7, Chilanga.

Use of insecticides

While shelling prevents serious damage to the grain through grain moths, weevils - which are another main factor of damage - cannot be controlled by this measure. Therefore the admixing of grain with an insecticide is recommended. Most insecticides used on grain kill the insects when they come in contact with the insecticides while moving between the grains. Insecticides are poisonous to insects and most of them also to humans.

The following table shows the toxicity of some insecticides to mammals: (8) (9)

	Acute Oral LD 50 Rats in mg/kg body weight	Ranges of residue tolerances in ppm at time of consumption in some countries
DIELDRIN	46	NIL
CINDANE	91	From 0 to 12.5
DDT	118	From 0 to 20
MALATHION	1.375	8/10
PYRETHRINS and PIPERONYLBUTOXIDE	{ Virtually non-toxic	{ From 1 to 25

LD 50 = Dose in mg per kg body weight to kill 50 % of a large population of rats.

Malathion

Malathion 1 % dust (known locally as Bluecross) is recommended by F.C.S.U. for treating shelled grain stored on farms in Zambia. Malathion is among the insecticides which are considered to be 'safe' and are allowed for direct admixing with grain in many countries. The acute lethal dose to mammals is relatively low compared to other insecticides. But since side effects and long-term effects are not known and tests are only with rats, there may still be some danger involved in the case of ingestion by humans. In addition, there is the danger of misuse by farmers. Since farmers in this region are not used to measurement, they may use wrong doses, wrong insecticides or admix the powder to the grain unevenly.

Bluecross (1 % Malathion dust) is supplied through NAMBoard or S.P.C.M.U. The price is 25 Ng for a 100g packet, which is used to treat 90 kg of shelled maize. Bluecross was, however, not available in Gwembe Valley through NAMBoard or S.P.C.M.U. Many farmers who have heard about the recommendations are willing to use Blue Cross, but it is often not available. Only a few farmers fear to use a 'medicine' that is poisonous to insects, because they fear it could also harm humans, e.g. affect fertility.

Pyrethrins

Pyrethrum is the only natural insecticide, obtained from the flowers of a plant, which is used on stored grain. It is said to be totally non-toxic to humans. The main constituents are called pyrethrins, whose effectiveness can be increased by adding piperonyl-butoxides to the formula. In addition to the toxicity to insects, pyrethrum has a repellent effect. Pyrethrins are very unstable when exposed to light, so that they should be used in sealed containers only. The main problem is, however, that pyrethrum is very expensive and difficult to obtain in Zambia. But because of its safety it should be considered for further research.

Other insecticides

It is reported that farmers use other insecticides like Lindane, DDT or any insecticide (e.g. cattle treatments) on grain and other foodstuffs. This shows the dangers of extensive supply of insecticides without proper information to small-scale farmers and has in any case to be discouraged.

Alternatives to the use of insecticides to protect grain

As has been discussed, the use of insecticides by small-scale farmers raises a number of problems:

- Additional cash is required;
- Insecticides are sometimes not available in remote areas and in some seasons not at the right time of the year;
- Most insecticides are dangerous to humans and long-term or side effects are not known;
- Farmers are not used to correct measurements and do not know dangers in using chemicals.

It is evident that farmers often use wrong types or amounts of insecticides.

- Insecticides with residual effects can break down during the storage period due to high temperature, humidity or others;
- There is increasing resistance of insects to synthetic insecticides and also the introduction of new synthetic insecticides becomes more and more a problem.

In Europe a reorientation of opinions with respect to the use of pesticides after years of excessive use has taken place. Also officials in developing countries seem to have started to realize the problems of uncontrolled, extensive supply of insecticides, often promoted by dumping methods of international companies (cf. Africa Magazine, December 1980).

Some of the insecticides sold freely in developing countries, like BHC or DDT, have been restricted or even banned for years in Europe, while in Zambia the use is reported directly on food like stored grain or fish.

It was also an interesting observation for me to note that the expatriates involved in development projects in Zambia were often the only people concerned about uncontrolled use of insecticides. Expatriates were also the people who were mainly reluctant to recommend the use of Malathion or any other insecticide directly on food grain.

While rodents and birds can rather easily be prevented physically (e.g. by fixing rodent baffles on the legs of a raised bin), this is not the case with insects. Despite the problems above-mentioned, it is difficult to control insects without insecticides.

Possible alternatives are:

a) Shelling the grain (esp. maize).

This prevents the movement of grain moths within the bulk of the grain. Damage by moths is therefore limited to the surface of the grain bulk. This measure can however not control weevils and other insects.

b) Using a sealed solid-wall bin.

Apart from other advantages (e.g. easy to clean), a sealed solid-wall bin can prevent further infestation of grain by insects physically.

In most cases, however, the grain is already infested at the time of harvest or during the drying period. When those eggs, larvae and adult insects find suitable conditions they develop and multiply very fast.

c) Airtight storage.

Insects need oxygen to survive. In an airtight storage bin, the insects use up the existing air and therefore die. But airtight

storage is expensive, needs managerial skill and is difficult to achieve on small-farm level.

d) Storage of local maize varieties.

Pure local varieties usually have a very hard grain (Flint maize) and a tight husk cover. Both these features are a protection against insects. If undamaged cobs with tight husk cover are selected for long-term storage and properly dried, this is a sufficient method of storage and there is not much need for change. This method is however not sufficient for improved varieties like the widely grown and stored SR 52.

Hybrid varieties like SR 52 have a much bigger cob than local varieties; but the husks of hybrid varieties are often too small to cover the whole cob, thus leaving the grain unprotected to insect attack. In addition, the grain of these varieties is very soft and very susceptible to attack by weevils and other primary pests.

Alternatives to the use of insecticides could be some traditional methods of grain protection.

Traditional methods of grain protection

A number of methods used traditionally by farmers are reported from different places. These include:

- a) Admixing of sand, local herbs, tobacco and wood ash is reported in Zambia.
- b) Use of tobacco dust is reported from the Central Region in Malawi and the use of wood ashes from burned bean stalks and finger millet chaff is reported from other regions of Malawi.

There has not been much interest in these methods until some years ago. But currently some experiments are undertaken in Zambia and Malawi to test the efficiency of these traditional methods.

In Zambia, the following trials are undertaken:

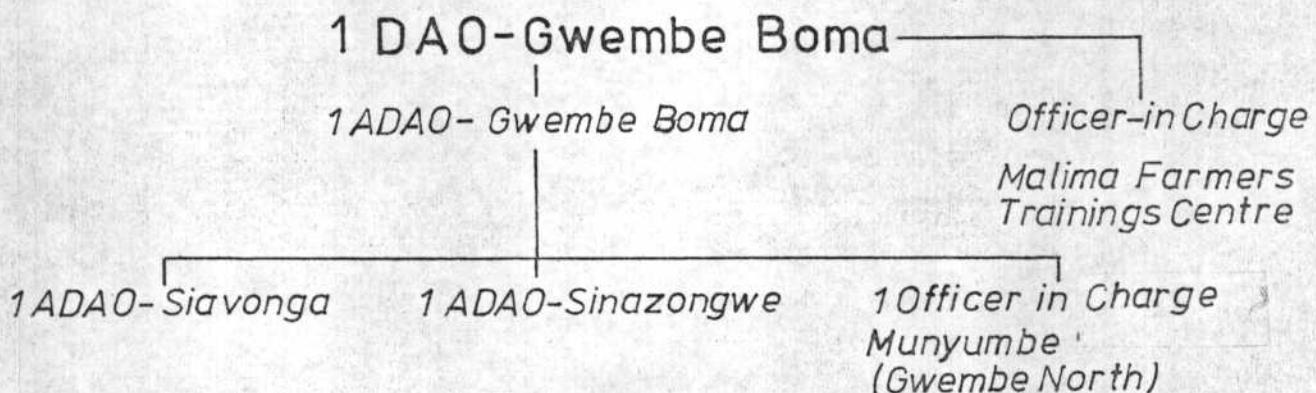
- a) Admixing wood ashes and sand to shelled maize,
- b) Storing maize on the cob in open cribs raised over a fire-place,
- c) Admixing tobacco to sorghum,
- d) Mixing beans and sorghum in oil.

In Malawi, similar work is done with sand, tobacco dust, wood ashes, lime. Other trials include the addition of different edible oils, paraffin and used engine oil to maize grain.

Especially in view of the steadily increasing problems related to insect-resistance against synthetic insecticides, some of these methods are more and more considered to be promising alternatives. Most of these additives act as physical barriers, so that resistance is not likely to occur. Tobacco may also have some toxic effect. Wood ashes and cowdung may have some repellent effect. The effect of local herbs has not been fully investigated yet and needs further research. Sand and wood ashes prevent the movement of the insects by filling the spaces between the grains. These materials can also scratch the cuticle of insects thus killing them through increased transpiration. The use of ash seems to be most promising and has already proved effective in practice. Admixture of wood ashes is included in the small-farm storage recommendations of extension branches in Botswana and Malawi. The recommended ratio is one 10-liter bucket of ashes from wood or cowdung for each 100 kg of grain (10).

6. Extension services in Gwembe Valley

Organisation of the extension branch of the Department of Agriculture in Gwembe District.



DAO = District Agricultural Officer ADAO = Assistant Agricultural Officer

Under each of the 2 ADAC's and the Officer-in-Charge in Gwembe North there are Agricultural Assistants and commodity demonstrators stationed at agricultural camps.

The DAO is directly responsible to the PAO in Choma.

The officer-in-charge for Malima FTC is also directly responsible to the PAO.

Staff

In 1978/79 the staff position for the Department of Agriculture was as follows:

DAO's office Gwembe Boma	12
Gwembe North	8
Gwembe Central	10
Gwembe South (including Malima FTC)	22

The staff in 1977/78 consisted of:

1 Principal Agricultural Supervisor
8 Senior Agricultural Assistants
10 Agricultural Assistants
12 Commodity Demonstrators

Courses for farmers are held at Malima FTC. Like in other FTC's the performance is hampered by the lack of funds for food and transport. In previous years courses were run with transport and funds provided by GSDP (Gwembe South Development Project). The extension staff is supposed to assist farmers and local institutions and organize field days.

Field days held in 1977/78:

Siavonga	1	-	attendance 506
Munyumbwe	2	-	attendance 333

Annual reports of PAO, DAO and extension branch state constantly that staff morale is high despite difficulties with transport and funds for maintenance and petrol, which affects the mobility of staff. Many farmers in Gwembe Valley complained however that they had never had any contact to extension workers, particularly in remote areas (e.g. parts of Satwinda area); but also on farms close to agricultural camps and offices of extension workers, farmers complained about lack of extension.

Extension work on grain storage

There has not yet been any organised work on food storage in the areas visited. The storage extension officer for Southern Province is located in Choma and has not been active in Gwembe Valley yet. Only one officer at Malima FTC was informed about recommendations of FCSU and little information on food storage is given at the end of some courses of the FTC. There is one cement-plastered brick-bin

(so-called 'Proctor-bin') built at Malima FTC. This bin is not water-tight and maize stored got rotten. This type of bin was once recommended by F.C.S.U. for improved storage on small farms. Technically it was not properly tested before being introduced to farmers and training institutions. Apart from technical problems, it appears to be very costly and far different from the structures common and known to the farmer. Cement is needed for this bin. The layout is square, while farmers are used to round structures. The roof is flat and made of cement and is, therefore, not easily water-tight. The metal outlet is costly and difficult to handle.

The bad experience with this bin shows that a good knowledge about the farmers' needs and resources is necessary before releasing any innovation. After introducing an innovation like this, it is also important to ensure follow-up and evaluation by extension workers. It does not seem, however, that efforts had been made to improve this bin after difficulties had appeared. Since this bin was developed under F.C.S.U., something should be done to repair the already existing bins, otherwise they will adversely affect further extension work.

7. Recommendations for further research and extension work

Grain storage course held at Malima F.T.C.

A course should be held at Malima F.T.C. to train extension workers and selected farmers from different areas in grain storage. The course should include the construction of different grain bins. This is to show different structures to the participants and to involve them in the construction. Once established at the F.T.C., the different structures can be used for further demonstrations.

The demonstration bins should consist of:

- 1 traditional open crib (Butala type)
- 1 traditional solid-wall bin (Cimumbwa Cabwaalo)
- 1 improved traditional bin (sealed Kanbule type)
- 1 Ferrumbu improved bin
- 1 cement-or mud-plastered basket bin.

The course should further include grain handling for the Gwembe Valley. It is important to teach the farmers the importance of drying maize for storage in solid-wall bins. Another important part should be selection and separate storage of seeds from local maize. This could help to keep the local varieties pure and to improve them by selection.

Demonstration bins are considered important because even those farmers who said they are interested in improved storage wanted first to see the way of construction and performance. The demonstration bins can also be used for further trials to show different storage methods to farmers.

The best time for the course would be March, since it is the period when farmers repair their stores and when they are less busy. Farmers who take part in the construction and the course can immediately adopt some improvements and spread them to neighbours and friends.

Extension work

The first need is to train extension workers on improved grain storage. In addition, there should be some supervision and link to research provided by F.C.S.U. The Lima Extension Programme should be more fully applied to make farmers more used to correct measurement. The necessary material (ropes, beakers, Lima brochures and extension material) should be made available. Brochures and teaching material should be in Tonga language.

Further research work

A programme to preserve and improve local 'Kaila' maize should be started. This programme could consist of

- Delegation of responsibilities, e.g. to G.S.D.P., Malima, F.T.C. or a new regional research project;

- Select areas for trial plots (e.g. Malima F.T.C.); good soils are also available at Siampondo, Kafwambila, Suluegonde;
- Agronomists to start collection of material, information and to plan the programme;
- Select pure Kaile seed (e.g. from remote areas);
- Improve local seed by teaching farmers the principles of seed selection, by selection of improved local seeds on trial plots or by cross-breeding with other composites.

APPENDIX 1: Production Figures (3)

Table 1.: MAIZE

	1971/72		1972/73		1976/77		1977/78		1978/79		1979/80	
	Total Sales	Local Sales (estimated) (Bags)	Total Sales	Local Sales (Bags)	Hectares planted	Sales Bags (3)	Harvest (Bags)	Sales (3)	Sales (Bags)	Sales (3)	Sales (Bags)	Sales (3)
Gwembe North	N.A.	N.A.	-		70.80	729	3,536	297	221		150	
Gwembe Central	N.A.	N.A.	-		189.09	12,308	7,025	760	327		100	
Gwembe South	N.A.	N.A.	-	600 (1)	119.0	9,918	6,618	2,002	461		108	
TOTAL	2,558	1,550	-	600 (1)		22,957	17,179	3,059	1,009		350	

(1) All sales by one farmer; (2) Sales by (estimated) 670 farmers, cultivated area 883,17 ha; (3) Sales in bags to NAMBoard.
N.A. = Not Available

Table 2.: SORGHUM

	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
Total for Gwembe District	Sales 82 bags	Production 902 bags	Sales 68 bags	Sales 84 bags

Table 3.: SUNFLOWER

	Figure for production = sales	1977/78	1978/79	1979/80
Gwembe North	50 kg bags	1,555	1,140	680
Gwembe Central	"	817	805	1,636
Gwembe South	"	3,432	7,214	6,704
TOTAL		5,904	8,159	9,020

Table 4.: COTTON

	1977/78			1978/79			1979/80		
	Growers	ha	Sales (kg)	Growers	ha	Sales (kg)	Sales (kg)		
Gwembe North	990	1,695	901,410	878	1,128	441,315	1,479,924		
Gwembe Central	896	888	389,436	796	769	819,864	1,169,834		
Gwembe South	883	679	503,568	484	455	948,942	1,746,208		
TOTAL			1,794,414			2,210,121	4,395,966		

Appendix 2

Data schedule used for interviews with farmers in Gwembe South

- Name of farmer, farmer's age
- Family size, number of wives
- Number of trained oxen and ploughs
- Other agricultural implements
- Observation on wealth, cattle etc.
- Hectarage cultivated with crops
- Hectarage cultivated with maize
- Labour force, hired labour
- Number of stores (observation)
- Type of bins (observation)
- Capacity of bins
- Quantity of maize stored
- Handling of grain (drying, shelling)
- Extent of losses (farmers' view)
- Extent of losses - own observation of insect damage

Footnotes, Sources:

- 1) For assessment of losses compare: Adams, I.M. and Harman, G.W.: The Evaluation of Losses in Maize Stored on a Selection of Small Farms in Zambia, Tropical Products Institute, G109, London, 1977.
- 2) Source: Ministry of Rural Development/ Gwembe South Development Project Planning Paper I: Dry-Land Farming and Rural Works Programme. Lusaka, February, 1975.
- 3) Sources: District Agricultural Officer, Gwembe District: Annual Report 1974/75, 1978/79 and 1979/80.
- 4) See: Marter, Alan and Honeybone, David: The Economic Resources of Rural Households and the Distribution of Agricultural Development. University of Zambia, Rural Development Studies Bureau, 1976.
- 5) German Development Institute (GDI): Report on the Development Possibilities of Gwembe South Region (Zambia), Berlin, 1973.
- 6) Source: All figures from: Department of Agriculture, District Agricultural Officer: Annual Reports for Gwembe District.
- 7) Reported in: Reynolds, B.: The Material Culture of the People of the Gwembe Valley. Kariba Studies, Manchester University Press, pages 230.
- 8) Hall, D.W.: Handling and Storage of Food Grains in Tropical and Subtropical Areas. FAO, Rome, 1970.
- 9) For further information on insecticides: Hubert Martin, Charles Worthing (Eds.), British Crop Protection Council: Pesticide Manual, 5th Edition, 1977.
- 10) Lindblad, Carl and Druben, Laurel: Small Farm Storage, Vol. III: Storage Methods, 1976, page 25.

Summary of the Evaluation Report on Gwembe South Development Project
by
Rudi Buntzel 1980

1. From March 21th 1980 to April 3rd I visited the GSDP to evaluate the work of the Project. The Evangelical Mission Board of Germany has asked for this report, since it was asked to give financial assistance to the GSDP.
2. The following questions served as the basic criteria for the evaluation of the Project:
 1. Are the project activities geared towards meeting the basic needs of the peoples? (basic needs)
 2. How far do the people participate in the planning and implementation of the project? (people's participation)
 3. What are the prospects of the activities of becoming independent of external financial and personnel support?
 4. Which impact did the project have on the social structure of the Valley Tongas?
 5. What can be said about the role of the German team?

3. Summary on the Basic-Need-Criteria

- Because there is no direct participation of the people in the decision-making process of the GSDP, expatriates are more or less deciding what is a basic need and what is not.
- The expatriate staff lacks awareness of the fact they should not be the ones to decide what is needed by the people.
- The situation will improve, as the schemes in which representatives of the people participate in the decision-making process (V.S.P., Credit Union, SPIS), are taking over more and more activities.
- Even if the actual programmes are more or less in line with basic needs, there is a definite threat, arising out of a lack of clarity, planning, control and awareness in the Project.
- The project has to be more sensitive and careful, when dealing with the people to prevent the motivation of self-help from being destroyed and a charity-approach of the people vis-à-vis the project from coming up.
- Tendencies to concentrate on individuals and groups which have proved to be open to change should be avoided. Instead of helping a few people to a really high position, more people should be enabled to improve their lot at least a bit.
- More emphasis should be given to the improvement of food-supply to the people, either by improving subsistence yields or by marketing and selling food products to the people.
- In general however it must be mentioned that the work of GSDP is really reaching down to the grassroots. There seems to be hardly any other project in Zambia that is so directly involved with the people.

4. Summary on the People's-Participation-Criteria

- Where possible, the GSDP has put the formal decision-making-power of the individual schemes into the hands of the participants. The 4 most important schemes are run solely by elected bodies of participants:
 - Siatwinda Pilot Irrigation Scheme (SPIS)
 - Siatwinda Credit Coop.
 - Nkandabwe Irrigation Scheme
 - Gwembe South Builders Coop. (GSB)
- The quality of the self-determination of the people in all schemes has still to be improved by better training of the office bearers, education of the members and more animation.
- What is totally lacking is a formal representation of the people in the decision-making process of the Project as a whole.

5. Summary to the Self-Sufficiency-Criteria

- The project is lacking a concept and plans for making the individual schemes independent of outside aid.
- What is needed is a consolidation-phase, which means that instead of
 - starting new activities
 - or extending old schemesall efforts have to be invested into identifying and overcoming bottlenecks on the way to self-sufficiency and independence.
- Concrete steps can be identified to prepare the self-sufficiency of the various schemes, like
 - recording of all services to the schemes;
 - drawing up training schemes for office bearers;
 - visit to the schemes only when called;
 - withdrawal of experts to a pure advisory-role.
- The marketing-question may be a real threat to the self-sufficiency of the irrigation-schemes.
- Independence of the Schemes means handing them over to the participants and making them own legal entities, preferable co-operatives.
- The Schemes, which are dependent upon a budget, should either be handed over to the respective governmental departments, once these have been prepared for the take over, or should be discontinued.

6. Summary on the Impact on Social Structures

- There is a very fast 'modernization' and 'commercialization' going in the Valley. The GSDP strengthens this tendency. It is hard to say which

changes are due to GSDP and which are due to a general development.

7. Summary on the Role of the Expatriate Team

- The concentration of and dependency upon academically trained expatriate manpower is much to high. A brand new concept on the role of the expatriate team, the recruitment of counterparts, the manpower-planning and training within the Project has to be applied.
- There are some critical points on the role of the expatriate-team that should be altered:
 - The "Gossner Service Team" as an institution of itself should be cancelled. There should be nothing else than the formal bodies of the GSDP. The expatriates shall become totally subordinated to the GSDP.
 - The power of the expatriates has more effectively be controlled.
 - To achieve this, a new decision-making structure has to be introduced.
 - Evaluation and more ability for self-criticism has structurally to be built- in by more effective control-mechanism.
 - The emphasis should be more on enabling-activities rather than carrying out trials.

8. Remarks to the General Concept of GSDP

- The original concept of the Project is still very viable: To mobilise the potential of the Valley, good planning and coordinated efforts by all governmental agencies is essential. The Agreement tried to achieve this by
 - providing for a Gwembe Valley Co-ordinating Committee
 - providing for the appointment a powerfull "Co-ordinating Officer"
 - strengthening this Co-ordination Officer by a team of expatriate experts.
- This concept failed, because the Co-ordinating Officer never got appointed. The function of the Committee was reduced for that of co-ordinating the work of all governmental bodies to guiding the GM-team allone. Instead of advicing governmental departments, the GM-team ended up in becoming operational itself.
- All efforts should be invested to return to the original goal of the agreement. The chances of getting that concept implemented have improved with the governmental attempts to decentralise planning.

9. Suggestion to a new Organisational Structure

- The present Gwembe South Development Committee should be replaced by a new committee, which can operate more effectively. This shall be achieved by
 - reducing the membership to a workable size (not more than 10 members);
 - appointing representatives of the different Schemes to the GSDC;
 - getting the Committee really involved into the decision-making process of the Project by the Secretariat;

- Besides the and the the
 - GSDC
 - Staff Meeting I still propose a third institution
 - Secretariat.
- The Secretariat should consist of
 - the Project Administrator
 - the Project Secretary
 - the Planner.

The function of the Secretariat would be to prepare the meetings of the GSDC and to make sure that the decisions of the Committee are being implemented by the Staff. The Secretariat shall have a certain authority over the Staff. The Staff-Meeting will loose all it's power; it will only have to function in order to coordinate the practical work, carried out within the limits of the decisions taken by the Committee.

- A Planner should be appointed to the Project, who should be stationed either in Choma with the PAO's office or in Gwembe with the District. The Planner should concentrate on the GSDP, while he should also give some planning-help to District set-up.

10. Remarks to the General Agricultural Approach

- The focus of the Project is on irrigation farming; the Dry Land Farming-activities are secondary.
- The heavy emphasis on irrigation-farming can be critisized because
 - the economic performance of the irrigation schemes is not very good;
 - only a very small fraction of the population can ever benefit from irrigation farming;
 - the irrigation-schemes are very dependent upon vegetable-markets and the provision of modern inputs; thus they are vulnarable as well;
 - the trickle-down effects are weak;
- Some kind of balance between irrigation and Dry Land Farming has to be maintained. The involvement in both fields must be complimentary to each other. They must be integrated into a common agricultural strategy for the whole of the Valley. All this is not the case.

11. In spite of the high organisational standard of Siatwinda Pilot Irrigation Scheme, the economics of the scheme are not very satisfactory. The economic feasibility of irrigation is very sensitive to many complicating factors, which cannot be controled easily. One factor is the conflict between Dry Land Farming and irrigation farming over manpower in certain seasons. Instead of giving each member of the Scheme enough irrigation land to shift to a full-time irrigation-farmer, I advise to restrict the acreage to 0.1 - 0.2. ha of irrigated land. I suggest an agricultural strategy, in which the irrigated plots only serve as a kind of insurance against famine and to satisfy some cash-needs, while the emphasis should be placed on improving the situation of the Dry Land Farming. I don't favor the idea of expanding the irrigated area in Siatwinda.

12. Farming should focus on the following major problems:
 - To find some legumes and some more dry-resistant maize-seed, which can be grown in rotation with cotton and which gets accepted by the people.
 - To check the growth of cotton so that a balance between food-crops and cash-crops can be maintained.
 - To take care that not all the grain gets sold and marketing out the Valley.

The introduction of soya-beans might be a very good attempt to solve the most urgent problems. It should get more attention in the Project.
13. Because the HYV-maize has failed to give returns, the whole Dry Land Farming-Programme has failed and should discontinued.
14. The same is true to the Rural Works Programmes. GSDP can help the Rural Council to design a RWP, but the Project should not run it any more itself.
15. Buleya Malima is a big threat to the success of the whole Project. The area utilised has drastically to be reduced, otherwise there is no chance of the farmers to run it themselves. How it can be reduced and how to go about has still to be looked into.
16. The Valley Self-Help Promotion Fund is a very good idea. It should be developed to more than an instrument of the Project. People and institutions from the Valley should much more be inspired to use V.S.P. as a Credit institution for funding self-help activities.
17. The Workshop should start to record the different services rendered to the various Schemes. It should very systematically train people for taking over these services and release them to the Schemes or help them settle down as independent craftsmen. The started project on intermediate technology will not have any future.

I. Vertragsverlängerung

Ende 1981 ist der Vertrag mit der zambischen Regierung ausgelaufen. Im Januar (alleine) und im Juli/August (zusammen mit Ehepaar Schröder) bin ich nach Zambia gereist. Die meiste Zeit war mit intensiven Verhandlungen über den Vertrag ausgefüllt. Das Ministerium wollte ihn in bisheriger Form nicht mehr automatisch verlängern, wie es noch Mitte 1981 bei Gesprächen vereinbart worden war, sondern neu formulieren und den veränderten Bedingungen anpassen. Für mich überraschend wurde vor allem von uns eine Begründung für unsere weitere Kooperation mit der zambischen Regierung erbeten. Offensichtlich wußten die meisten Mitglieder des zuständigen Parlamentsausschusses nichts mehr über die Ursprünge und Geschichte der Mitarbeit der Gossner Mission im Gwembe South Development Project (GSDP). Im August haben wir uns dann in allen wesentlichen Punkten geeinigt und den neuen Vertrag formuliert.

- Das Selbstverständnis der Gossner Mission ist im Artikel I ausführlicher dargelegt, wonach unser Engagement in einem ganzheitlichen Sinne beschrieben wird.
- Es wird festgehalten, daß die Projektarbeit basisorientiert bleibt und die bewährte demokratische Arbeitsweise des Stabes beibehalten wird.
- Das GSDP wird in "IRDP-Gwembe Valley" (IRDP = Integrated Rural Development Project) umbenannt; dies bedeutet, daß das Projekt als IRDP geführt wird, und in Zukunft mit Zuschüssen von IRDP rechnen kann.

Gegen diese Integration in die IRDP-Struktur haben unsere Mitarbeiter (GST) erhebliche Bedenken vorgebracht. Die Strategie des Landwirtschaftsministeriums verfolgt zwar, in allen Provinzen IRDPs aufzubauen, die von einer zentralen Stelle im Ministerium koordiniert werden, die IRDP-Koordination wird aber weiterhin von schwedischen Organisationen kontrolliert und beeinflußt. Die Befürchtungen des GST sind nicht ganz von der Hand zu weisen, daß durch die Umwandlung des GSDP in ein IRDP-Gwembe Valley die Projektarbeit weniger unter zambische Aufsicht und Kontrolle gerät, was wünschenswert ist, sondern verstärkt fremdgesteuert werden kann, worauf wir nur geringen Einfluß haben. Die weitere Entwicklung muß darum sehr sorgfältig beobachtet werden, daß die Prinzipien, die wir verfolgen und die bisher Grundlage unserer Mitarbeit gewesen waren, auch weiterhin gelten. Dazu gehören vor allem, daß soviel Verantwortung wie möglich an Tongas abgetreten wird; daß der Aufwand gering bleibt, um keine falschen Erwartungen zu produzieren; daß wir uns ohne Hektik auf längerfristige Zeiträume einstellen und die religiösen und kulturellen Werte stärker berücksichtigen; daß nicht falsche Organisationsstrukturen aufgebaut werden, die dann nur mit fremder Hilfe aufrechterhalten werden können.

- Es ist auch vereinbart worden, daß das Projekt in die lokale Verwaltungsstruktur integriert wird. Im Zuge einer nationalen Dezentralisierung sind die Bezirksparlamente (District Councils) von der Regierung aufgewertet und mit mehr Entscheidungskompetenzen ausgestattet worden. In Zukunft ist für die Entwicklungsplanung und -durchführung einer Region der District Council zuständig. Das gilt auch für die Verabschiedung des Projekthaushaltes.

- Wir haben uns einverstanden erklärt, daß die Gossner Mission zusätzlich einen Planer und Koordinator entsendet, der zunächst auch die Aufgabe des Projekt-Koordinators im engeren Sinne übernehmen soll, bis ein geeigneter Zambianer gefunden wird. Für diese Aufgabe ist Klaus Schäfer vom Verwaltungsausschuß eingestellt worden. Auch gegen diese Entscheidung hat das Team grundsätzliche Bedenken erhoben, weil es befürchtet, daß dadurch der Prozeß der Zambianisierung gestoppt und auf Jahre hinaus abgeblockt wird. Obwohl auch ich diese Bedenken teile, sehe ich keine Alternativlösung, wie die seit Jahren anhaltende Führungsschwäche des Projekts überwunden werden kann.
- Der Vertrag sieht ausdrücklich vor, daß das GST einen "Teamleader" hat, der für die zambischen Behörden Ansprechpartner ist und zugleich die Gossner Mission in der Region repräsentiert. Damit ist die Entscheidung des Teams vom November 1981, den Teamleader durch einen "Team-Secretary" zu ersetzen, offiziell rückgängig gemacht worden.
- Die Erstattung des Kilometergeldes für unsere Mitarbeiter bleibt wie bisher geregelt. Allerdings geht das Ministerium davon aus, daß diese Gelder vom IRDP kommen. Faktisch ist es aber so gelaufen, daß die Gossner Mission 1982 die Kosten für den Transport unserer Mitarbeiter übernehmen mußte. IRDP argumentierte, daß man nichts machen könne, solange der Vertrag nicht unterschrieben sei. Obwohl der Vertrag - wie gesagt - unterschriftsreif formuliert worden ist, ist er aus für mich nicht erklärbaren Gründen bisher von der zambischen Regierung noch nicht unterschrieben worden.

II. Personalwechsel

Familie Jähn und Familie Fischer sind im Frühjahr aus dem Dienst der Gossner Mission ausgeschieden und in die Bundesrepublik zurückgekehrt. Für H.-M. Fischer wurde Sietske Krisifoe als Liaison Officer neu eingestellt. Als Nachfolger von Klaus Jähn wurde das Pfarrerehepaar Stroh-van Vliet/van Vliet gewählt. Die Ausreise fand aber erst 1983 statt.

III. Projektarbeit

Die EG bewilligte Mitte des Jahres die von uns beantragten Mittel zur Kofinanzierung neuer Projektvorhaben für den Zeitraum 1982-1984. Die erste Rate von DM 290.000,-- wurde im 4. Quartal ausgezahlt. Damit konnte mit der geplanten Ausweitung des Bewässerungsprojektes in Siatwiinda begonnen werden und mit der zusätzlichen Instandsetzung des Bewässerungsprojektes in Buleya Malima.

Der Vorschuß der Gossner Mission an die Gwembe South Builders von 1981 in Höhe von DM 40.000,-- der zur Sanierung und Kapitalbildung der Baugenossenschaft bewilligt worden war, konnte von den EG-Mitteln wieder zurückgezahlt werden.

Mit dem Lima-Programm wurde begonnen. Im Zeitraum von 3 Jahren sollen alle Dörfer der Gwembe-Süd Region systematisch besucht und im Regenfeldbau beraten werden.

Die anderen Programme wie Genossenschaftsberatung, Frauen- und Gemeinwesenarbeit, Werkstatt und VSP sind weitergeführt und z.Z. intensiviert worden.

Im Team hat die Diskussion um einen möglichen Rückzug des GST aus der Projektarbeit in 1983/1984, die vor allem 1981 sehr intensiv geführt worden ist, kaum mehr eine Rolle gespielt. Es ist deutlich geworden, daß die eigentliche Aufgabe erst noch vor uns liegt, nachdem die Gwembe-Region durch den Befreiungskrieg im Nachbarland Zimbabwe lange Zeit vernachlässigt worden ist. Allerdings wird es in Zukunft darauf ankommen, daß verstärkt Zambianer so ausgebildet und geschult werden, daß sie Aufgaben übernehmen können, die zur Zeit noch von Teammitgliedern verantwortet werden. Eine Reduzierung unserer Mitarbeiterzahl ist nicht nur wünschenswert, sondern sollte auch möglich werden.

IV. Besuch von Colson/Scudder

Im Frühjahr besuchten die beiden Anthropologen Frau Colson und Herr Scudder aus den USA für mehrere Wochen das Projektgebiet. Anschließend verfaßten sie einen ausführlichen Bericht über ihre Beobachtungen, der im Projektstab und später auch im Ministerium diskutiert worden ist. Er enthält zum Teil detaillierte Vorschläge für die zukünftige Planung und Arbeit. Die beiden Wissenschaftler haben seit Jahrzehnten die Tonga-Gesellschaft erforscht und beobachtet und kennen wie keine dritte Person die Struktur, die Geschichte und den Wandel innerhalb dieser Gesellschaft. Darum ist ihr Bericht für uns besonders wertvoll und wird mit Sicherheit die weitere Planung beeinflussen.

V. Das Verhältnis zur Vereinigten Kirche von Zambia (UCZ)

Die UCZ hatte uns gebeten, daß wir einen Theologen für die TEEZ-Koordination und einen Agraringenieur für den Wiederaufbau der landwirtschaftlichen Ausbildungsstätte in Nambala entsenden. Daraus ist nichts geworden. Für die TEEZ-Arbeit ist ein amerikanischer Theologe gewonnen worden. Für die landwirtschaftliche Lehrwerkstatt hat die Kirche zunächst eine zambische Lösung gefunden.

Durch die Mithilfe einer Dortmunder Gemeinde haben wir der UCZ eine Lautsprecheranlage für die neue St.-Paul's Kirche in Lusaka stiften können. Diese Kirche soll zugleich das Versammlungszentrum der UCZ werden.

Erhard Mische

7. 1982

THE GWEMBE SOUTH DEVELOPMENT PROJECT

T. Scudder
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May, 1982

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THE GWEMBE SOUTH DEVELOPMENT PROJECT

INTRODUCTION

In November, 1981 staff members of the Gwembe South Development Project (GSDP) were preparing to report to the District Council the Zambian Government and the Gossner Mission upon the first ten years of the project's existence. They saw the possibility of using the local expertise gained during our twenty-five years of studying the social and economic development of Gwembe District and its people. They asked that we look at what the GSDP had done in Gwembe South and suggest possible ways for contributing to its future development. We agreed to do the evaluation, with the understanding that development in Gwembe South be placed in the context of what has happened elsewhere in Gwembe. Gwembe South is evolving into a District, but many of its environmental and institutional conditions are shared with Gwembe North and Central. Many of the problems faced, indeed, exist on a regional basis and are common to the whole central Zambezi basin. Roads, rural electrification and lake transport, for example, need be planned and implemented for Gwembe District as a whole, while tsetse control requires regional cooperation with Zimbabwe.

This report, it is hoped, will be of use to the Gwembe South Development Project, to the District Council which must plan for all of Gwembe, and others concerned with rural development.

Section I and II, which follow immediately, are background information the reader may wish to turn immediately to sections III and IV where we discuss what is being done and what needs to be done.

I. PROCEDURES

In preparing this report, we draw upon our knowledge of Gwembe, acquired over the time span 1956-1982. During this period Gwembe District has been visited by one or more members of our team in the following years: 1956, 1957, 1960, 1962, 1965, 1967, 1968, 1970, 1972, 1973, 1976, 1978, 1981, and 1982. During this period we have:-

(1) Followed the demographic, social and economic histories of four villages, two in Gwembe North, one in Gwembe Central, and one in Gwembe South; (2) followed the careers of selected men and women to learn how Gwembe men and women respond to opportunities and challenges; (3) collected information on the spread of educational facilities and other government services; (4) recorded the histories of various efforts to bring about faster development through the use of national resources and international aid especially in connection with crop agriculture, animal husbandry and fisheries.

Against this background we assess the information gathered during our intensive study of the Gwembe South Dev. Project (GSDP) during the month of April, 1982.

In this we had full co-operation from staff members. They permitted us to attend staff meetings, made their records available to us, and made themselves available for interviews about what had been done, what should have been done, what could not be done and why, and what might be done in the future. We examined various programmes instituted by GSDP: the three irrigation schemes at Nkandabbwe, Buleya-Malima, and Siatwiinda; female extension work; the various enterprises that fall now under the Valley Selfhelp Promotion Fund; the building programme of the Gwembe South Builders. We did not examine the church-related work of the Project and cannot assess how successful this has been. We also interviewed villagers, emergent farmers, fishermen, businessmen, officers of Farmers Associations and Credit Unions, and officials living in Gwembe South, to learn what they saw as the main developmental problems, and how they saw the Gwembe South Development Project as furthering advancement.

Here we emphasize that any evaluation report must look at work done or planned against the physical conditions and environmental assets of the region within which the work must be done, the availability of external resources, the national environment, and, most importantly, the interest and willingness of local people to spend their limited capital and energy in the hope of acquiring better lives for themselves and their children. The Gwembe people have always had to deal with a harsh environment and high transportation costs. In the last twenty five years they have also suffered from the disruptions caused by a forced resettlement and more recently the ravages of war. Under such conditions it is no easy task to implement a development programme with a built-in momentum for growth. Too often growth has been halted by need to use resources to offset serious shortfalls or because outside forces disrupted the local economy. We emphasize that the Gwembe South Development Project cannot be said to have had ten years in which to prove itself. During much of this time, little could be done for reasons beyond its control.

II. SPECIAL FACTORS TO BE KEPT IN MIND

A. War and Resettlement:

Twice in the last twenty five years the Gwembe people have suffered heavy capital losses brought upon them by decisions made in the national interest. First, to build Kariba dam, which flooded much of their territory and deprived them of their best soils. Secondly in the effort to obtain independence for Zimbabwe. Some attempt was made to offset the losses associated with the building of Kariba Dam and the inundation of Lake Kariba, both now regarded as national assets. These efforts included the building of new roads, clinics and schools; the provision of water supplies; and the spread of agricultural, veterinary and fisheries extension services. Many of these gains, however, were wiped out between 1975 and 1980 when Gwembe suffered from Rhodesian raids. Its roads, culverts and bridges were destroyed by land mines or allowed to deteriorate. Its fishing boats were sunk or became derelict along with the lake transport system. Tsetse control was largely given up with consequent loss of livestock including plough oxen.

Schools were abandoned. Technical staff became reluctant to go into a war zone. In 1980, Gwembe South, along with the rest of Gwembe, had less infrastructure with which to work than it had in 1970 when the Gossner Mission first planned for its development or in 1972 when the GSDP came into existence.

During the war years, the programmes of the GSDP suffered along with the rest of Gwembe through the inability of its staff to reach many of the villages where work had been started and necessary materials could not be supplied due to national shortages and transportation difficulties. During these years the GSDP was essentially a holding operation, with little chance to expand its work or to consolidate programmes as planned. Kafwambila irrigation scheme was one casualty of the war. One could also see the Rural Works/Drylands Farming Programme, begun with great expectations in 1976, as another such casualty. Between 1980 and the present, it can be argued that the GSDP remains a holding operation, though to a lesser extent, because of a serious shortage of funds for both capital and recurrent expenditures.

That the GSDP has been able to develop two irrigation projects, to the stage where farmers can take over the operation is a major achievement under these circumstances. So is the Tonga Crafts Programme, which has been the only source of cash income for some hard pressed areas. So also is the fostering of community self-help programmes.

Gwembe South, however, emerged from the war years to face a very different developmental climate than the one which existed when the GSDP was founded. The GSDP was initially based upon an understanding that the Zambian Government was able and willing to finance programmes of development and that the need was for expatriate advisers rather than for capital and recurrent funding of projects. This is no longer the case. The Zambian Government too has been stripped of resources by the war and finds it difficult to finance new programmes requiring capital inputs or even to provide the funds to continue existing programmes.

The fact remains that outside help is needed. There is now no way for Gwembe South to meet its own needs and contribute to national growth unless it can have access to resources to offset its losses in infrastructure and personal capital. Under these circumstances the need for financial assistance from the Gossner Mission is greater than at any time in the past. (from the)

B. Need for Special Funding

Any economic growth large enough to provide for the rapidly increasing population (and the growth rate is very high), requires major inputs:

- 1) for electrification, on which the extension of irrigation and the growth of local industries depend, 2) for road building and lake transport and 3) for the re-establishment of the fisheries. Gwembe Tonga were forced from their homes and their fields in 1958 so that Zambia could have electricity, yet none of this electricity is available in Gwembe aside from some electrification in the Chirundu and Siavonga areas in Gwembe North and at Maamba in Gwembe South.

The pylons march across the Valley carrying electricity to the cities and firms of the railway belt. The electricity is there, but it is not there for the people of Gwembe. Probably in no other region of Zambia would a rural electrification programme be as simple to implement or have as immediate an impact. Lake Kariba is a vast water reservoir, but only in two areas of Gwembe North is water piped to villages. Its potential for irrigation goes largely untapped. Without electricity and with present price of diesel fuel the cost of using the lake for irrigation and village water supplies, is prohibitive.

If the Zambian Government cannot supply the funding necessary for electrification, roads and lake transport, then further development of Gwembe depends upon access to funding from international sources. The GSDP as presently constituted does not meet these needs of Gwembe South. Instead it has seen the curtailment of its original plans as funding has been cut. In its present form it has little future unless the Gossner Mission is prepared to fund programmes as well as staff, or the Zambian Government is prepared to increase substantially its contribution to capital programmes initiated through the District Council, or the GSDP becomes an IRDP through which international funds can be channelled to the District. If it has funding for little more than the salaries of staff, as appears now to be the case whether these are paid by the Gossner Mission or by the Zambian Government, it becomes one more centre of demoralization, of which Zambia now has only too many.

C. Local Response to Opportunity.

The people of Gwembe in the past have taken advantage of the opportunities available to them. The present state of the District including Gwembe South, is not due to a reluctance on their part to innovate. Without a knowledge of what has happened in the past, it is only too easy to think that conditions existing at any one period of time are traditional, rather than current responses to perceived risks and possibilities. In the past twenty five years, Gwembe men quickly took up fishing in the early and mid 1960s, when profits were high and credit was available for boats and nets. They dropped out later in the 1960s when profits fell. Gwembe people invested in cattle as soon as tsetse control made this possible in the late 1950s and early 1960s and shifted from hoe cultivation to ox ploughing. They have experimented with various kinds of grain crops. In the 1970s they became major producers of cotton and sunflower. They keep a close eye on prices and yields. They respond quickly to price incentives and to new possibilities, and they invest in new equipment as well as in education for their children and in such enterprises as stores and transport.

Their interest in innovation is somewhat masked by the fact that they are as cost conscious as they are and so ignore suggestions that promise no immediate profit. Also they have learned from experience that a diversified production system serves them best.