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Economic Development Potential Study East Bank Eastern Equatoria Sudan

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East Bank Eastern Equatoria Sudan

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GLOSSARY

ABTP	Appropriate Building Technology Programme
AC	Area Council
ACROSS	African Committee for the Rehabilitation of Southern Sudan
ATTI	Arapi Teachers Training Institute
CDC	Commonwealth Development Corporation (UK)
DEMATT	Development of Malawi's Traders Trust
DANIDA	Danish International Development Agency
EBEE	East Bank Eastern Equatoria
ECS	Episcopal Church of Sudan
EDC	Equatoria Development Corporation
EEC	European Economic Commission
EMCC	Equatoria Materials and Construction Company
ERAP	Equatoria Region Agricultural Project (ODA)
FCT	Flue-cured tobacco
HTS	Hunting Technical Services Limited UK
IACOD	International Agency for Cooperation in Development
ILO	International Labour Organisation
ITC	Intermediate Technology Consultants Ltd. UK
ITDG	Intermediate Technology Development Group Ltd. UK
LIS	Local Initiative Support Programme
£S	Sudanese pound

MTC	Multiservice Training Centre, Juba
MTD	Motor Transport Department
NAD	Norwegian Association for the Disabled
NEC	National Electricity Corporation
NCA/SP	Norwegian Church Aid - Sudan Programme
NTC	National Tobacco Company
ODA	Overseas Development Administration, UK
PDU	Project Development Unit (now ERAP)
PMRA	Project Management for Refugee Affairs
PRC	People's Rural Council
RATC	Regional Accountancy Training College
RDC	Rural Development Centre
RIIC	Rural Industries Innovation Centre, Botswana
SCC	Sudan Council of Churches
SSRAP	Southern Sudan Refugee Assistance Programme
t	tonne
TABU	Technology and Business Unit
TCC	Technology Consultancy Centre, Ghana
TDCU	Torit District Cooperative Unit
TDRI	Tropical Development and Research Institute, UK
TISG	Technological and Industrial Studies Group

UNCTAD	United Nations Congress on Trade and Development
UNDP	United Nations Development Programme
UNHCR	United Nations High Commission for Refugees
UNIDO	United Nations Industrial Development Organisation
UTTP	Upper Talanga Tea Project
VSG	Voluntary Service Group
VSO	Voluntary Services Overseas (UK)
VITA	Volunteers in Asia
VTU	Village Technology Unit
WFP	World Food Programme

EXCHANGE RATES (late 1985)

£S 1 = Norwegian Kroner 2.5

£S 1 = US$ 0.31

£S 1 = £Sterling 0.21

£S 1 = Kenya shillings 5.0

Other conversions

1 feddan = 0.420 ha (1.037 acre)

SUMMARY

1. PRESENT SITUATION

Whilst East Bank Equatoria has more than its fair share of problems it is by no means one of the poorest places in the world.

Its problems have resulted from, amongst other things, its unfortunate position in the colonial period, the vast distances to sea ports and external markets, the traditional enmity existing between some of the ethnic groups populating the Study Area and the long history of neglect by central Government.

As a consequence of these and other problems, the area is very undeveloped with approximately 90 per cent of its 500,000 people living from smallholder agriculture and 10 per cent from paid employment and non-agricultural self-employment. It is probable that around 85-90 per cent live at subsistence level. With some exceptions, the standard of services is poor; health services are appalling, only about 12 per cent of children attend primary school, the major roads are in very poor condition and the law-and-order situation is not fully under control. On the positive side, there are now over 600 potentially operational wells (mainly boreholes), agricultural and cooperative extension and support services are reasonably well-developed and the feeder road network is in tolerable condition. Local government is incapable of raising sufficient revenue to provide the regional services and central government support is totally inadequate to make good the shortfall. The people, for their part, contribute little towards the local or national exchequers. Private sector involvement in non-agricultural activities is minimal and is confined almost exclusively to retailing, transport and small-scale manufacturing by blacksmiths, carpenters, potters and other artisans.

Despite this somewhat gloomy overview of the present situation, there are a number of factors which lead to the conviction that conditions could be improved substantially. (Any optimism expressed assumes that the present political crisis will be resolved in the near future, without major disruption).

From a natural resource viewpoint, the climate is reasonably favourable for agricultural production, except in the east, and there is vacant land with adequate soils. In the Imatong mountains there are substantial forest reserves already being exploited in a rational manner and nearby, at Upper Talanga, a tea estate with excellent development prospects is

being established. During the past few years farmers in the west have started to grow an agricultural surplus, in addition to the longer-established coffee and tobacco trade. With the rapid growth of interest in the use of draft power, this trend is likely to continue. (Unfortunately for the Study Area, agricultural production levels are increasing throughout Equatoria and because of the locational constraints, competition between suppliers of traditional agricultural commodities, maize, sorghum and cassava, will intensify in the near future, as there are limited markets locally). Cooperative participation in the marketing of agricultural produce, in addition to its retailing and grain milling functions, is playing an important part in the development of agriculture in the west.

Elsewhere agricultural improvements have not been as dramatic; given the poor state of development in much of the centre and east, however, the few improvements which have been made are particularly welcome.

Outside agriculture there are few signs of any significant change, except with regard to the pattern of ownership of retail business in certain locations. Traditionally, non-southerners have controlled retail trade, but in recent years southerners have virtually taken over in the Madi, Acholi and Ikotos areas. Elsewhere the pattern is generally unchanged. Whilst such a change is unlikely to have much effect on the range of commodities sold or the prices charged, it is, nevertheless, very significant. Non-southern traders remit their profits to the north, draining the south of resources which could have been invested locally. Southern traders, on the other hand, seek opportunities to invest and diversify their business interests within the region. In the same context, cooperative societies are also generating surpluses and are already planning to utilise these resources productively, rather than leaving them lying idly with the TDCU. There are few indications that the Area Councils or People's Rural Councils are making any positive steps towards the improvement of local services. The proposals put forward by the 'Acholi Community' to place their Rural Council on a sounder financial footing are very welcome. The Pageri People's Rural Council has recently been formed, and this offers the possibility of creating a reasonably viable organisation from its outset.

Although Government support for the area is minimal, almost entirely channelled through the salaries paid to around 6,000 employees, substantial funding has been provided by NCA/NORAD, UNHCR, EEC, USAID, ODA and other smaller agencies, such as VSG, the Sudan Council of Churches and the Catholic Church.

NCA has been the main agency involved, and has played a part in most aspects of development. It has been almost entirely responsible for feeder road development, water supply, agricultural extension and research, and cooperative development. All of these activities have been substantial and wide-reaching. Involvement in education and health (outside the refugee areas), though significant, has not been heavy and, consequently, these sectors remain very poorly developed. Other relevant activities include training (at all levels from day courses for farmers to post-graduate courses), technology development (particularly ox-carts), family life development and the establishment of a credit programme (LIS).

Although mostly located outside the Study Area there are a number of training institutions whose facilities are available to Equatorians and others. Many of these are of direct relevance to the development needs of the area.

2. DEVELOPMENT PROBLEMS AND PROSPECTS

The main problems hindering economic growth have already been mentioned; in many cases there is little that an agency such as NCA can do on its own to alleviate the situation. It is, for instance, impossible for NCA to have much influence over the security problem, whether it stems from within or outside the Study Area. It is unlikely, though not inconceivable, that NCA could influence central Government to give Equatoria a larger share of the national budget. There is little that can be done to overcome the high costs of transporting goods in and out of the area to/from north Sudan or Kenya. Despite these limitations there are a range of lower-level problems and bottlenecks which stultify economic growth where NCA and other agencies, with the active participation of the people and support from local and regional government, could assist.

It must be appreciated that most of these problems affect Equatoria and the south generally; in finding and implementing solutions, whilst it is entirely acceptable that the target beneficiaries are the people of the Study Area, it is important to keep in mind the overall needs of Equatoria. Unfortunately, regional Government is so weak in terms of planning capability and its ability to participate in development that it is rarely in a position to formulate regional strategies or to assist NCA in the preparation of its own policies. The creation recently of an NGO coordinating body within Government is a welcome move, but

it is unlikely to have any significant impact in the near future, unless it is supported from outside. The responsibility to implement policies which are acceptable to all people of the region and which do not conflict with or duplicate developments elsewhere thus falls heavily on NCA's shoulders.

The availability of food is the key issue in the south and in the Study Area, and despite the closure of the Nile which has cut off the traditional source of food grains, there have been no recent serious food shortages. Imported relief supplies for both local people and refugees and uncontrolled movements from Zaire and Uganda have played a part, but the general impression is that productivity levels in both East and West Bank Equatoria have been increasing.

Agricultural production must be the basis for which the local economy will develop in the future. Potential bottlenecks to producing and the marketing of surplus produce include the following:-

(a) A shortage of good land in areas of reasonable rainfall;

(b) Constraints on the ability of farmers to maximise their crop areas because of labour shortages/lack of draft power or in the case of refugees, limitations on plot size;

(c) A fall in the demand for the crops being produced, resulting in lower prices;

(d) Marketing, storage and transport problems.

3. RECOMMENDATIONS

NCA has concerned itself with many of these problems but some require further attention, as follows:-

- Land capapbility requires a detailed survey, both in western areas where additional land is in constant demand and in the central area where there is the likelihood that farmers are not utilising the best areas.
- If and when the political situation in both Sudan and Uganda calms down and the refugees have made up their

be well suited to the needs of the area. Progress within the movement does, however, appear to be somewhat impeded by procedural regulations of its own making, by the low level of business expertise of both society and TDCU staff and the viability of the TDCU to formulate and operate efficiently a simple and effective accounting system. It is recommended that at least one expatriate (preferably from an organisation other than NCA) is made available to the TDCU to sort out and run the accounts and possibly to assist in providing it with business skills. With regard to the Cooperative Project it is imperative that any expatriate adviser appointed should be fully conversant with cooperative philosophy and practice. It is believed that this has not always been the case in the past.

The Consultants believe that NCA should, in the absence of Government being able to provide sufficient funds, become much more heavily involved in education. Present standards are poor and this must be one of the major bottlenecks to economic growth. Participation in adult literacy classes should also be considered.

Women's development has recently become an important issue, although there are few encouraging signs that anything very significant will happen in the near future. Unless better qualified staff are provided and an effort is made to place the Family Life programme on a firmer footing only ad hoc improvements in women's development can be anticipated.

NCA is proposing to transmit hydro-power from Katire to Kilieu and Torit. The Consultants are unable to justify such a proposal on financial or foreign exchange savings terms and would recommend that, unless new information comes to light, the proposal is shelved.

The Consultants are of the opinion that many of the refugees living in the Madi area will return to Uganda as soon as conditions allow. A number would wish to stay, if they were given the opportunity to expand their holdings, and if education and health services and the security situation remains at a reasonable level. The main advantage of the refugees remaining in Sudan would be their positive contribution to surplus food production. Whilst some of the refugees would contribute towards the development of other economic activities, it does not appear that the refugees' abilities differ significantly from those of the indigenous people.

The main problems which place constraints on this natural step are the absence of banking facilities at the local level, and of formal and informal credit (except LIS), the lack of entrepreneurial and technical expertise amongst southerners, a lack of awareness of the most suitable technology, the difficulties in obtaining inputs, particularly if they have to be imported, bureaucratic barriers and, possibly, obstruction by parties who do not wish to face competition.

NCA has been involved to some extent in several of these problems, more particularly with the LIS programme, appropriate technology development, the supply of fuel, spare parts, building materials and equipment, and artisanal training. Whilst all of these have had some individual beneficial effect on the economy, the impact has not been as marked as it could have been had there been more coordination between the programmes. The LIS programme has met with very mixed results and has created a legacy of problems which will take some time to overcome. Apart from the establishment of a few carpenters and blacksmiths, and the undoubted success of the ox-cart programme, the village technology unit has not had a major impact. The cooperative project has been reasonably successful in creating societies (139) of which over 25 percent have generated surpluses of more than £5,500 each. In creating these profits they have provided the public with competitively priced basic commodities and milling facilities and have helped to induct a substantial number of employees into the ways of entrepreneurship. They have also assisted farmers in selling their surplus produce. It is recommended that NCA should consider creating a technology and business unit which would be responsible for assisting in the establishment of small businesses. It would concern itself with all aspects from an appraisal of the proposal, market assessment, technology development, entrepreneurial and technical skill training, and supplies of inputs and credit. Similar organisations have been established successfully elsewhere in Africa. It would completely reorganise LIS, become involved in appropriate technology, not only for the needs of the Study Area but for Equatoria generally and would be responsible for survey and statistical work related to economic activity. Two expatriate officers would be required.

With regard to the cooperative project, it is not unreasonable to expect a certain degree of success when considering the vast amounts of effort and money which have been spent. It is nevertheless gratifying to find a substantial number of viable societies and a TDCU structure which appears

minds where they wish to settle, for those that wish to stay in Sudan, NCA should assist on ensuring that they are allocated larger holdings.

- Because of the danger of over-production of the common agricultural surplus crops, NCA should be considering carefully what other crops could be profitably sold either locally or further afield. Cotton, which would fit in well with the cropping patterns adopted in the Madi area and which is a crop well known to many of the inhabitants, is strongly favoured. It would, however, require the organisation of marketing and the construction of a ginnery.

- Transport is said to be a problem which affects the agricultural sector as well as many owners. Whilst there is a shortage of freight vehicles in the area, high freight rates are the main problem. Indications are that the rates are, in fact, reasonable considering the high cost of vehicles, spares and fuel. The further introduction of ox-carts will go some way towards meeting local transport requirements, but there is no easy solution to the long distance transport problem. There appears to be a place in Equatoria for pick-up trucks of around 1½ tonne capacity and larger trucks of 3-4 tonnes. If NCA could assist in negotiating with the central Government for vehicles to be imported through Kenya rather than from the north, this would help solve one of the main problems. If negotiations between potential purchasers, throughout Equatoria, could lead to the restriction of choice to a few standard models, such a move would assist greatly in simplifying the supply of spares and service facilities.

Whilst some vehicles would find a ready market with individual business men, the cooperative ownership of vehicles could also become popular. Several groups of small traders interviewed during the study saw this as the answer to their transport problems. Profits from the sale of agricultural produce should form the capital base for investment in further agricultural expansion and in other sectors.

CHAPTER 1
INTRODUCTION

1.1 BACKGROUND

This study, commissioned by Norwegian Church Aid - Sudan Programme (NCA) was carried out by a consultant team from Hunting Technical Services Limited, UK (HTS) and Intermediate Technology Development Group Ltd (ITDG). The team comprised an agriculturalist/land use planner, a small industries adviser and an agricultural economist. Total input was seven man-months, of which six were spent in Sudan during the period late September to late December 1985. A further one man-month was used in UK to complete report preparations.

The Terms of Reference are given in Appendix A. In summary the main objectives of the study were to determine the present economic status of the Study Area, to identify bottlenecks to economic growth and to propose ways in which NCA could assist in stimulating economic activity. An additional objective was to study the refugee situation in the Madi area and to propose ways in which these people could be integrated successfully into an overall development plan for the area.

It was anticipated that the final recommendations would be available for consideration by NCA during the preparation of its four-year plan covering the period 1987-91.

NCA considers that its basic objectives over the 1987-91 period should be to:

(a) assist in increasing food production, in order to achieve better food security, self-sufficiency and economic growth;

(b) stimulate economic growth in general, and to assist Area Councils in generating sufficient funds to enable them to provide adequate health, water and education services.

The Study was concerned with both of these objectives, but placed particular emphasis on non-agricultural economic growth. Development activities were covered in some depth during another study by HTS during 1983-84 (Reference 1).

1.2 APPROACH

The Consultants obtained as much data as possible from NCA staff and records. A number of studies have been undertaken by NCA, many of which were of some relevance to the Study.

Particular attention was paid to the past and present activities of the Local Initiative Support Programme (LIS), the Cooperative Project and the related Torit District Cooperative Union (TDCU), the Village Technology Unit (VTU), and the Central Training office. In line with recent policy changes concerning the increased emphasis being placed on the role of women, the Consultants paid particular attention to the offices concerned with Family Life and women's participation in general.

Additional data were obtained from local government offices, the Upper Talanga Tea Project (UTTP) the Imatong Mountain Forestry Development Co., Regional Government offices in Juba and other agencies (such as the United Nations High Commission for Refugees - UNHCR).

Field visits were made to most central and western parts of the Study Area and discussions held with a wide cross-section of people who had an interest in the economic development of the area.

CHAPTER 2

PRESENT SITUATION

2.1 ADMINISTRATIVE STRUCTURE AND STUDY AREA BOUNDARIES

Equatoria Region, which attained its present status in 1983, comprises Eastern and Western Equatoria Provinces. Western Equatoria Province occupies most of the area lying to the west of the Nile whilst Eastern Equatoria Province occupies all the area to the east of the Nile, plus a fairly narrow strip of land along the West Bank. NCA's Project Area, referred to as the Study Area in this report covers most of the inhabitated areas on the east bank, except the north-west corner. East Equatoria Province is divided into four Area Councils, of which virtually all of Eastern and South East ACs and part of Central AC lie within the Study Area (Figure 2.1). Area Councils are further divided into People's Rural Councils (PRCs). The Study Area comprises seven PRCs as follows:

Area Council		People's Rural Council
Central	(Juba)	Juba (part)
South East	(Torit)	Torit
		Ikotos
		Magwi
		Pageri
Eastern	(Kapoeta)	Kapoeta
		Chukudum

NCA's network, with its headquarters near to the Provincial capital of Torit and its Rural Development Centres (RDCs) fits neatly into the administrative structure. The only anomalies, which are not of major consequence, are that the centre which is currently being constructed at Ikotos will not be an RDC in its own right, but a sub-centre of Torit RDC (at Hilieu) and that, as yet, Juba AC has not been provided with a centre. It is understood there are plans to make some provision if and when NCA's involvement expands in this direction. There is considerable Government interest that NCA should expand its borders westwards.

2.2 POPULATION

A national census was carried out in 1983, and the results, as applicable to the Study Area, are presented in Table 2.1.

Whilst every attempt was made to be as accurate as possible, it is likely that the numbers presented are an underestimation. It is believed that some infants and young children may have been missed out, it is also likely that people would wish to underestimate as the census is the source of information from which the numbers of people who should be poll taxed is taken. In certain areas, particularly in the east, it is contrary to traditional custom for a man to mention how many wives or children he has.

Even in Juba, which in many ways should be the easiest area in which to carry out a census, it is thought that there was an underestimation by around 15 per cent.

The data given include any refugees who were present, but it should be remembered that 1983 saw substantial inward movements of these people (up to 15,000) only some of whom may have been included. Conversely, since then some of the refugees have returned to Uganda. Further details of refugee populations are given in Chapter 9.

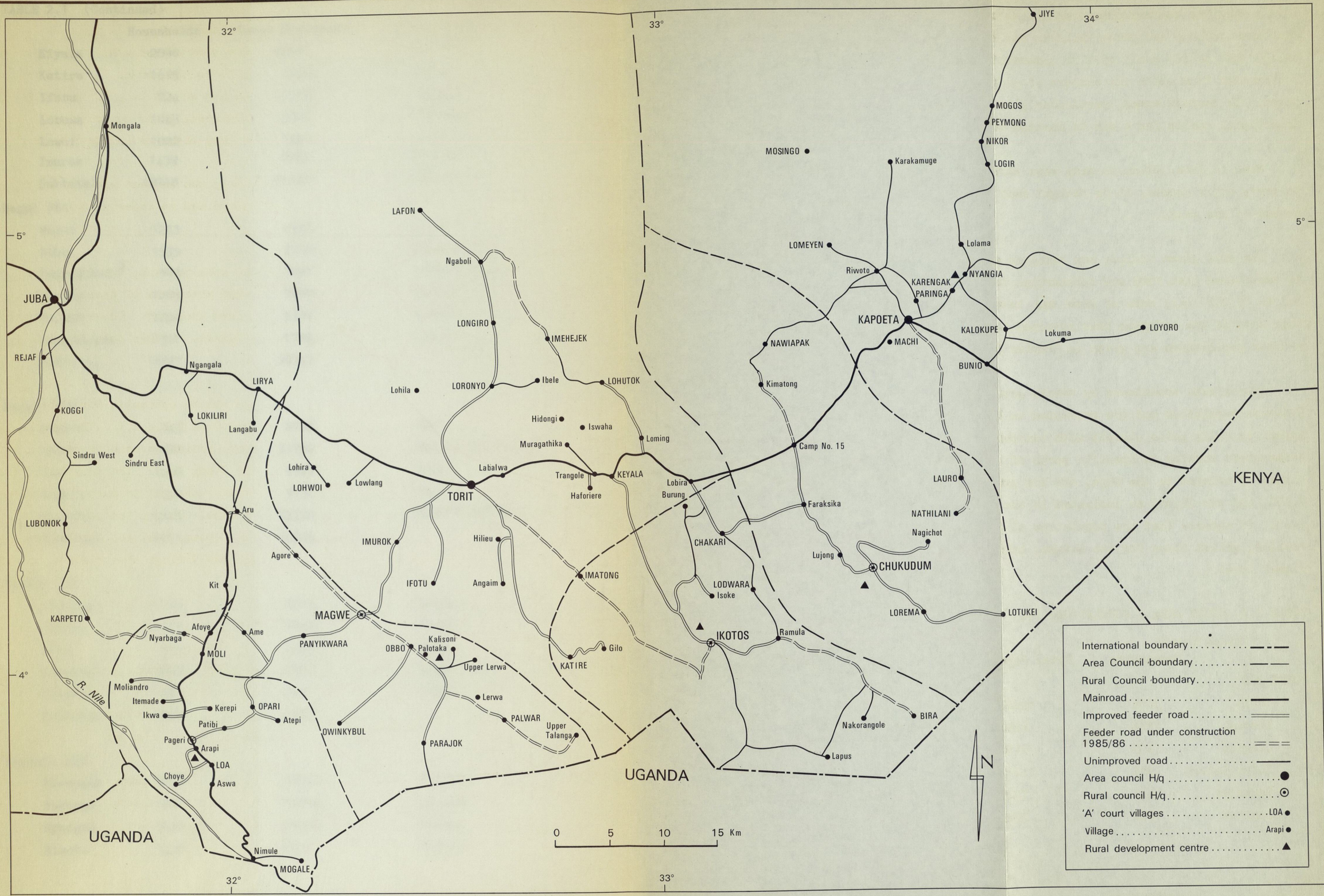
Approximate breakdowns by ethnic groups can be estimated for the Sudanese population and are presented in Part B of Table 2.1. The totals appear to tally quite closely with independent estimates made by various researchers working in specific parts of the Study Area. The only major disparity relates to the Boya, who are generally thought to number around 7,000, and not 22,000 as indicated in the census. During the past thirty years, it appears that the population of the Toposa, Madi and Acholi have trebled, whilst those for the Latuka, Lokoro and Didinga have risen at a much slower level.

TABLE 2.1 STUDY AREA - POPULATIONS 1983

A. Village Totals

	Households	Total Population	Ethnic groups[1]
TORIT PRC			
Torit	3056	15227	Latuka & others
Loronyo	1386	6654	Latuka
Longiro	1175	5150	Lomia
Lafon-Lakoro	2323	11013	Lokoro
Imekejek	1641	7721	Lomia
Lohutok	1198	7083	Lomia

Figure 2·1 NCA Project Area: Roads and Administrative Structure



International boundary .....
Area Council boundary .....
Rural Council boundary .....
Mainroad .....
Improved feeder road .....
Feeder road under construction 1985/86 .....
Unimproved road .....
Area council H/q .....
Rural council H/q .....
'A' court villages ..... LOA
Village ..... Arapi
Rural development centre .....

Source: NCA/SP Water Project (Amended)

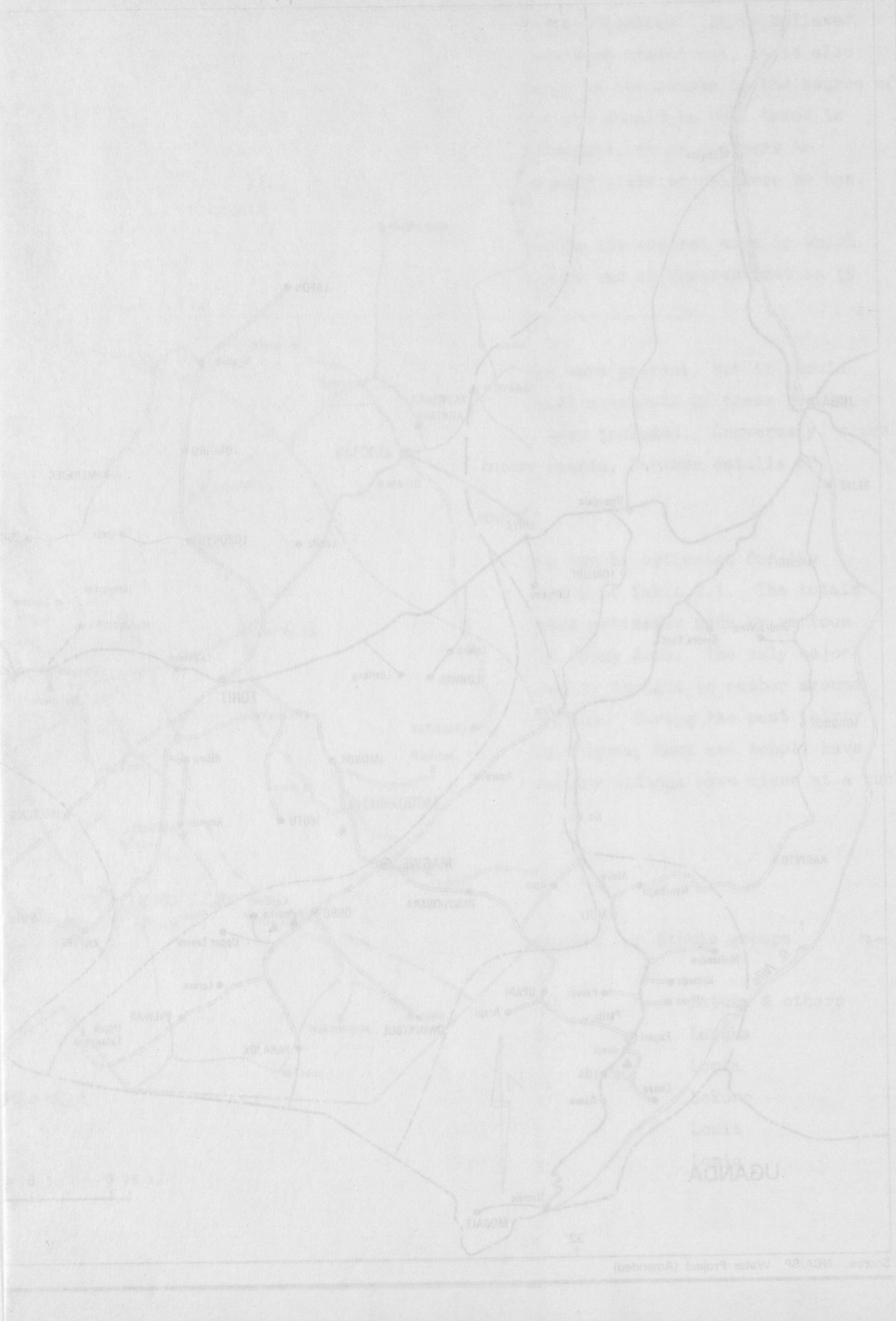


TABLE 2.1 (Continued)

	Households	Total Population	Ethnic groups[1]
Kiyala	2096	10321	Latuka
Katire	1615	7328	Latuka
Ifotu	724	3116	Latuka
Lobuwa	1043	4592	Latuka
Lowoi	1022	5383	Latuka
Imurok	1439	6793	Latuka
Subtotal	18718	90381	Latuka
Magwi PRC			
Magwi	1213	6902	Acholi
Obbo	1535	7779	Acholi
Owinykibul[2]	593	3981	Acholi/Madi
Parjok	1205	7899	Acholi
Palwar	1234	5387	Acholi
Panyikwara	1317	7799	Acholi
Subtotal	7097	39747	
Pageri PRC			
Pageri	343	2733	Madi
Opari	1972	31760	Madi & Refugees
Loa	1440	9929	Madi
Nimule	1236	9754	Madi
Mugalli	3320	22130	Madi & Refugees
Subtotal	8311	76206	
Ikotos PRC			
Imatong	1372	6215	Lango
Ikotos	1839	8447	Lango
Bira	909	4083	Lango
Lodwara	1229	5667	Lango
Chakari	1957	9051	Lango
Subtotal	7306	33463	
Kapoeta PRC			
Karengak	1953	19285	Toposa
Paringa	1617	12969	Toposa
Nyangia	1630	21657	Toposa
Riwoto	3456	43415	Toposa

TABLE 2.1 (Continued)

	Households	Total Population	Ethnic groups[1]
Bunio/Logir	1346	17293	Toposa
Machi	1929	21129	Toposa
Kapoeta	989	5344	Toposa
Magwasa	1466	15153	Toposa
Mosingo	334	6410	Toposa
Kiwara (Likor)	2642	25498	Toposa
Subtotal	17362	188153	
Chukudum PRC			
Chukudum	914	6964	Didinga
Lauro	1061	8624	Didinga
Lorema	835	5974	Didinga
Lothigira	579	4358	Didinga
Lotukei	659	4892	Didinga
Ngatubo	1016	6773	Didinga
Naarich	940	6004	Boya
Naoyiapak	979	10423	Boya
Thuguro	545	5324	Boya
Subtotal	7528	59336	
Juba PRC (East Bank within NCA area)			
Lirya	1635	7224	n.a.
Karpeto	834	5453	n.a.
Lokiliri	1340	7051	n.a.
Koggi	766	4723	n.a.
Lobonok	367	2066	n.a.
Subtotal	4942	26517	
AREA COUNCIL TOTALS			
Torit Area Council	41432	239797	
Kapoeta Area Council	24890	247489	
Juba Area Council	4942	26517	
GRAND TOTAL	71264	513803	

TABLE 2.1 (Continued)

B. Ethnic Groups

	Population ('000s)	
	1983	1958
Latuka[3]	76)	91
Lango	33)	
Lokoro	11	7
Acholi	40	13
Madi	36	12
Toposa	188	55
Didinga	38	27
Boya	22	7
Subtotal	(444)	(212)
Other Sudanese	30	n.a.
Refugees	40	-
TOTAL	(514)	n.a.

Sources: 1983 National Population Census.
Reference 15.

Notes: [1] Ethnic groups are not always clearly defined.
Latuka, Lango and Lomia are often grouped as one.

[2] With the creation in 1985 of the Pageri Rural People's Council, there is some question over the status of Owinykibul, which is partly Acholi and partly Madi.

[3] Including urban population in Torit and Katire.

An age breakdown was not provided in the census, but the following information was available for a sample survey in Acholi (Reference 2). Further age breakdowns for the refugees are given in Chapter 9.

TABLE 2.2 PERCENTAGE DISTRIBUTION OF THE SURVEY POPULATION BY AGE AND SEX, AND MALE-FEMALE SEX RATIOS

Age Group	% Males	% Females	% Total	No. Observations
0-4	13.0	17.2	15.1	293
5-9	17.0	14.9	16.0	310
10-14	16.9	13.6	15.2	296
15-19	13.5	10.8	12.2	236
20-24	8.7	9.8	9.2	179
25-29	6.2	9.9	8.0	156
30-34	6.3	5.1	5.7	111
35-39	4.4	5.5	4.9	96
40-44	3.1	3.6	3.3	65
45-49	4.3	4.4	4.3	84
50-59	4.7	4.0	4.4	85
60+	1.9	1.2	1.7	30
Total	100.0	100.0	100.0	1,941

Source: Sample survey of Acholi, 1983 (Reference 2).

Whilst Juba is outside the Study Area, the population within the city of people from the Study Area is of interest. House (Reference 3) provided the following data:

TABLE 2.3 JUBA POPULATION - ETHNIC BACKGROUND

Origin	% of Sample Population	Estimated Total Population
North Sudan	7.3	7,600
Western Equatoria	15.2	16,000
Eastern Equatoria	63.5	66,700
of which - Acholi	(7.3)	(7,600)
- Bari	(16.4)	(17,200)
- Didinga	(0.3)	(300)
- Lango	(1.3)	(1,350)
- Latuko	(5.1)	(5,300)
- Lokoro	(0.7)	(750)
- Lokoya	(3.0)	(3,150)
- Madi	(6.0)	(6,000)
- Toposa	(0.1)	(100)
Other South Sudan	11.4	12,000
Foreigners	2.6	2,700
TOTAL	100.0	105,000

Source: Reference 3.

With regard to the Acholi, Katuka, Lokoro and Madi groups it can be seen that the total Juba populations are substantial in relation to the total numbers of those people living in their traditional homelands. In the case of the Acholi for example, it could be that around 15 per cent of the combined total of Juba and East Bank Acholis live in Juba.

It is estimated that Juba's population increased by eight per cent in 1982/83. Immigration was responsible for about two-thirds of this increase.

Juba's influence on the Study Area's population is not only of interest

with regard to migration; House (Reference 4) also draws attention to the effect which urban based households can have on the pattern of agriculture in their home areas. In Yei, for example, much of the coffee development has been financed by urban based relatives who are in a financial position to invest in more risky but potentially more rewarding enterprises.

2.3 EMPLOYMENT AND INCOME LEVELS

In the absence of any official data the Consultants were obliged to make their own estimates of employment. In the circumstances it should be appreciated that such estimates must be somewhat approximate. It should also be mentioned that for many of the people who are self-employed in the non-agricultural sector, their contribution is seasonal and that most would also be cultivators.

Table 2.4 provides details of the number of people in paid employment and self-employed (outside the agricultural sector). The totals do not include people who are employed full or part-time in small-scale agricultural work. These are not considered to be very numerous and are mainly found in the Acholi and Madi areas. This is however a growing sector as there is considerable interest in Madi and Acholi in establishing commercial farms, albeit small-scale. The advent of the ox-plough has resulted in much larger areas being cultivated, there is some interest in agro-forestry and in small-holder tea production. Interest in coffee has declined over the past two or three years, and over 150 people previously employed in a Government owned coffee estate at Obbo lost their jobs in 1984.

Outside the 10,000 employed or self-employed people, the remaining population is involved in agriculture and livestock production. Assuming that one employee supports around five dependants, it can be calculated that around 88 per cent of the total population must rely on the agricultural sector for its support. Of these it is estimated that around 80-85 per cent would be classified as living at subsistence level whilst the remaining 15-20 per cent enjoy a slightly higher standard of living.

Unfortunately very few data are available on household incomes, although three recent studies have been undertaken in the Acholi area. This area is almost certainly the one with the highest living standards within the Study Area. The results of the surveys indicate generally how poor the people are, even in the most favoured areas.

Survey 1 (Reference 2) Obbo - Owinykibul 1983

Sample size - 250 households

Household cash income/annum £S	% households
108	18
109-228	26
229-348	26
349-468	12
469-588	7
589-888	7
889	4

The author of this report points out that if cash incomes represent around ten per cent of total income (cash plus home-produced food) only ten per cent of the sampled population attained the mean per capita income of the Sudan in 1983.

Survey 2 (Reference 5) Palwar 1983

Sample size - 158 households

Household cash income/annum £S	% households
200	23
201-400	20
401-600	22
601-800	20
801	16

Average household cash income was around £S490/annum, of which 35 per cent resulted from the sale of agricultural produce, 43 per cent from alcohol sales and 22 per cent from paid employment.

Survey 3 (Reference 6) Lerwa and Labone 1983

Average household cash incomes per annum were £S265 in Lerwa and £S145 in Labone. Around 70 per cent resulted from sales of agricultural produce, the remainder from outside employment, alcohol sales and other minor sources such as fishing and hunting.

Over the three surveys, average annual per caput cash incomes ranged from around £S24 to £S81 (US$12-40 at 1983 rates), assuming household sizes

of around 6 persons.

Wage rates are generally very low with Government daily-paid wages being less than £S1/day for unskilled work. Unskilled workers at UTTP and the Imatong Forestry Company earn around £1.25 - £1.50 per day. Skilled workers would receive between 30 and 50 per cent more. NCA salaries/allowances range widely, reflecting Government scales, and average around £S200/month overall. (Monthly wage bill £S200,000 for 950 employees).

The distribution of employment opportunities is probably very skewed, with many more people in the west being employed than in the east. In the surveys carried out in Acholi, substantial numbers of heads of households were employed for at least part of the year. In Palwar (Reference 5) around 60 per cent found some outside employment, whilst in Lerwa 44 per cent, and in Labone only 17 per cent found work (Reference 6). It should be appreciated that many of these opportunities were only of secondary importance to agriculture. In Obbo/Owinykibul, around 96 per cent said that agriculture was their main occupation (Reference 2).

From Table 2.4 it can be seen that approximately 55 per cent of employment is financed directly by Government, or over 72 per cent if parastatals are included. Agencies, including NCA, the Catholic Church and VSG provide a further 13 per cent of the opportunities, whilst the private sector and the self-employed contribute around 14 per cent.

The majority of employment opportunities are in the service sector (approximately 78 per cent), whilst almost all of the remainder are involved in the UTTP project, the Imatong Forestry Company or in small-scale production.

Whilst little employment data exist for the Study Area, two surveys, the Juba Enterprise Survey and the Urban Juba Household Survey carried out in 1983-84 by ILO (References 7 and 3) are of some relevance. The former survey identified around 2,500 enterprises of which it studied 536, whilst the latter survey covered over 1000 households representing around five per cent of Juba's total population of around 105,000.

Juba labour force participation rates (which combine those who are

TABLE 2.4 EMPLOYMENT IN THE STUDY AREA (Late 1985)

(A) EMPLOYED PERSONS

Employer	Employees (No.)
Regional/Local Government	
Dept of Agriculture	80
Dept of Livestock/Fisheries	60
Dept of Forestry	260 [1]
Dept of Wildlife	245 [2]
Dept of Health	455 [3]
Dept of Roads	400 [4]
Dept of Education	700
Local administration	340 [5]
Security forces	3000 [6]
Agencies	
Catholic Church	350
NCA/PMRA/UNHCR	950 [7]
VSG	10
Cooperatives	
TDCU	55
Societies	70
Parastatals	
UTTP	750
Imatong forestry	800
RDC farm (Parajok)	50 [8]
NTC	70
Private Sector	500 [9]
TOTAL [10]	9145

TABLE 2.4 (Continued)

(B) SELF-EMPLOYED	Number
Retailers	320
Petty traders	150
Tailors	100
Carpenters	30
Blacksmiths	100
Mechanics	20
Shoemakers	20
Others	100
TOTAL	840
(C) TOTAL EMPLOYED AND SELF-EMPLOYED	9985

Notes:

1 Includes 90 working at Kalisoni sawmill.
2 Used as security forces.
3 Includes 110 local government employees.
4 Estimated from number of road camps of around 50.
5 Includes sub-chiefs, surukali (local police) and mukungu.
6 Normal strength. Considerably more moved into the area during the Consultants' visit.
7 Total staff. Those who are seconded from Government have been excluded from the relevant departmental totals.
8 Some part-time.
9 Rough estimate. Includes employed shop workers, drivers, mechanics, carpenters, domestic servants, watchmen.
10 Excludes water pump maintenance men, whose present status is unclear.

TABLE 2.5 PERCENTAGE DISTRIBUTION OF EMPLOYMENT, BY OCCUPATION AND SEX IN URBAN JUBA.

Occupation	No. Obs.	% of Occupation Male	% of All Males	% of All Females	Total (%)
Agricultural	109	39	2.9	8.6	4.9
Directors/Deputies	24	100	1.6	0	1.1
Executive Officers	14	100	0.9	0	0.6
Doctors	4	100	0.3	0	0.2
Economists/Accts.	22	77	1.1	0.7	1.0
Engineers/Archs.	9	100	0.6	0	0.4
Senior Managers	12	100	0.8	0	0.5
Other Profs.	7	100	0.5	0	0.3
Med. Assist./Nurses	39	46	1.2	2.7	1.7
Teachers/Extension	76	58	3.0	4.2	3.4
Inspectors	22	95	1.4	0.1	1.0
Social Workers	9	33	0.2	0.8	0.4
Technicians	19	89	1.1	0.3	0.9
Journalists/Artists	10	60	0.4	0.5	0.4
Clerks/Bookkeepers	151	70	7.1	6.0	6.8
Secretaries/Typists	27	19	0.3	2.9	1.2
Other Middle Level	24	92	1.5	0.3	1.1
Shopkeepers	164	99	10.9	0.3	7.3
Storekeepers	13	85	0.7	0.3	0.6
Cashiers	7	71	0.3	0.3	0.3
Butchers	6	100	0.4	0	0.3
Petty Traders	182	69	8.5	7.3	8.1
Managers Bars/Rests.	20	80	1.1	0.5	0.9
Other Sales	12	83	0.7	0.3	0.5
Gamescouts/Watchmen	53	100	3.6	0	2.4
Domestic Servants	70	91	4.3	0.8	3.1
Waiters/Barmen	13	62	0.5	0.7	0.6
Drivers/Conductors	140	100	9.4	0	6.3
Tax Collectors	6	100	0.4	0	0.3
Other Services	19	89	1.1	0.3	0.9
Electricians	6	100	0.4	0	0.3
Masons	36	100	2.4	0	1.6

TABLE 2.5 (Continued)

Occupation	No. Obs.	% of Occupation Male	% of All Males	% of All Females	Total (%)
Metal Workers	17	100	1.1	0	0.8
Carpenters	64	100	4.3	0	2.9
Plumbers	7	100	0.5	0	0.3
Mechanics	57	100	3.8	0	2.6
Tailors	23	96	1.5	0.1	1.0
Other Artisans	8	88	0.5	0.1	0.4
Police/Soldiers	119	94	7.5	0.9	5.3
Machine Operators	18	100	1.2	0	0.8
Brewers	413	1	0.3	53.3	18.5
Breadmakers	23	17	0.3	2.5	1.0
Messengers	54	44	1.6	3.9	2.4
Labourers	107	88	7.8	1.3	4.6
	2235	66	100	100	100

Source: Reference 7.

employed and those who are actively seeking employment) are rather high at 67 per cent for males and 45 per cent for females excluding those who are less than 10 years old. The unemployment rates are very low with only 4.2 per cent of males above 15 years of age and 3.6 per cent of females above 15 years being unemployed. Rewards to employment are, however, generally very low.

The structure of Juba's employment is of particular interest, and indicates the abnormally dominant role played by Central and Regional Government, providing around 40 per cent of all jobs. The formal sector, which includes Government, accounts for 44 per cent of all jobs. Table 2.5 presents the range of employment opportunities and indicates amongst other things, the low levels of participation in manufacturing (except brewing) and the restricted nature of female employment.

Other data confirmed the generally held view that income distribution has a definite ethnic bias, with dominant Northern Sudanese participation in the most lucrative sectors of trade, transport and restaurant ownership. Only 4 per cent of employees are classified as professionals and 10 per cent as skilled or semi-skilled manual workers.

The number of workers per enterprise are very low with a mean of 2.5. Only three per cent of enterprises employ more than 10 persons, as indicated in Table 2.6.

2.4 EDUCATION

Table 2.7 details the total number of children in the Study Area receiving primary and intermediate level education. In addition to these there are approximately 1500 attending secondary school, an unknown, but very small number, receiving education outside, primarily in Juba and Uganda and a few attending recently established pre-primary Catholic Schools.

TABLE 2.6 PERCENTAGE DISTRIBUTION OF EMPLOYMENT BY SECTOR (JUBA)

Sector	No. of Workers							No. of Observations
	Means	1	2	3	4	5-9	10+	
Tailors	2.0	39	48	9	1	1	2	99
Tinsmiths	2.7	19	38	14	19	10	0	21
Miscellaneous[1] Manufacturing	7.4	23	18	9	5	32	13	22
Construction	7.0	29	0	14	0	29	28	7
Restaurant	4.9	4	10	16	26	36	8	50
Retail Trade	2.2	38	36	15	5	5	1	111
Petty Trade	1.3	86	6	5	2	1	0	155
Transport	2.2	63	11	11	11	0	4	19
Repair Services	1.9	64	25	4	0	4	3	28
Auto Repairs	5.3	0	36	21	0	21	22	14
Other Services	3.2	40	0	30	10	20	0	10
TOTAL	2.5	49	24	10	6	8	3	536

Source: House: Juba Enterprise Survey (Reference 7).

Note: [1] Including sandal makers, basket makers, carpenters, bakers, brewers.

TABLE 2.7 PRIMARY AND INTERMEDIATE EDUCATION ATTENDANCE

Primary	Boys	Girls	Total
Madi (Refugee)	4117	2402	6519
Madi (Sudanese)	2070	1452	3522
Acholi	2427	1360	3787
Torit	3801	1172	4973
Ikotos	834	44	878
Chukudum	826	-	826
Kapoeta	542	182	724
TOTAL	14,617	6,612	21,229
Intermediate			
Madi (Refugee	498	304	802
Madi (Sudanese)	399	187	586
Acholi	456	128	584
Torit	654	170	824
Chukudum	28	-	28
Kapoeta	89	16	105
TOTAL	2,124	805	2,929

Source: NCA Education Project.

Assuming around 40 per cent of the population is of school age the following calculation of actual against potential education achievement can be calculated:

Area	Potential School Population	Actual School Population	Achievement %
Madi (Refugee)) Madi (Sudanese))	30,500	11,429	37
Acholi	15,900	4,371	27
Torit	36,150	5,797	16
Ikotos	13,400	878	7
Chukudum	23,700	854	4
Kapoeta	75,300	829	1
TOTAL	194,950	24,158	12

Whilst the attendance data and the assumptions regarding age-breakdown of the population may not be highly accurate, the indications from the above table are clear and alarming. Whilst in no part of the Study Area is the level of achievement satisfactory, the situation in the east is quite extraordinary. Attention is drawn to the very low levels of female participation.

These data help to explain the problems NCA face in finding educated staff, and particularly females, from the central and eastern parts of the Study Area, and why the top positions are mostly taken by people from Madi, Acholi and areas outside the Study Area.

There are no data on adult literacy; it is thought that the results of such a survey would indicate that a higher proportion of the adult population than of the present child population are literate, because of the superior education facilities which existed in Uganda during the 1960s and 70s than currently exist in Southern Sudan.

2.5 SOCIO-ECONOMIC OVERVIEW

Mention has already been made in Section 2.3 of employment and income levels. Unfortunately there are no official data from which an assessment of the economic status of the Study Area, the East Bank Equatoria (EBEE) or of Equatoria Region as a whole can be made.

Discussions on this aspect were held with the appropriate staff in the Department of Finance and Economic Planning, within the Regional Government, but no information was provided. It was suggested that any Gross Domestic Product (GDP) data available in Khartoum would not include any contribution from Equatoria Region, or from the other two southern regions of Bahr-El-Ghazal and Upper Nile. MEFIT attempted to calculate a GDP for the whole of the then Southern Region for 1975-76 and related this to the national GDP for 1974-75. Their findings are presented in Table 2.8 .

The information provided is considered to be of limited value, but does represent the only attempt to calculate a GDP for the south which was located by the Consultants.

TABLE 2.8 TABLE COMPARING CERTAIN PHYSICAL AND ECONOMIC DIMENSIONS OF THE REGION WITH THOSE OF THE SUDAN

	Southern Region 1975-76 with the Subsistence Economic Activities included-excluded		Over-all Economy of the Sudan 1974-75	Ratio between Southern Region and the Sudan Subsistence Economy included-excluded	
Area (in km²)	648,000		2,505,813	25.9	
Population (in 000)*	2,945		14,958	19.7	
- Urban and Semi-Urban	10.2%		18.4%	10.9	
- Rural	89.8%		81.6%	21.7	
Gross Domestic Product at Market Prices**	349.2	91.3	1,510.8	23.1	6.0
1. Primary Sector	170.6	27.7	585.3	29.1	4.7
- Agriculture	62.0	15.7	263.4	23.5	6.0
- Livestock	54.1	4.6	277.3	19.5	1.7
- Forestry	37.0	3.7	36.6	101.1?	10.1
- Fishing	12.3	3.0	8.0	153.7?	37.5
- Hunting	5.2	0.7	n.a.	n.a.	n.a.
2. Manufacturing	33.0	7.6	138.3	23.9	5.5
- Modern	0.8	0.8	113.7	0.7	0.7
- Traditional	32.2	6.8	24.6	130.9?	27.6
3. Electricity and Water	1.4	0.4	20.9	6.7	1.9
4. Construction and Building	9.5	1.3	65.0	14.6	2.0
5. Trade, Restaurante, Hotels	69.6	29.5	245.2	28.4	12.0
6. Transport & Communications	21.4	8.1	89.4	23.9	9.1
7. Producers of Govt. Service	6.9	6.9	151.2	4.6	4.6
8. Other Sectors	36.8	9.8	215.5	17.1	4.5
Disposable Income	320.5	86.2	1,370.5	23.4	6.3
- per capita (in £S)	100.0	27.0	87.1	114.8?	31.0
Govt. Final Consump. Expt.	7.5	7.5	207.8	3.6	3.6
Gross Capital Formation	57.9	6.8	265.0	21.8	2.6
External Trade					
- Exports	2.5	2.5	183.5	1.4	1.4
- Imports	37.1	37.1	316.2	11.7	11.7
- Imports less exports	34.8	34.8	132.7	26.2	26.2

* 1973 Census
** In £S millions

Sources: Input-Output Table for the Southern Region Economy 1975-76, MEFIT.
National Income: Accounts and Supporting Tables 1972-75, Ministry of National Planning, Department of Statistics, Khartoum, April 1977.

It should also be mentioned that there is no current Development Plan for Equatoria Province. Considering that virtually all Government funds are used for paying salaries and meeting operational costs, it is realistic that no such plan exists. Government support for the UTTP is one fortunate exception.

Until very recently Government has been unable even to play a lead role in coordinating, controlling or influencing many of the activities of the numerous agencies working in Equatoria. Measures have been taken recently to rationalise matters, with the creation of a Government body responsible for coordinating the activities of non-Government organisations (NGOs). It is not clear, however, if the organisation will have sufficient staff with adequate expertise or if it can be effective within the general context of development where the NGOs are virtually the only source of development funds.

In the absence of hard data the Consultants are obliged to resort to a generalised description of the economic status of the Study Area, which must, of necessity, be somewhat superficial and subjective.

As indicated by the employment data, the overall level of economic attainment is very low. With around 75 per cent of the overall population of around 0.5 million existing from subsistence-level agricultural production, a further 15 per cent generating some cash surpluses from agricultural production and around 10 per cent living primarily from paid employment. for most of the employees, wage rates are insufficient to support a family, and most such households supplement their incomes through agricultural production.

Conditions within the Study Area vary quite remarkably, both in terms of economic potential and of attitudes towards development.

In the east and central areas where agricultural conditions are the least favourable and where cattle play a dominant role in the socio-economic life of the people, the economy is generally very poorly developed. It is in these same areas where the people are least interested in economic development and are, to the eyes of an outsider, the most deprived. Eduation levels are poor, malnutrition is a serious problem, famines

resulting from droughts are a regular occurrence and ownership of material goods, other than livestock, is generally at a very low level. With a few exceptions, there are no local traders or businessmen operating in the area. In these areas it is normal to find anyone walking outside the villages to be armed with a spear or a bow-and-arrow. On the other hand many of these people are quite wealthy in terms of livestock, and enjoy strong bonds of kinship with their family groups. Most of these people have had relatively little exposure to outside influences. Many of those in the far east did not move away during the 1950s and 60s, whilst those in the centre who did move to Uganda were accommodated in clearly defined mono-ethnic settlements there. Although attitudes are changing and numerous examples of people who have broken with tradition can be found living both inside and outside the home areas, it is generally felt that it will be some time before any radical changes will take place spontaneously. The preoccupation to amass cattle, in order to enhance social recognition and to buy wives, not only diverts attention away from other pursuits which are likely to be more economically rewarding but obliges the owners to live under the constant threat of attack from raiders of both the same and other ethnic groups. There is little evidence to suggest that the people's attitudes towards cattle or the futility of raiding are changing. Indications are that the situation with regard to cattle raiding is worsening. Elsewhere there are some signs of hopeful change, particularly with regard to the attitude towards education, the acceptance of improved agricultural practices, the use of animal power and the emergence, in Ikotos, of local traders (References 8, 9 and 10).

In the west, in the Acholi and Madi areas conditions are completely different. Agricultural production is relatively advanced and farm sizes are larger, there is a wider range of locally supported economic activity and attitudes towards economic development and education are more akin to those of the developed world. The people in these areas have been subjected to considerable outside influence, most of them having spent time in Uganda or Kenya, mixing both with Ugandans of the same ethnic origins and with others. At the present time over 40,000 Ugandan refugees also live in the area (References 11 and 12).

It should be appreciated, however, that despite the more favourable economic conditions and attitudes existing in the west, the general level

of economic development is still very poor and bears no comparison to many parts of rural Kenya or to the peaceful areas of Uganda.

The bottlenecks to development here, unlike in the east and centre, are not related so much to the inherent potential of the area or the attitudes of the people, but to the factors which are responsible generally for the stagnant nature of the economy of the South. Whilst the lives of the majority of people in the Study Area are not in serious danger, conditions generally are rather sad. Fortunately, perhaps, the majority of the population are subsistence farmers and unless events take place which upset their crop production or family life, they are partly buffered from the unfortunate events taking place around them. Nevertheless, all suffer to some extent from the low levels of essential services, the high prices of basic commodities and transport, the scarcity of job opportunities and the general malaise and insecurity.

The main problems facing the area are as follows:

- the extremely low levels of Government supported services and development activity, despite the not inconsiderable numbers of people on Regional and Government pay rolls. The main reasons for this are said, by Regional Government officers, to be that Equatoria Region receives a disproportionately small allocation from the National Budget and that the opportunities for raising taxes to support Local Government are very limited. Main roads in the Study Area are in appalling condition, many not having been graded for over two years.

- the high prices and unavailability of many essential commodities; contributory causes include the high levels of inflation and consequent devaluation of the Sudanese pound, the closing of the Nile for transport, the virtual absence of any local manufacturing, the poor road conditions and the vast distances involved in bringing commodities from N. Sudan or Kenya.

- the antagonism between, and in some cases within, the ethnic groups, particularly those in the centre and east, which can, with the ready availability of modern weapons, manifest itself with serious consequences.

- the inability of the security forces and the local authorities to control and bring to justice lawless elements involved in highway robbery and murder.

- the almost total dominance of the economy by subsistence agriculture and the consequent extremely low levels of participation in the other sectors, resulting in an unbalanced economy devoid of the elements which are required to develop a growing economy and in the absence of job opportunities.

- the virtual absence of formal or informal credit sources.

- the civil war, which is negating so much of the little developmental progress which has been made and is upsetting the confidence of people and organisations who could, otherwise, be making positive contributions towards the development of the economy and living conditions generally.

Whilst these have been general problems for some time, 1985 was a very bad year for the south generally and particularly for NCA and the Study Area.

In early 1985 the security situation deteriorated to the extent that NCA was obliged to evacuate its 60 expatriate employees plus families, leaving only five to maintain a presence. Sudanese staff took over most of the top positions and despite the somewhat rapid promotion of many of these staff and the difficult conditions prevailing in the Area, the Programme continued with gratifying success. Nevertheless the level of activity was reduced substantially with over 1400 staff, of a total complement of over 2200, being laid off.

Similar activities took place at the Upper Talanga Tea Project (UTTP) where around half of the 1,300 workforce was laid off. Other events during 1985 which had direct or indirect effects on the NCA Programme and the Study Area included the following:

- an abrupt change in National Government in April leading amongst other things to many changes in Regional Government postings.

- a drought in Kapoeta and Chukudum and also in parts of Madi.

- the overthrow of President Obote in July and the subsequent unrest within Uganda; substantial numbers of the refugees, particularly adult males, returned to participate in the activities.

- the destruction, by local lawless elements, of the Lafon RDC.

- continued insurgency in areas bordering the Nile, stopping the movement of all commercial river transport to the North.

- the occupation of Kapoeta and Chukudum areas in the east of the Study Area by SPLA forces in November and the consequent military action taken by Government forces. All NCA activities ceased in these areas and much of work elsewhere, particularly in the Latuka area, was disrupted. It is understood that the RDC at Kapoeta was ransacked during this time and that the RDC at Chukudum suffered a similar fate. At least two NCA vehicles were also lost.

At the time of writing the prospects for peace in the Study Area were poor. In the light of this it should be appreciated that recommendations made in this report must be somewhat hypothetical; realistically it is unlikely that any development activity will take place until a solution is found to the political problems currently facing the Study Area and the South in general.

CHAPTER 3

THE PRIMARY SECTOR

3.1 INTRODUCTION

The Consultants are obliged to confine their analysis of this, and the other sectors, to a descriptive one. Any quantitative data made available have been included, but this is insufficient to allow any meaningful calculation of value added by sector or sub-sector.

To avoid unnecessary repetition, sawmilling has been included with forestry and tea processing with tea production.

3.2 SMALLHOLDER AGRICULTURE

3.2.1 Background

It is estimated that 90 per cent of the population obtain their living from agriculture. Most of the crops are grown for home consumption; only a small proportion of food crops is traded at local markets though some maize and sorghum are sold out of the Acholi and Madi areas in good years. The only true cash crops are tobacco and robusta coffee.

Soils vary widely in both fertility and texture. Apart from the vertisols at Lafon and Kapoeta, the remainder can be very roughly classified as most fertile in the Acholi area, some reasonably fertile deep red soils and some acidic and low fertility soils in Madi, with coarse and less fertile soils in Torit and Kapoeta. There are some areas of more favourable soils in the Didinga hills.

The rainfall is highest in Palotaka (1150 mm/year) and Madi and then gets less towards the east (Kapoeta - 695 mm/year).

The Ministry of Agriculture continues to maintain a presence in Torit but to all effects and purposes, NCA is responsible for all agricultural extension in East Bank Equatoria.

3.2.2 Food Crop Production

One of the main constraints affecting the Hunting's 1983 Study (Reference 1) was the shortage of agricultural data on farm size, cropped areas, crop yields and other such fundamental aspects. Although

a start has recently been made to collect some of this information, no additional data to that available in 1983 were available to the Consultants. Hence it is not possible to determine present levels of total crop production nor to monitor any changes which may have taken place over the past few years.

The general pattern, as described in Reference 1, appears to remain unchanged.

The Acholi area continues to be the main centre of production with extensive areas of maize and improved sorghum. Other crops of importance are oilseeds,pulses and rootcrops. Although less attention is being given to coffee growing, this crop continues to be an important cash crop for about 200 farmers.

The other area able to produce a surplus of agricultural products is Madi where sorghum and cassava are the main crops followed by groundnuts, sesame and sweet potatoes. This is the main area for flue-cured tobacco.

Moving eastwards the decline in rainfall and soil fertility is reflected in the crops which are grown. In Torit sorghum, millet and cassava are the main food crops; further east in Kapoeta most agricultural effort is involved in producing bulrush millet and sorghum. The exception to this trend is the Didinga Hills where wheat and vegetables are of increasing importance, and some areas round Kapoeta where the NCA extension staff have been very successful in persuading the local farmers to plant cassava as food reserve.

The improvement in the Chukudum to Nagichot road should have increased the opportunity for marketing agricultural products produced in the higher areas, but it is understood that this road has now reverted to its original poor condition. Another factor which could be a stimulus to agricultural development is the destruction of housing and theft of livestock by marauding gangs from Uganda. The Didinga people are becoming more dependent than ever on their agricultural production.

In very broad terms it can be assumed that there are approximately 80,000 farming families (comprising, on average, six persons) in the

Study Area. To be able to survive, each family needs to grow approximately 1 to 1.5 tonnes of food/year, (in terms of dry weight). Total food production, is thus in the order of 100,000 - 120,000 tonnes/year, of which around 40 - 50 per cent is in the form of grains, the remainder comprising mainly of root crops (cassava and sweet potatoes), groundnuts, sesame, legumes and vegetables. In 1985, most basic food-stuffs were valued at around £S0.7/kg (dryweight equivalent). Thus the total gross value of subsistence production can be calculated at around £S80M/year.

Surplus food production from the Acholi and Madi areas plus 'imports' from West Bank Equatoria, Uganda, Kenya, Zaire and further afield are estimated to total around 10,000 tonnes annually. This is purchased mainly by the non-farming community, the cattle-orientated people in the east, and agencies, such as NCA/UNHCR and the Catholic Church, for distribution to drought affected areas and to the few refugees who are still receiving food rations.

It is estimated that around 3,000 - 5,000 tonnes of surplus food (mainly sorghum, maize and dried cassava) are produced in the Acholi and Madi Areas, much of which is sold in the Study Area. Gross value of this surplus is of the order of £S3M.

3.2.3 Tobacco

The production of flue-cured tobacco under guidance from the National Tobacco Company (NTC) continues to be an important aspect of agriculture in the Madi Area. There has been little change in production levels since 1983 (Table 3.1) but this is more the result of adverse conditions than of policy. In 1985 there was a water shortage during the nursery stage which resulted in scarcity of seedlings and a reduction in the area planted.

NTC's planned programme to make eucalyptus seedlings available to farmers so that they could grow their own firewood has not materialised because all the seedlings died in the nursery. Agro-forestry is an important component of the Arapi RDC work programme yet there has been no contact with the staff engaged in similar activities. A joint approach by the NTC and the RDC would be to the benefit of each organisation and, more particularly, to the farmers of Madi.

Loans are still being given by NTC. These cover the cost of metal flue pipes which need to be replaced after 2-4 years. NTC employ one sheet metal worker who can meet the demand with ease so there is little scope for this activity becoming a local minor-industry at current levels of planting. All the fertiliser and other requirements are flown in to Juba and the baled leaf is airfreighted to Khartoum, with small quantities being used in Juba for cigarette and cigar production.

TABLE 3.1 PRODUCTION OF FLUE-CURED TOBACCO

Year	Growers	Feddans	Production (kg)	Yield (kg/feddan)
1982 [1]	276	276	82800	300
1984	247	225	75000	333
1985	281	203	66000	325

Source: NTC

Notes: [1] Figures based on average area of one feddan per grower and 300 kg per feddan.

The 1985 prices for different grades are given in Table 3.2. Most of the 1985 crop was in the X and L grades giving an average price of about £S2.00 per kg. The average return per grower was about £S650.00 per feddan but the better growers who were able to get yields approaching 1000 kg per feddan of better quality tobacco were able to achieve gross incomes of more than £S2000.00 per feddan. Total gross value of tobacco produced in 1985 was around £S130,000.

TABLE 3.2 FLUE-CURED TOBACCO GRADES AND PRICES [1] (1985)

Grade	Price	Grade	Price	Grade	Price
X1L	3.00	L1L	3.00	N	1.00
X2L	2.50	L2L	2.50	G1	1.20
X3L	2.00	L3L	2.00	G2	1.00
X4L	1.50	L4L	1.50		

Source: NTC.

Notes: [1] Prices are in £S per kg of cured leaf.

The staff employed in Madi area by NTC are as follows:

Permanent - 25
Casual - 43 August - December
- 15 January - July

3.2.4 Coffee

In 1983 there were approximately 265 feddans of robusta coffee being grown by 194 registered growers in the Palotaka area. The PDU project was due to end in 1984 and Hunting recommended that NCA should not only take over the existing programme and staff but should recruit and train more staff and expand the coffee development programme.

The coffee crop in Acholi has deteriorated since 1983 and, according to field staff, NCA have not been encouraging coffee production as local farmers have tended to neglect coffee in favour of food crops. It must be mentioned here that it is also Government's and NCA's policy to concentrate on foodcrops. The rationale behind the farmers' approach is that in a good rainfall year surplus grain can always be sold, though not as profitably as coffee, but, and more important, in a low rainfall year an area of foodcrops which produces a little is much better than an area of coffee which produces nothing.

A senior member of NCA's agricultural staff suggested that most coffee farmers in Acholi tend to prepare and plant too large an area which they are then unable to manage. Weeding and pruning are neglected resulting in a reduced yield, there is a greatly increased risk of fire which, if it doesn't kill the bushes, has a very adverse effect on yield.

The farmers have been advised to plant smaller areas and to look after them correctly. This advice has not had much effect but even so it appears unlikely that NCA will increase the importance they attach to coffee production until their extension programme on cash/food crops and crop production components such as animal draft, are more advanced.

No new planting has been undertaken since 1983, indeed the area has fallen from 265 feddans to 259 feddans in 1985. No new seedlings have been produced; those that were present in the nursery have been

used to gap-fill blank sites in existing holdings. Processing facilities have not improved; there are only two hand-operated hullers in Palotaka, the one at the RDC is used only for processing coffee produced on the RDC farm. The private coffee farmers either pound the dried cherries in a pestle and morter to produce a low grade clean berry or they sell the dried cherries which are processed elsewhere (for example in Juba).

Yields in 1980-83 were said to be about 200 kg of clean coffee per feddan. In 1984 and 1985 yields have fallen as a result of lower rainfall and neglect and probably averaged around 150 kg/feddan. Prices in Juba were around £S 9.0 per kg giving a gross return of around £S 1350 per feddan. Despite the low yields, the only other smallholder crop in the Study Area which can give a similar level of income is flue-cured tobacco. Total gross value of coffee production in 1985 was around £S 350,000.

The Haggar Group of Companies which has interests in coffee and tea in the Yei area operates a loan scheme there, assisting farmers in establishing coffee plantations and recovering its loans from future sales. The scheme is said to work well and, in principle, given that suitable areas can be found, Haggar, through its Khartoum offices, would be happy to consider financing similar ventures in the Acholi area.

3.2.5 Staff

The staff employed by the NCA Agricultural Project in 1985 are detailed in Table 3.3.

No allowance is made in Table 3.3. for any proposed staff increases in 1986.

3.3 LARGE SCALE AGRICULTURAL PRODUCTION

3.3.1 Introduction

In 1984 there were four such enterprises operating in the Study Area; the Parajok farm owned by the Equatoria Development Corporation (EDC), the Upper Talanga Tea Project (UTTP) being established in the Acholi area, the 120 ha Food Production Unit associated with the UTTP and the Gilo Potato Project. By 1985 the Food Production Unit had

TABLE 3.3 NCA AGRICULTURAL PROJECT STAFF[1]

	Torit	Arapi	Palotaka	Chukudum	Kapoeta
1 Assistant Extension Officer	3	3	2		
1 Extension Field Asst.	19	11	8	8	9
2 Agro-forestry	2	6	2	6	2
2 Agro-forestry trainees	3	-	-	-	17
2 Agro-forestry other		3			
3 Veterinary Field Asst.		1	1	1	
4 Ox Instructor[2]		2		2	
4 Ox Driver[3]	16	2[3]	5[4]	6[5]	6[5]
3 Shepherd	3	1	1	2	
5 Research Field Asst.		1		3	3
6 Asst. Training Officer	1				
7 Porter	4				
5 Asst. Research Officer			1		
8 Hilieu Coordinators Office	12				
9 Hilieu Village Technology Centre	9				
TOTAL	72	30	20	28	39

Source: NCA Agricultural Project.

Notes: [1] The Table does not include NCA Veterinary or Animal Production staff. These appear in Table 3.6.

[2] Includes trainees.

ceased to operate and the Gilo Potato Project had been taken over by the Imatong Mountains Forestry Development Co, who have also begun to diversify into other agricultural production, albeit on a very small scale.

3.3.2 Parajok Maize Farm

This farm, owned by the Equatoria Development Corporation is a small enterprise, which during the last season planted 66 feddans of maize, five feddans of groundnuts, 0.25 feddans of onions and 0.25 feddans of eggplants. The gross value of production was around £S 50,000.

It is barely equipped with a tractor and trailer, some cultivation equipment and a maize sheller. Daily paid staff were shelling the maize manually as there was no fuel to drive the sheller.

Approximately 12 staff are employed permanently and between 40 to 70 daily paid workers are employed at certain times of the year. Daily pay is equivalent to around £S 0.80.

The total cleared area was thought to be around 130 feddans; not all of this area could be cultivated due to the unavailability of farm machinery and fuel.

The RDC has plans to expand this farm to 1000 feddans next year and to 5000 feddans in the future. The Consultants believe this to be a rather optimistic proposal.

3.3.3 Upper Talanga Tea Estate

The disturbances in early 1985 had serious consequences for this estate. Up until this time work had been progressing well and manufacturered tea should have been produced by mid 1985. The disturbances resulted in many of the staff having to leave, and the stopping of construction work on the tea factory. Despite the commendable efforts made by staff who remained, no further progress was made on the factory until November 1985, and many of the tractors and other mechanical equipment suffered severely from the unsupervised use. At the time of the Consultants' visit the tea factory contractors were back on site and the estate was being run on a care and maintenance basis,

despite the fact that the Regional and National Governments were meeting in full their financial commitment to the project. Financial assistance from the European Development Fund (EDF) was scheduled to finish by late 1986, but the possibility of further assistance is being discussed.

The civil works of the tea factory were designed to accommodate eventually production from 1000 ha, with a first phase capacity for 500 ha. The machinery being installed currently could accommodate this. The actual area of plantation is around 220 ha of estate tea and 90 ha of outgrowers tea (of which around 20 per cent is in very poor condition). The extension of the planted areas is being held in abeyance at the present time.

Employment exceeded 1,200 before the disturbances, and the total number of people in the area was over 7000. (Prior to the establishment of the estate, total population of the area was less than 100). Employment in late 1985 was around 750.

The purpose of the Consultants' visit was to assess the economic impact which the estate is having and could have on EBEE and to identify any opportunities where NCA could assist in stimulating economic growth in the area.

The general conclusion was that UTTP is and would continue to be a somewhat discrete and independent entity and that there were few opportunities for NCA involvement.

With regard to purchased inputs, most of these would have to be imported and the manufacture of the few items which might be provided locally could be organised by the estate (e.g. pruning knives, plucking capes, plucking baskets). There would be little opportunity for NCA to provide any training facilities, as the UTTP already makes use of the Multiservice Training Centre in Juba, sends its staff on courses overseas and organises its own in-service training.

In the past the estate has been a substantial purchaser of food crops from the surrounding area. The policy has been to make the estate as self-sufficient as possible and a mechanised Food Production Unit

(FPU) of over 120 ha had been cultivated to maize and other crops. In addition, workers have been cultivating areas around their houses. If peace prevails and adequate funds are provided to re-establish and expand the FPU, indications are that the estate could be virtually self-sufficient in terms of its staple food requirements.

The Consultants believe that NCA and UTTP should cooperate as fully as possible with regard to agricultural research activities and should consider the possibilities for NCA extension staff becoming involved in the smallholder crop production within the UTTP area. The UTTP project is, understandably, anxious that there is no conflict over land in the Project Area, and that tea planting can expand unhindered in the future; hence the potential area for smallholder agriculture is somewhat limited.

3.4 ANIMAL PRODUCTION

3.4.1 Livestock Population

The statistics on animal populations and production held at the Regional Office in Juba and the District Office in Torit are incomplete. No census has taken place to determine the livestock population thus the figures used by the Department (Table 3.4) can only be regarded as very rough estimates. The figures do show, however, that it is the Eastern Province of Equatoria Region that has the greatest number of livestock. It can be further concluded that in the Study Area, which is most of the Eastern Province, the majority of animals are in Kapoeta District.

TABLE 3.4 POPULATION OF LIVESTOCK

	Cattle	Sheep	Goats
Eastern Province	1,200,000	900,000	800,000
Western Province	900,500	600,000	500,000

Source: Department of Veterinary Services, Juba.

3.4.2 Animal Health

The main diseases in the Study Area are rinderpest, anthrax,

haemorrhagic septicaemia, foot and mouth, contagious bovine pleuro-pneumonia and contagious caprine pleuro-pneumonia. They are all endemic; outbreaks can occur at any time and result in many deaths. Other diseases which are also endemic are trypanosomiasis and East Coast Fever.

In theory the Department of Veterinary Services is responsible for regular vaccination programmes and the inoculation of all animals which are moved from one area of the Province to another. In practice the facilities available to the Department's office in Torit are very limited preventing the staff from fulfilling the duties in reducing or containing animal-disease outbreaks. Indeed, some senior staff of the Department said that even animals moved by trucks were not given the necessary inoculations.

3.4.3 Livestock Slaughter

The data detailing the number of livestock slaughtered (Table 3.5) at the main Government slaughterhouses were incomplete. They do, however, clearly illustrate that Torit is the main market for meat, and that in Kapoeta, where the cattle have an important role in the social custom of the Toposa, the small stock are a much more important source of fresh meat.

TABLE 3.5 ANIMALS SLAUGHTERED NOVEMBER 1984 - NOVEMBER 1985

	Cattle		
Slaughterhouse	Male	Female	Sheep and Goats
Torit	1985	312	102
Kapoeta[1]	410	58	3375
Ikotos	38	4	48
Chukudum	n.d.[2]	n.d.	n.d.
Nimule	63	2	-

Source: Department of Veterinary Services Torit and Juba.

Notes: [1] Extrapolated from six months data.

[2] No data.

It should also be noted that the main meat market in Kapoeta lies just outside the town limits; this is, presumably, to avoid paying council fees. The numbers slaughtered are unlikely to be included in the official statistics.

The total animal value of officially recorded slaughtered cattle would be around £S 1.0 M and for sheep and goats around £S 0.1 M. It is likely that actual consumption is far higher, but no estimates can be made.

3.4.4 Hides and Skins

Animals slaughtered at the Government slaughterhouses belong to butchers who have purchased them on the local market. After being slaughtered the owner's staff flay the animals and then hand the hide/skin to Government Hides and Skins staff who wash, clean and peg it out for drying. Once it is dried the Government staff take it to their storehouse where it is treated with insecticide and kept until the butcher brings a trader to the store. The trader inspects all the hides/skins the butcher has to sell and negotiates a price from which the butcher has to pay Government £S 0.20 per hide and £S 0.10 per skin to cover drying and storage costs. This is a highly subsidised service, designed to encourage butchers to have their hides and skins cleaned and properly dried.

In the past all hides and skins were sent by barge to one of the large tanneries in Khartoum but now that the river transport system is not functioning an alternative outlet has had to be found. The Department of Veterinary Services says that in 1984/85 some 19,255 hides and 5,600 skins were exported to Kenya for tanning and further processing; there are no tanning facilities in Equatoria Region. Sun dried stretched hides are worth approximately £S 12 locally and skins around £S 2 or 3.

Total local value of exported hides and skins, based on the Veterinary Department statistics were thus of the order of £S 260,000 in 1984/85. No estimate of the value of locally utilised hides and skins could be provided, but it is thought to be very small.

Despite the low total value of the exported hides and skins, it should be mentioned that these are virtually the only items which are exported from Equatoria. Sudanese traders who import produce from Kenya are very keen to obtain these products as a source of foreign exchange when sold in Kenya and to make some use of the Trucks which normally return empty. Foreign buyers, including Kenya Kikuyu and Somalis, also visit Southern Sudan in search of hides and skins.

It is likely that actual exports are substantially in excess of the officially quoted numbers.

Finished leather is imported into Southern Sudan by a small leatherwork enterprise established recently in Yei and by a newly established, but currently dormant, shoe manufacturing business in Juba.

3.4.5 Staff

The staff involved in animal production, veterinary duties and hides and skins work in East Bank Equatoria are detailed in Table 3.6.

TABLE 3.6 LIVESTOCK AND VETERINARY STAFF

NCA[1]		Government (Continued)	
Veterinary Officer	1	Dairy Technical Assistant	1
Veterinary Assistants	4	Hides and Skins Technical Assist.	1
Livestock Extension Officer	3	Veterinary Head Stockman	1
		Veterinary Stockman	18
Government		Veterinary Attendant	3
Veterinary Officer	2	Hides and Skins Attendant	3
Range Management Officer	1	Inoculator	1
Livestock Officer	1	Clerk and Bookkeeper	7
Hides and Skins Officer	2	Driver	4
Dairy Supervisor	1	Messenger	4
Veterinary Assistant	5	Watchman	3

Source: NCA and Department of Livestock (Torit).

Note: [1] This does not include animal power staff.

3.5 ANIMAL POWER

3.5.1 Administration and Staff

The training programme for draft animals is one of the responsibilities of the Animal Production and Veterinary Section of the NCA Agricultural Project. Each of the five RDCs runs an animal draft training programme, but regrettably there are very few easily accessible records. The numbers of staff are given in Table 3.3 but no up-to-date data, on either a Study Area or RDC Area basis, could be obtained on the number of oxen that have been trained, the number of ox-drawn implements or the number of farmers who have been trained to use draft animals.

The lack of statistics is, and will be, a major constraint limiting the effectiveness of future planning, particularly the identification of field staff requirements, and the possibility for and value of any future evaluation of the animal power programme. The only statistics the Consultants could find were in the 1983 Hunting's Report (Reference 1), the NCA 1984 annual report and the stock cards of the TDCU stores section. The figures obtained are summarised in Table 3.7.

TABLE 3.7 NUMBER OF OX PLOUGHS AND TRAINED OXEN

Period	Number of Ox Ploughs	Number of Trained Oxen
Up to and including 1984	546	481 [1]
1985	212	n.a. [2]

Source: References, See text.

Notes: [1] An unknown number of these animals have been stolen by cattle raiders.

[2] Not available.

A major objective of the draft animal programme is to appoint at least one Ox Instructor to each RDC but as far as could be determined

only those at Arapi and Chukudum are in post. The Instructor's duties are administration/supervision of the programme and the training of Ox Drivers. The Drivers' duties are to train the oxen to be draft animals and the farmers to operate such animals.

The NCA veterinary staff follow up the ox training programme to advise on animal husbandary matters and to provide any animal health services that may be required. NCA headquarter's staff estimate that more than 90 per cent of trained animals are visited by the veterinary staff but it is still impossible to obtain a schedule of the location and/or number of trained animals.

3.5.2 Methodology

The draft animal training programme began in 1976 with all training being done on the RDC farm. This approach had to be amended because some farmers were sending their oxen for training although they themselves did not visit the RDC to be trained in handling the oxen. Indeed some farmers just left their animals at the centre to be looked after by RDC staff.

There are several different methodologies in current use, as follows:

- Training of both oxen and their owner on the farm itself;
- purchasing oxen on the open market, training them at the RDC then selling them as trained animals;
- establishing a series of sub-centres where several animals can be trained at the same time.

Each of these systems has some merit. The first ensures that the farmer is fully conversant with the animals he will be using; also he learns about training the animals which will be of great use when he has to replace the oxen or decides to increase the number of draft animals. The second ensures that only large healthy animals are purchased and provides a quarantine period to prevent the spread of disease, it also means that a farmer can purchase a pair of ready

trained oxen and it provides more draft animals for working in the RDC farm. The third method improves the output of the ox drivers by enabling them to train several pairs of animals at the same time.

3.5.3 Acquisition of Draft Animals and Implements

Most farmers buy their animals using funds obtained by selling surplus agricultural production. If a farmer buys a pair of trained oxen from the RDC he pays the same price that the RDC paid when making the initial purchase; no charges are made for veterinary attention or feeding during the training period.

The only credit facilities for purchasing oxen are those offered under the LIS programme. The loan to the farmer usually covers the plough, current cost £S 186.00 (compared to a 1985 price of £S 84.00), of which the farmer pays £S 150.00 and NCA pays £S 36.00; it may also include the cost of yoke/harness. If the farmer intends to use a traditional wooden beam-yoke, he may make it himself but NCA has developed and recommends an improved harness made from a car tyre which costs slightly less than a padded traditional yoke (Table 3.8). Approximately twenty LIS loans for ox and plough purchase have been given so far.

The Consultants were concerned that the Catholic Mission at Palotaka is negotiating with Oxfam to provide ox-drawn equipment at half price. It is recommended that NCA should try to persuade the Mission not to implement the proposal on the grounds that it might undermine NCA's animal power programme.

As can be seen from Table 3.8 there is quite a wide range of yokes and harnesses available from the Village Technology Unit. It is likely, however, that the high price of some items, such as leather collar and harness, will prevent them from becoming popular among local smallholder farmers.

Whilst no clear data were available on the numbers of ox-ploughs in use in the Eastern Areas, it is evident in the Western Area that there has been a real breakthrough. In Madi alone over 200 have been purchased, mostly for cash, and many farmers expressed their satisfaction with their performance. One farmer, who won a prize at the local agricultural

TABLE 3.8 PRICE OF DRAFT ANIMAL EQUIPMENT (£S)

Item	Oxen		Donkey	
	One animal	Two animals	One animal	Two animals
1. Padded traditional yoke	24.0	30.0		
2. Leather collor harness	102.0			
3. Item 2. with breaching strap	168.0			
4. Webbing harness			49.5	
5. Car tyre harness	20.0		20.0	
6. Padded improved yoke		57.0		
7. Halter		22.5		22.5
8. Bridle				42.0
9. Cart-Moely axle, platform, spare wheel [1]	352.5		352.5	
10. Item 9 with body box [1]	417.0		417.0	
11. Item 9 with Audi axle [2]	427.5		427.5	
12. Item 11 with body box [2]	485.5		485.5	
13. Cart, Audi axle, platform, spare wheel [3]		442.0		
14. Item 13 plus hand brakes [3]		457.5		
15. Item 13 with body box [3]		502.5		
16. Item 14 with body box [3]		517.5		

Source: NCA.

Notes: [1] Load - 400 kg.
[2] Load - 600 kg.
[3] Load - 1000 kg.

show for his achievement, ploughed 47 feddans with one plough and a pair of oxen over a three month period. Many farmers claimed substantial increases in their cultivated areas others mentioned that yields had also improved; whilst this could not be substantiated it was felt that this might have been as a result of deeper ploughing. Several farmers did contract work for other farmers, charging between £S 20 - 40 per feddan.

The main problems appeared to be the shortage of supply of spare parts (nuts, bolts, shares, chains) from the TDCU. A new and potentially very serious development was the incursion of raiders from the north of Acholi attempting to steal only recently introduced cattle. As the Acholi are not traditional cattle raiders and are not suitably armed to resist such attacks, such activities could develop into a one-sided affair, with dire consequences for the Acholi.

Carts are the only other item of ox-drawn equipment which is available in the Study Area. As few farmers can afford the purchase price (Table 3.8) of even the cheapest model, the Arapi RDC has instituted a simple loan scheme whereby the farmer pays a deposit of £S 150.00 followed by monthly installments of at least £S 30.00. There are no reported cases of farmers defaulting as they do with LIS loans. To date Arapi RDC have released around 18 ox carts, plus a further two sold for cash in Kajo Kaji, whilst around six are in use around Palotaka. One hundred units have been constructed, but details of their distribution in the east were unavailable. It is known however, that they were being accepted eagerly in Kapoeta, for example.

In their 1986 work plan the Arapi and Palotaka RDCs envisage making and selling around 20 - 30 new carts, following the evident success of the units already sold. Carts were seen regularly transporting grain, water, firewood, passengers and sugar cane. Rapid tyre wear and frequent punctures appeared to be the only major problems encountered.

Ox-carts are proving to be of particular help to the women in that it allows them to collect larger quantities of firewood than was possible in the past and thus obviating the need to collect wood daily. They are used to carry water, also a woman's chore, and to transport children, tools and agricultural produce to the fields. In this way women are able to make more efficient use of their time and effort.

The RDC also plans to procure, through the TDCU, 20 ox-drawn weeders which will be sold to farmers. There are already several in the area, having been brought by the refugees from Uganda. It was felt that it should be easy to fabricate such items locally, if the raw materials were available. Ox-drawn weeders are generally operated by

men, who in the Madi area, traditionally help with the weeding of row-planted crops but leave that of broadcast crops to the women.

3.6 FORESTRY

3.6.1 Background

Sawn timber has been produced in East Bank Equatoria for many years with peak production occurring during the war periods 1914-18 and 1939-45. In the early 1940s there were two saw-mills operating at Katire but one of these closed down in 1943 and was replaced with machinery to make match-sticks. Production of this item ceased in 1945.

Constraints such as the high cost of imported items (fuel, machinery), the distance to the main market in northern Sudan, and the scattered nature of the productive forest in which there was a low density of exploitable species, adversely affected the trade in sawn timber and railway sleepers. Export to northern Sudan continued until the 1950s but, as the cost of imported timber from Europe gradually fell, the export of timber from Equatoria to other parts of the Sudan became uneconomic. However, exploitation of the high forest has continued to the present day to meet the local demand for sawn timber.

In addition to forestry development in high land areas, there has also been some limited development of both natural and planted lowland forests.

The main highland forest enterprise is the Imatong Mountains Forestry Development Co. Ltd. A saw mill has also been installed by UTTP.

3.6.2 The Imatong Mountains Forestry Development Co. Ltd

This enterprise, which was operating as a project for many years, has recently changed its status and is now a government-owned company. In the past, and particularly during the period 1978-84, it received substantial assistance from ODA which provided capital equipment and technical assistance. The British Council assisted with scholarships for overseas training.

The events of early 1985 resulted in the evacuation of the expatriate staff, the cessation of ODA funding to assist with purchases requiring foreign exchange and a dramatic reduction in the demand for timber. It appears that the change in status must be of a somewhat temporary nature, as unless the company can overcome its foreign exchange problem, as well as find a suitable external investor, the future prosperity of the company maybe in some doubt.

The enterprise has very good potential, controlling a large area of planted and natural forest of which less than 80 ha per year are cut down. Around 80 ha of new plantation on previously afforested and on new land are established annually. It is the main source of construction timber in the area and in late 1985 was producing around 20 m^3 daily. It delivers most of its sawn timber to a sales depot in Juba. Over the years it has built up a complement of skilled staff who are capable of handling virtually all of the maintenance and repair work. Total staff numbers are now around 800, a slight reduction from previous totals; the reason for the reduction was more on the grounds of efficiency than as a result of the insecurity problem. Approximately 100 staff are skilled and have been recruited from a wide area, the supply of locally available skilled people being very scarce.

Unskilled wage rates are around £S 50/month whilst skilled rates start at around £S 65/month.

In addition to the production of sawn soft and hardwood timber, the company operates a carpentry workshop employing around 12 carpenters making furniture primarily for the Juba market and a small agricultural unit producing vegetables and fruit for sale.

There are proposals to expand the carpentry workshop, with the purchase of more sophisticated machinery and employment of more staff. Current proposals are to establish a factory capable of producing flat-pack high quality furniture for the export market. The total proposed value of woodworking equipment is around £S 1M to 1.5M; there is a possibility that part of this might be obtained from the Mongalla industrial complex where vast quantities of equipment still lie in crates. Estimated power requirements are between 50 and 100 kW.

For the past few months monthly output has been in the order of £S 180,000; on an annual basis the gross value would thus be around £S 2.0M

Despite the existence of a large number of salaried staff, a substantial number of whom are skilled, the 24 hour availability of electricity (free to most people) and the fact that the enterprise has operated for many years, there is very little evidence of economic spin off. Eight shops used to be open, there are now only four, all owned by Arabs. A small kiosk is also functioning, run by a local inhabitant. There is a small fruit and vegetable market which opens daily and cattle are slaughtered three or four times weekly. Little commercial use had been made of the electricity, its only function being to light houses, shops and streets. One or two people were said to use electric clothes irons. Very recently one of the shopkeepers has installed an electrically powered grinding mill.

Many staff are housed in company houses and provided with free water and electricity. The main village of Katire, plus associated villages has a total population of around 7,500 people.

No scheduled transport services run from Katire to Torit; company trucks and Land-Rovers run regularly to Torit and Juba and assist the local people.

Most of the basic food requirements are met locally, although there is an overall short fall, which is made up by purchases from Torit and Juba.

3.6.3 Kalisoni Saw-Mill

This mill, located adjacent to a natural forest reserve, not far from Palotaka, operates spasmodically as and when it is provided with fuel, oil and spare parts. No production data were available; the general impression was that very little was produced. Over 90 people are employed, including several with years of sawmill experience and others with formal training. The mill was equipped with a motor which was in good running order, unfortunately the saw blades were generally in poor condition, whilst the logging section depended on a

wheeled tractor which was only just running. A workshop section produced some simple furniture using rudimentary hand tools. A replanting programme, ammounting to around 4 feddans/annum and concentrating on teak, has recently been initiated. It was somewhat depressing to witness the very low level of activity of this enterprise, resulting from the inability of Government to provide the basic inputs necessary to sustain effective operation.

3.6.4 Upper Talanga Saw-Mill

A simple saw-mill, using circular saw blades has been installed under this project. Its prime purpose is to utilise the timber being felled to make way for the tea plantations. The mill has a capacity of around 5 m^3 per day, but has rarely achieved this throughput. Marketing the product was said to be a problem; considering the declared shortages of timber throughout the western part of the Study Area and in Juba and the lower prices charged by UTTP than by Imatong Forestry, the Consultants believe that the marketing problems were not serious ones.

3.6.5 Exploitation of Lowland Forests

The Forestry Department in Juba has a small programme of replanting and maintenance of several lowland forest reserves. Three of the reserves were planted pre-independence but, like several others planted after independence, they have been seriously damaged by fire and indiscriminate cutting by the local population.

Only the reserve at Palotaka is being exploited.

Currently there are eleven lowland forest reserves as follows:

Palotaka: 500 f of natural forest containing Khaya, Albizzia and Terminalia spp which can be used to produce sawn timber. A small area is being replanted with teak (Tectona grandis), mahogany (Khaya spp) and Maesopsis spp.

Lerwa : 16 f have been planted with teak for building poles, which take 6 - 7 years to produce and sawn timber which will require 30 years.

Kerepi: 500 f planted by the British were subsequently destroyed; the Forestry Department replanted part of reserve with Cassia Siamea but this was also destroyed by fire.

Shukoli: 2447 f of teak and cassia planted by the British and subsequently destroyed. The teak that remains is coppicing and producing building poles which are cut by the local people.

Parajok: 77 f were planted with Cassia siamca by the local council but the trees were destroyed by fire.

Vokade: This is a proposed area of 1500 f to be planted with teak, mahogany and Cassia spp. by the Forestry Department. Although the reserve is not yet gazetted, some four feddans were planted in 1985.

Okaru: An old reserve of 850 f which has been destroyed by fire.

Maguri: 16 f planted with Cassia siamea.

Liria: The size of the reserve is not known. It was planted with veem and cassia by the British and subsequently destroyed by fire and illegal felling.

Palwar: The Forestry Department are actively planting teak and cassia; total area to be planted is 150 f.

Agoro: In 1983, five feddans, or half this reservc were planted with teak by the Forestry Department.

There is no programme for large scale expansion of the reserves. The Department plans to develop slowly by replanting those areas which have been destroyed together with limited expansion of other reserves. The Department estimates that 25 labourers can replant about ten feddan per year in addition to their maintenance duties.

3.6.6 Other Forest Products

Although tree species yielding resins such as frankincense are known to occur in the Study Area, there is no exploitation of this

commodity. In 1981/82 a member of NCA working at the Torit/Hilieu RDC collected several types of resins of which samples were taken for quality testing in the UK in December 1983. The results of the tests were disappointing but it is likely this was more a function of the long period between collection and testing the sample than of its inherent aromatic characteristics.

3.6.7 Beekeeping and Honey Production

In general, beekeeping and honey production are of minor importance though there are some beekeepers in all parts of the Study Area. The Forestry Department have no plans for increasing their interest in this activity.

The mission at Palotaka, however, has established a 'Bee Club' which now has 40 members. The club's objectives are to introduce improved hives, improved beekeeping techniques and improved processing of the honey. An assessment of the market for improved quality honey is now being undertaken in Juba; if it becomes apparent that there is a demand for a cleaner, better quality product, then the mission will try to increase production by the local beekeepers.

In some parts of the Study Area (Madi for example), honey is fermented to produce Duma, a very popular, alcoholic drink which sells for about £S 0.50 per litre.

3.6.8 Employment

The number of staff employed by the Forestry Department are detailed in Table 3.9.

TABLE 3.9 FORESTRY DEPARTMENT STAFF

Location	Post	Number	Location	Forest Rangers	Labourers [2]
Juba	Director	1	Palotaka mill/reserve		100 [3]
	Deputy Director	3	Lerwa	1	40
	Conservator	2	Vokade	1	16
	Asst. Conservator	1	Okaru	1	35
	Forest Officer	1	Magwe	1	31
	Forest Ranger	2	Palwar	1	23
	Junior Staff [1]	96	Agoro	1	13

Source: Forestry Department, Juba.

Notes: [1] Drivers, mechanics, nurserymen, carpenters.

[2] Employed on weeding, maintaining fire breaks, trash removal.

[3] This figures also includes staff at the sawmill.

3.7 FISHERIES

Fisheries development is the responsibility of the Department of Fisheries in Juba whose main activities are centred on the development of fish ponds to the west of the Nile. That area is served by ten Extension Officers, all having received three years post-secondary school training at the Fisheries Institute, Khartoum.

In Yei and Maridi Districts the field staff completed the construction of four ponds during 1985 and work was started on another seventeen which will be completed in 1986.

Their 1986 programme will cost about £S 110,000 and involves advising on pond building, net making, fishing and fish processing. The main species being introduced into the ponds are Tilapia, Clarias and Latus.

The development programme for East Bank Equatoria is at a much lower level, employing only two field staff. The Fisheries Extension

Officer at Nimule is involved in advising fishermen how to make and repair nets, how to use the nets in the most efficient manner and how to improve the quality of smoked and sun-dried fish. Some financial assistance is being provided from USAID funds. The other Extension Officer was sent to Torit in 1984 to assess the development potential for fishing and fish pond construction; to date this latter individual has given no indication of the progress of his work or whether he considers there may be some potential in rivers such as the Kinyetti or in pond development.

Many people are involved in fishing in the Nimule area but it is mainly on an informal basis with the catch being consumed in the house; any surplus may be smoked and sold at the local market. The Fisheries Department in Nimule issued only 28 licences (cost £S 28.00 each) in 1985; these entitled the holder to catch and sell fish on a commercial basis. There was a larger number (59) of applicants for nylon line, hooks and the polypropylene rope from which gill nets are suspended.

In the past there was a cooperative society at Nimule in which most of the members were involved with fishing. This society (Gordon Guru Primary Society) is no longer active but it is still on the TDCU books as an unregistered primary society and it still has deposits of £S 200.00 with the Union.

Twisted nylon yarn for making/repairing nets is available in Nimule at £S 10.00 for 500 gm, equivalent to about 300 m. The fishermen have to make their own nets as none are available locally though they are on sale in Konyo-Konyo market, Juba. A hook for catching nile perch costs £S 2.00 in Nimule while smaller hooks are £S 0.25 - 0.50 each.

The nets used by Nimule fishermen are mainly anchored gill nets 10 m - 15 m long, 1 m - 2 m deep with a 50 - 100 mm mesh, or 3 m - 4 m diameter purse-seine nets. Further north, where the river flow is slower, some fishermen are able to use a beach seine net which can be 100 m - 150 m long, 1.5 m - 2 m deep, and having a mesh of 75 mm - 125 mm.

There are no statistics on current levels of production or the quantities sold in local or urban markets. The Department of Fisheries

in Juba says that production was abot 50,000 t per year in the late 1970s with a substantial qualtity of sun dried and salted fish being exported to Zaire. This trade virtually dried up after trade with Zaire was restricted in 1982. While the production figure is undoubtedly an exaggeration, it does suggest that fisheries may have played a more important role in the local economy than they do today. Any decline, however, is not due to a fall in demand; people throughout the Study Area indicated a strong, but unsatisfied, demand for fish.

The main specied being caught in the Nile are nile perch, Tilapia, Clarias and Citherinus. The current price of fresh fish in Juba is around £S 4.00 per kg.

Fishing provides an important source of cash to the Lokoro people who establish camps along the Kinyeti River. The fish are dried and sold in Torit and Juba. Elsewhere, apart from in the Nile, fishing is not of major significance, as there are only limited fishing grounds within the Study Area.

3.8 MINERALS

3.8.1 Lime

Exploitable deposits of lime are to be found at three locations within the Study Area; at Kapoeta, where they are already burning the lime; at Liria; and at Kinyeti (Reference 13).

Good quality lime - the exact chemical composition is not recorded - is being processed in two kilns at Kapoeta (Reference 14). Each kiln is capable of burning 250 t of limestone consuming 150t of fuelwood per burn, which takes 7 - 10 days. This will produce 40 t of burnt lime which is sold in 80 kg bags. Burning is only done in the dry season, and only 4 - 5 batches are processed annually. Without seeing the site it is difficult to comment on the production technique, but it is thought that this method of production is not very efficient; an improvement could be made in fuel consumption and in production rate by changing from the batch system to a small continuous kiln.

Of the other two deposits little is known of the Liria deposit, but

discussions are presently proceeding between NCA/SP and the Ministry of Industry and Mining concerning the Kinyeti deposit. However, this lime is high in Magnesium (20.9 per cent) casting some doubt on its suitability as a cement raw material.

3.8.2 Clay

Clay deposits for brick making are already being exploited throughout the Study Area by small artisanal brickmakers, by the Equatoria Materials and Construction Company (around Juba) and by contractors supplying NCA/SP.

Also, village level pottery is found in most areas where pots for food storage, water and cooking are made. Clay deposits are, in some instances, treated by the local villagers with extreme respect - for instance in Loronyo - where the women are not allowed to shout or dance.

3.8.3 Gold

Deposits of gold are found throughout the Study Area but in particular near Kapoeta and near Kit. These can only be worked by small scale washing operations and yield only a few grammes per cubic metre of gravel mined (Reference 15). The main centre of the small scale gold miners is near Kapoeta and at present there is no government control except to licence traders who buy the gold from the local miners. The Government have recently considered a US$800,000 proposal by Geosurvey to survey and exploit prospective areas, but there has been no progress because of the absence of government funding.

It is thought that considerable numbers of people are involved in gold panning and that the quantities of gold sold are substantial. It is keenly sought after as a potential source of foreign exchange when sold in Kenya for example.

CHAPTER 4

THE SECONDARY SECTOR

4.1 INTRODUCTION

This is the least developed sector, in terms of both large and small scale enterprise. Mention has already been made in Chapter 3 of tea processing and sawmilling; outside those two subsectors all remaining activities in the secondary sector are small scale and of limited importance.

In the present political climate this is not surprising as few people are willing to invest in manufacturing activity in high risk areas. It is normal practice in such circumstances to confine interest to trading, to the extraction of maximum profits and the channelling of such profits to locations which offer better and safer opportunities for investment. It appears to be a generally accepted fact that most of the trading profits generated by non-southerners in the south end up in the Khartoum area. There is very little evidence of any investment in business facilities or in private real estate in Juba or in the rural areas.

4.2 MANUFACTURING IN JUBA

There are only three manufacturing businesses of any size in Juba. The Haggar Group of Companies whose activities are mainly trading and the production of tea and coffee, are equipped to produce cigarettes and cigars. Due to competition from smuggled imported brands, however, the demand for locally produced cigarettes is very low and most of the tobacco produced is flown unprocessed to the north.

A soft drink and ice plant, the Amit factory, has been established within the past two years, and despite the very difficult circumstances, it is operating successfully. There is an unsatisfied demand for ice in both Juba and in Yei.

The shoe factory started satisfactorily, and the product was well accepted locally; unfortunately problems over supplies developed and the factory has since closed, possibly temporarily.

Since 1972, over 66 applications for licences have been lodged

with the Department of Trade and Industry, covering a wide range of interests including the production of nails, soap, clothing and tiles. Only the enterprises already discussed were actually established. None of the applications applied to the Study Area; four were for Yei.

An inspection of Table 2.5 indicates the dearth of employment opportunities in Juba's manufacturing sector.

There is a proposal to install an automatic bakery in Juba; some government officials expressed their reservations over the proposal as it would be likely to put a large number of small bakeries out of business. Furthermore it would rely on imported fuel rather than on locally produced charcoal.

4.3 AGRICULTURAL PROCESSING

There has been little change in the situation within the Study Area since 1983, where the only processing of any significance was grain milling. As shown in Table 8.5, there are approximately 20 cooperatively owned mills; there are estimated to be between 15 and 20 other mills operating within the Study Area. Seven of these are hammer mills supplied by the TDCU. The general impression is that the mills are being better utilised than they were in 1983, throughput having been increased substantially. Milling charges are around £S 1.50 per tin of sorghum (16 kg) for hammer milling by the TDCU and £S 2.00 per tin for stone grinding (which gave a preferred product). In real terms they are a reduction on previous rates and could explain, in part, why the volume of business has improved. Rates for maize grinding are higher at around £S 3/tin.

It is reported that there are now only two hand-powered coffee hullers in Palotaka based at the RDC and the Palotaka Catholic Mission (compared to three in 1983). The sugar-cane crusher installed at Palotaka RDC in 1982 has since been loaned to a private farmer who is using it with some success. When he was visited without prior notice he was found to be busy preparing brown sugar, selling it by small tin (containing around 250-300 kg) for £S 1. He was unsure, however, whether the project was worthwhile as he had not calculated the costs involved in producing sugarcane, cutting firewood and processing the cane and

sugar extraction. The unit at Arapi RDC remains unused.

The Father at the Palotaka Catholic Mission is planning to install an oil-mill in the very near future, to provide a processing facility for the local people. He anticipates that sunflower would be the main crop, and has initiated moves to determine which varieties would be the most appropriate and to produce seed.

The Consultants visited Yei for discussions with a visiting ODA specialist in oil-milling, who had been testing two mills already installed at the Equatoria Region Agricultural Project's (ERAP) headquarters. The two machines were a Simon-Rosedowns Mini 40 and a Komet (from W. Germany). Tests were carried out on a number of samples of sunflowers and groundnuts and combinations of these. The effects of preheating and of reprocessing the cake were also monitored. Whilst it is too early to come to any positive recommendations concerning the choice of machine, or of the most efficient way of producing oil, preliminary findings were that there was a definite advantage in combining the two oilseeds. It was also noted that the anticipated rate of wear of the crushing mechanisms would be quite high, and indicated that unless good use could be made of the oilcake, the financial viability of the whole process might be questionable.

More definite results would be available by mid-1986. In the meantime, counterpart staff at ERAP who are dealing with the testing, are in a position to explain to any prospective purchaser of an oil-mill, the technical aspects involved.

4.4 SMALL-SCALE MANUFACTURING

4.4.1 Carpentry

Medium scale carpenters' workshops employing about 12 people each are to be found in Juba at the Equatorial Materials and Construction Company, the Forestry Department, and at the Imatong Mountain Forestry Project in Katire.

Smaller workshops can be found in town centres such as Torit but also in villages such as Loronyo, Keyala, Ikotos, Loa and Parajok.

They all use hand tools producing simple furniture - chairs, tables, beds and cupboards - in the main to order but some do have an unsold stock. Their prices vary considerably and generally match the purchasing power of the local people regardless of the cost of production, resulting in some businesses making marginal profits - if any.

Timber is obtained either from Torit market (coming from Katire), Kalisoni sawmill or Upper Talanga sawmill depending on their proximity. A carpenter in Loronyo regularly cuts his timber from the forests around him travelling at most 10 km. He uses crude tools which, fortunately, means that only suitable branches are chopped from the trees rather than wholesale felling of trees. NCA/SP provides a valuable service in supplying at cost such items as nails, screws, and glue to these workshops and in some instances has helped with the supply of timber.

Tools were obtained through NCA/SP either as a part of their Village Workshop programme or now through the Local Initiative Support (LIS) scheme. In all cases of workshops visited the care of their tools was not as good as would be liked; nor were the workshops very well organised.

Markets did not appear to be a problem, the carpenters selling to local people, government out-stations or army posts; but it was clear that their pricing policy was geared to the perceived ability of their customers to pay. Supply of raw materials was always a problem, mainly due to transport difficulties and expense. Credit was not given by their suppliers nor was it passed on to their customers. As a result bulk purchasing to reduce transport costs was difficult and rarely happened, thus reducing potential profits and hampering growth.

Most workshops visited reported fewer carpenters working now than when established; and some workshops were no longer operational (such as one in Lerwa which had reportedly burnt down and one in Keyala whose stock of timer and tools were stolen). The workshops in Kapoeta and Chukudum are reported to produce items only if customers supply the timber from which the furniture is to be made.

Crude carpentry as required for the construction of roof structure,

door and window frames is found throughout the region but rarely as a commercial business activity. Of the workshops visited carpentry was their only job - some did not even take time off for cultivation. The first generation of carpenters received some formal training either at Torit Secondary Technical School, Loa mission, or by NCA/SP's Village Technology Unit. They then passed on skills to their sons, relations or workers.

4.4.2 Blacksmithing

(a) Juba

A major concentration of blacksmiths is found in the Konyo Konyo market in Juba. About 11 workshops are operating employing up to ten men each on a daily basis to make hoes, knives, spears and axes satisfying a rural market. Traders and individuals come to the market to buy these items either for resale or for their own use. Most of these blacksmiths make a range of hoe styles to suit the preferences of the different ethnic groups. Sales of hoes is seasonal, the greatest demand being before the cultivation time. Their tools are basic: Hammers, tongs, chisels, punches, makeshift anvils and a variety of bellows. Some blacksmiths had metal, hand cranked fans purposely designed for blacksmith bellows obtained from a Kenyan source and some use traditional goat skinned bellows. In Konyo Konyo these comprised two leather bags with pipes. Blasts of air to raise the charcoal temperature are achieved by rapid alternate movement of the bags on a two stroke basis; the first to fill the bag with air and the second to evacuate the air through the pipes to the charcoal fire. Quality of the items produced varies considerably and depends on the type of scrap metal used. Better quality items are fashioned from car or truck leaf springs which are made from high carbon steel; lower quality items are made from mild steel scrap such as galvanised water pipes. Hoes were reported to last one to two seasons depending on the quality of the raw material and the type of soil - whether sandy or clay. No blacksmiths used heat treatment to harden the hoes although some had heard of the technique. Most blacksmiths had learnt their trade from their forefathers or fellow tradesmen. Young school boys were seen picking up the skills early morning prior to attending school.

No clear pattern of problems arose from the blacksmiths questioned - some mentioned tools, others scarcity of raw materials i.e. scrap metal. This latter complaint is not surprising as unlike most other African regional capitals/centres Juba has no formal sector manufacturing base of significance from which the informal sector can feed. To some extent this has forced the blacksmiths to use inappropriate scrap. Before river traffic ceased to operate on the Nile, scrap steel was brought in from Khartoum; this source has now dried up (Reference 16).

Charcoal is in plentiful supply, being brought in from the rural areas, its price varies according to the quantity purchased which itself depends on the liquidity of the blacksmiths. However, there was every sign of this being a relatively prosperous activity.

(b) Study Area

In the rural areas blacksmiths are generally busy but all those visited were also farmers. Blacksmiths were visited in Loronyo, Longalet, Loruhoi, Imatong, Ikotos and Palotaka each reporting a similar story and pattern of operation, with some regional variations: In Imatong and Ikotos the blacksmiths used very crude tools - stone hammers and anvils - with remarkable skill to produce quality items. Elsewhere the blacksmiths were more advanced having metal hammers and makeshift anvils. With the exception of Loruhoi and Loronyo all the blacksmiths used a very traditional, but extremely effective, bellows made from two clay pots with outlet pipes leading to the charcoal fire, and leather covers which were alternately pulled up and down by sticks to create the blasts of air. The blacksmiths at Loruhoi and Loronyo had been supplied with 'improved' bellows by the VTU made from a heavy wooden structure and long inner tubes both of which were damaged and not operating.

There appeared to be a more social aspect to rural blacksmiths where a group of men with blacksmithing skills would use the same forge either together or at different times. Only one of those blacksmiths visited had received training - that being from ACROSS - all the others had learnt their skills from their

fathers. This particular blacksmith was making elaborate animal traps - the sort now banned in Western Europe - but showing clearly the level of skill he had learnt. Whilst he was aware of hardening techniques (which he did not use) the others were amused with disbelief about the technique! In Ikotos, where imported Chillington hoes were modified to suit local preferences, they were aware of the better quality of the implement, but unaware that this had resulted from heat treatment.

Prices of items are remarkably constant throughout all charging £S 10 per hoe, with the exception of Ikotos where they cost £S 2 more due to higher raw material costs, and all quoted £S 10 as the price of truck leaf springs obtainable from Torit market with little difficulty reported. Villagers from some distance around came to the blacksmiths to buy their products and local demand appeared to be strong. The blacksmith at Longalet reluctantly sent hoes to Torit market for sale (or exchange) only when his wife went, because he could sell all he could make locally.

They all considered tools as their major problem, and despite a seemingly thriving business activity there was some reluctance when it was suggested they bought them from Torit where they are available. This was probably due to the low profits made, as sale prices were also very low.

All the blacksmiths considered tool handles making to be a quite separate skill and talked of specialists elsewhere who made handles for the purchasers of the metal implements. However, some blacksmiths put their hands to tinsmithing, and bicycle repairs where they existed in the village, which was not often.

The blacksmiths visited would all welcome training, but commented only if it was available close to home.

A particular effort was made by the Volumtary Service Group (VSG) to develop blacksmithing in the Logotok area, where the people are renowned for their blacksmithing skills. They responded enthusiastically to the training provided by an expatriate

blacksmith. Unfortunately, because of rivalry between villages within the same ethnic group, the trainer was shot at, because, it was believed, he was teaching one village to make better spears; understandably, the trainer left.

4.4.3 Tinsmithing

This activity is closely allied to blacksmithing described above but deserves a section on its own. In K nyo K nyo there are probably twice as many tinsmiths working as blacksmiths, producing a range of products from whatever scrap they can lay their hands on. This appeared to be their prime problem. The major source of scrap comes from oil drums but the supply of these is erratic (probably as erratic as the fuel supply) and prices rise and fall accordingly. It was interesting to find one entrepreneur (previously a tailor) who spent his time looking for and buying sheet metal scrap; he then employed, on a piece-rate basis, tinsmiths to make items which he would then sell. This particular entrepreneur reported sales of up to £S 150 per day. Whilst this must be treated with some caution he did look very prosperous by comparison to the other artisans.

The main products made are tin trunks, brewing bins, charcoal stoves, buckets and cooking pot repairs; these are brought by individuals and by traders for sale in rural areas.

Skills are passed down and quality poor. This is partly due to availability of raw materials, but also due to lack of tools and equipment. Metal is cut with chisels - producing jagged edges, and folded with a hammer over a piece of angle iron - giving an uneven bend.

Little tinsmithing was seen in the rural areas outside that being done occasionally by blacksmiths, the exception being in Palwar where brew bins are made in surprisingly large numbers; and in Torit where charcoal stoves are made as an income generating activity by boys or as a secondary activity for men.

4.4.4 Tailoring

This is a widespread activity with most centres having at least

one tailor making clothes. The tailor is either self-employed with his/her own premises and machine; is self-employed renting a verandah from a shop owner; or employed by a shop owner on a piece rate basis. Competition is strong, the availability of second hand clothes reduces demand and entrepreneurs tend to move in and out of this sector somewhat rapidly.

Demand is rather seasonal, the busiest months being November and December in time for Christmas.

4.4.5 Miscellaneous

One of the most important sources of cash income is the brewing of beer and spirit. Whereas in the central area it would appear that most of the brewing is a family concern, further west more substantial quantities are sold for cash. As noted in one survey of the Acholi area, Reference 5, average household income generated from alcohol sales were around £S 200 in 1983.

Sorghum, millet and cassava are the main ingredients.

Brewing is not a traditional activity of the largest ethnic group in the Study Area, the Toposa, and it is only recently, particularly with development of the gold fields, that alcohol consumption has been of any significance.

Village level tanning of goat, sheep and cow hides is practiced mainly for domestic use - normally as bedding but also for sale to other people who do not keep animals. In Imatong tanning is a joint activity between men and women, each having distinct jobs in the process; skinning, stretch drying, dehairing, tanning using local vegetable matter and softening. Here two types of tanning agent are used: The most common being a red seed which is dried and crushed (atuthiji), but also they use the sap from a tree - nolichole - which is extracted by cutting and bleeding the sap from the bark.

There are no commercial scale tanneries in Equatoria. Proposals for a leatherworks and tannery to be located in Juba, costing around £S 350,000, were submitted to USAID by the Livestock Department in 1985.

As yet, there are no indications if the proposal has been accepted. The Catholic Church is proposing to introduce tanning at the Multi-Purpose Centre in Kapoeta.

Several people in the Madi Area were capable of making leather shoes but did not produce any because of problems with the supply of leather and soles. Throughout the area individuals make sandals from car tyres.

Pottery is also practiced for example by women amongst the Latuka and by men with the Lango of Ikotos. Local clays are used to mould the pots which are then fired in an open fire. Depending on the size of the pot it is either put into the fire or a fire is built around it and then ignited. This produces a low-fired pot but perfectly acceptable for their uses; mainly for crop storage. In Longalet women were selling elaborately decorated pots for between £S 25 - £S 35.

Basket and mat weaving using local reeds and bamboo is practiced with some seen on sale at Torit, Lirya, and Konyo Konyo market. The Upper Talanga Tea Project employs its own basket weavers (for tea collection baskets) because they cannot interest local people to supply their needs. However, indigenous bamboo is not hollow which makes it difficult to split and weave. This also produces a basket 2 to 3 times heavier than that made from hollow bamboo.

In Konyo Konyo market net making yarn is available from at least seven stalls. Yarn was also available at Nimule, at slightly higher prices; simple net making with Fisheries Department staff assistance, is carried out here.

A number of people have taken up weaving as a result of NCA's efforts in this field; this is discussed in Chapter 7. Other attempts have been made by NCA's Family Life section to introduce income generating activities, such as the manufacture of sisal bags, tying and dying of clothes fabrics and the fabrication of infants and childrens' schools; these have met with little success.

Bread, baked in very simple clay or sheet metal ovens, was

available in most of the larger centres. There were, for example, seven small bakeries operating in Torit, using between them around 0.5 tonne of wheat flour daily. Few other examples of locally produced cakes or biscuits were seen in the Study Area, except for some simple products in Torit and in tea shops on the main Juba - Nimule road. A wider selection was available in Juba; it is likely that the lack of demand in the rural areas is the main reason for poor development in this sector.

4.5 BRICK MAKING AND CONSTRUCTION

In Juba the Equatorial Materials and Construction Company have three brick yards producing reasonable quality bricks using an improved brick making technique introduced by the Intermediate Technology Development Group of the UK with help of Euro-Action Accord.

At Lorea they produce 20,000 bricks every two months from one firing in a permanent kiln which allows them to operate throughout the wet season; similarly at Kit and Gumbo they produce 27,000 bricks. Each site has 27 employees comprising a foreman, an assistant, four moulders and labourers, but they share a materials supervisor. Each moulder will produce 750 bricks per day which are air dried under a shelter before stacking in the kiln. They are experiencing slight problems at this stage with wind drying the bricks too fast but this is being rectified by building a half wall around the shelter. The employees are trained on-the-job, the senior positions being filled by the more able workers.

They pay £S 6.00 tax per lorry load to the forestry department for cutting fuel wood and it costs another £S 70 to cut and transport in labour fuel and maintenance charges. Each burn requires six loads representing a total fuel charge of about £S 450. They sell from the brick yard at £S 75 per 1000 i.e. £S 2000 every two months. This means there is £S 1500 to cover labour, overheads and profit.

EMCC have attempted to introduce clay roof tiles both the flat and roman style, but have not been very successful in finding markets.

The quality of the bricks at these factories could be improved by better clay preparation, and their production efficiency improved by batch

production and simple management.

Outside of this there are a few village brick makers producing a lower quality brick selling at about £S 50 per 1000 bricks. However, there are plans to hand over a brick production unit near Hilieu being managed by NCA for their building programme. Accounting procedures are presently being discussed.

NCA have also tried to encourage local contractors; one way was to introduce loans to its own staff for house building, another was to contract out some of its own building activities. Initially this worked well with their first contract for local staff houses but failed when the same contractor was granted a contract to build the Cooperative Training College. Details of this are reported later in Chapter 8.

CHAPTER 5

THE SERVICE SECTOR

5.1 INTRODUCTION

Table 2.4 provides an indication of the total number of employed persons. Of these approximately 80 per cent are involved in the service sector and are mostly Regional or Local Government employees. Their main responsibilities are health, education, administration, security and road maintenance. As most of these are of only indirect relevance to the Study, they are not discussed in detail. The reader should however, be careful not to conclude because there are substantial numbers of people employed in the service sector that services are provided. Due to a number of reasons, including the shortage of recurrent funds and transport facilities and poor supervision, only a small proportion of the employees are making any significant positive contribution. Health facilities are appalling, education standards are generally very low (over half of the teaching staff being untrained), road maintenance on Government roads has been virtually non-existent for around two years, and the law and order situation is not fully under control.

Discussion in this chapter is confined to the retailing, mechanical workshops, transport and freight, communications and electricity sub-sectors. Details of Government and other agency involvement in training, technology development and credit are given in Chapter 6, whilst NCA's involvement in credit, technology development and training are discussed in Chapter 7.

5.2 RETAILING

The pattern of retailing business within the Study Area reflects clearly the wide differences in economic development between the Madi/ Acholi (or Western) areas and the rest of the area. Outside the Western Area, retailing is concentrated in two main centres, Torit and Kapoeta with very minor centres at Chukudum, Ikotos and Katire. These centres serve approximately 370,000 people or 70 per cent of the total population of the Study Area. Non-southerners dominate the retail sector at all these centres, with the exception of Ikotos, where local people have, over recent years, managed to oust the traditional traders. During the Consultants' visit , several of the non-southern traders were

reported to have been murdered in Chukudum, and this is likely to mark the end of non-southern domination in this area for some time to come.

Whilst the pattern of control of retail business in this area leads, understandably, to some resentment by the local people (evidenced perhaps by the looting and burning of a shop in Torit during the Consultants' visit), the area is, in the Consultants' view fortunate that traders from outside are willing to take the not inconsiderable risks of operating in the area in pursuit of trading profits. Road conditions are very bad and during the Consultants' visits there were incidents where merchant trucks were hijacked and occupants murdered and where the army requisitioned trucks for military purposes.

Conditions change dramatically in the Western Area, where virtually all of the retail business is controlled by local people. Shops are far more numerous and are scattered throughout the area. In some areas it would appear that too many people have attempted to become retailers, and some businesses have been obliged to close down. Loa is a case in point. Within the Western Area, with a population of around 120,000 people, there are only around 6 - 8 retail businesses not in the hands of southerners. Whilst traditionally non-southerners dominated the retail sector here, the events prior to 1972 plus a deliberate attempt by the local people to get rid of outsiders, have resulted in the present retail business ownership pattern. It is reported that in some places consumers were actively encouraged not to patronise shops owned by outsiders, despite the lower prices they could offer, and that, as a result, virtually all businessess are now locally owned. Attempts by the outsiders to stifle competition by offering very low prices in their shops and by selling from trucks have generally failed.

Almost all shops are general ones, main commodities being staple food requirements, sugar, salt, cooking oil, soap, material, clothes, cooking utensils, crockery, buckets and bowls, cigarettes, and matches.

Juba is the main source of wholesale supplies, although Torit and Kapoeta act as secondary centres to outlying villages. Retailers normally buy their supplies from the numerous Juba wholesalers and then make their own transport arrangements; retailers often get together to

make up a full truck load.

Monthly turnover figures range from around £S 30,000 for say the 10 biggest shops in Torit to less than £S 100 in some of the small kiosks. Average turnover of most of the shops in Torit, other than the large ones, was estimated at around £S 15-20,000. In smaller centres such as Pageri, the larger shops, of which there are six, would have a turnover of around £S 12-15,000 whilst for the few smaller ones the estimated figure would be around £S 3000.

The majority of transactions are for cash, although most shopkeepers will take agricultural produce, primarily grain, in exchange. Many of the shopkeepers are also keen to purchase agricultural produce which is either stored and sold later at higher prices during the hungry periods or transported to Juba, Torit or Kapoeta. Truck operators bringing supplies from Juba try to fill up their trucks on the return journey, buying such items as agricultural produce, livestock, hides, bamboos, charcoal, firewood and locally hewn construction timber.

Table 5.1 provides a rough estimate of the number of retail outlets in the Study Area. These exclude cooperative facilities which are discussed in Chapter 8.

Petty traders generally operate in the open air and particularly at the important markets of Kapoeta, Ikotos, Torit, Obbo, Parajok, Pageri and Nimule. Many of these are farmers or members of the family selling their own produce. This is often a part-time occupation as most of the markets do not operate daily; furthermore there are periods in the year when farmers do not have produce for sale. When selling in officially designated market places, the local authorities impose a small market fee. The main items sold in these markets are locally grown produce, meat, dried fish, cassava flour, charcoal, firewood and locally grown tobacco.

The local retailers face numerous problems the most important of which they consider to be are the following:

- the high cost of transport;

TABLE 5.1 RETAILOUTLETS: STUDY AREA

	Location	Outlets	
		Large	Small
*	Torit (& environs)	60 [1]	35
	Katire	4 [1]	1
	Lafon	-	3
*	Ikotos	4	10
	Imatong	-	1
	Chakari	-	3
	Magwi	2	3
*	Obbo	3 [1]	5
	Palwar	-	2
*	Parajok	10	18
	Upper Talanga	-	12
	Owinykibul	-	4
	Other Acholi	-	5
*	Pageri	6	4
	Loa	-	2
*	Nimule	23 [2]	10
	Kerepi	-	8
	Opari	3	11
	Other settlements (Madi)	-	15
	Chukudum/Nagicot	5 [1]	7
*	Kapoeta	30 [1]	10
	Juba - Torit Road	-	10
	TOTAL	150	179

Source: Consultants' data.

Notes: * Important market centre.

[1] Mostly controlled by non-southerners.

[2] Four businesses belonging to non-southerners.

- the unavailability of credit facilities;
- the reported discrimination by non-southern wholesalers who charge more for their commodities to southerners than to non-southerners;
- the virtual exclusion of southerners by the authorities in Khartoum from obtaining import/export and wholesalers' licences;
- the costs in terms of cash and time wasted by official and non-official interference;
- the lack of business knowledge;
- the absence of cooperation between southerners (in contrast to the high degree of mutual trust and assistance which exists amongst the non-southerners);
- the difficulties in finding shop staff with high standards of integrity;
- the problems of finding and paying for construction materials to build secure business premises;
- the shortage of storage facilities for purchased farm produce.

These points are discussed later in this chapter.

5.3 MECHANICAL WORKSHOPS

There are few workshops operating in the Study Area outside those attached to formal sector and government activities. The Upper Talanga Tea Project has its own specialist workshop which it is developing; the Imatong Mountain Forestry Company has an established, well equipped, workshop and the government has the Motor Transport Department workshops in Juba and Torit.

One workshop in Pageri involved mainly in vehicle repair is now closed, the owner preferring the more profitable taxi business. The two workshops in Torit are surviving with vehicle repair work, welding and manufacture of metal furniture. One of these workshops services trucks from as far away as Nimule, but most of his customers are local (e.g. the TDCU, the Catholic Mission, the MTD and the Hilieu - Torit bus). The owner's major problem is getting paid for work done for the Government, but he appears to be reasonably successful. (His workshop and accounting are a total chaos so it is difficult to assess how successful he is). He is a well trained man, starting at Torit Secondary Technical School, training in East Africa, in North Sudan and at NCA. He is presently training three boys.

The other workshop in Torit is very well organised, clean and tidy but unfortunately was not operational when visited due to a defective diesel-generator welding set which the owner was waiting on NCA to repair. His most profitable line was repair work but he also made furniture for sale in Torit market.

Both workshops quoted fuel as a major problem but were being assisted by NCA in this respect. They also relied on NCA for raw material supply and spares when not available in Juba.

5.4 OTHER SERVICE ACTIVITIES

Individuals are found throughout the Study Area providing many of the simple services required. In most of the important centres could be found people capable of repairing bicycles and sewing machines; watch and radio repairs were generally taken to Juba or Torit.

There were surprisingly few tea shops, restaurants, bars, lodgings or small hotels; presumably low demand for such services was the main reason. Imported beer was very expensive and beyond the means of most of the population; locally brewed beer and spirits were generally sold by individuals in the open air.

One enterprising southerner, who had already established a thriving lodging house and restaurant in Nimule was seeking permission to construct a simple tourist lodge (comprising eight tukuls or rondavels

plus bar and restaurant) at the Nimule Game Park. The present facilities, run by Government, are completely inadequate. Plans had been drawn up and the proposal would be to start small, adding further accommodation units as and when the demand warranted it. The Consultants were impressed by the individuals' past performance and by the proposal. It is recommended that NCA building section might assist in making suggestions concerning the design of the lodge; it is anticipated that Equatoria based expatriates would be the main customers.

Butchers are found at most of the important centres, Torit, Kapoeta, Ikotos, Katire, Chukudum, and Nimule. They are less numerous in the west as fewer cattle are available for slaughter; sheep and goats are often butchered by their owners or purchasers.

A pharmacy, part of a recently established chain, operates in Torit and possibly in Kapoeta. The chain is owned by a southerner, who is one of the few Equatorians involved in large scale business.

5.5 TRANSPORT

5.5.1 Local Facilities

Costs of operating trucks in Equatoria are very high. Fuel supplies are erratic and official supplies are issued on a quota basis, which is generally inadequate. Black-market prices are often high, reaching for example £S 3 per litre for diesel. NCA's rate, which includes taxes and transport is around £S 2/L.

There are no vehicle appointed agents or dealers, and spare parts are generally difficult to obtain and are expensive. Tyres are particularly expensive and the chances of damaging these are very high.

Very few new vehicles, except those brought in by agencies, become available for purchase in the south and hence the local fleet comprises in the main of ageing vehicles, many of which are out-of-order or are seen broken down in the rural areas. With the closing of the Nile, it is very difficult for trucks, purchased in Khartoum, to be brought down to Juba.

The recent disturbances in the area have resulted in the army requisitioning trucks. Whilst agreements are made to pay a daily hiring charge, owners who were spoken to, held out little hope of seeing their trucks again, in reasonable conditions, or of being paid. This could explain, perhaps, why so many vehicles in the rural areas appeared to be in non-operating condition.

As Juba is the main trading centre most of the trucks are based there, with many local retailers finding their way to Juba, buying their supplies and organising transport from there. Charges are usually quoted in cost per unit (for example per carton of soap or bag of sorghum) as it is unusual for a single trader to require the services of a full truck. Sometimes local retailers form a group and hire a truck, splitting the total cost amongst themselves. Table 5.2 gives some examples of trucking charges, converted into rates per ton km.

NCA, using Mercedes 5 tonne trucks, charges £S 1.4 per km, or £S 0.28 per ton km (round trip). This rate covers fuel, lubricants, repairs, tyres, drivers wages and administration charges, but not capital charges. Such a truck costs around £S 130,000 c.i.f. Torit (duty free). If these charges plus interest were to be added the present rate would need to be at least doubled.

A private operator in Juba estimated that the minimum rate should be around £S 0.60/ton km, with higher rates for bad roads and difficult conditions (e.g. where official harrassment is above average).

The Imatong Forestry Company estimates the true running costs of its truck fleet to be in the order of £S 0.50-£S 0.60 per ton km overall allowing for empty return running. Approximately 60 per cent of these costs are capital costs.

Given that the rates quoted in Table 5.2 are one way rates, with no charge made for return trips, (which are financed to some extent by the organisation of back loads by the truck operator) the transport costs do not appear to be unreasonable.

Very few trucks are based in the Study Area, most of the trucks

TABLE 5.2 TRUCKING COSTS

Journey	Distance (kms) one way	Total cost/ tonne (£S)	Cost per tonne/km[1] £S
Juba - Torit	132	100	0.76
Juba - Parajok	265	150	0.57
Juba - Pageri	180	120	0.67
Torit - Kapoeta	143	120	0.84
Torit - Nimule	146	150	1.03
Torit - Ikotos	136	60	0.44
Obbo - Torit	70	75	1.07

Source: Consultants' data.

Note [1] Distances are calculated for a one-way trip, if the total distance were to be included rates would be half those quoted.

operating there coming from Juba. Torit has the largest number, with five 7-10 tonners, fifteen 3-5 tonners and five pick-ups. Approximately four 3-5 tonners and two pick-ups are found in the Acholi Area. The pattern of ownership in the Madi Area was somewhat strange, with for example, only one 7 tonner in the important centre of Nimule and nine vehicles (three 3-5 tonners and six pick-ups) in Opari. Several other vehicles are based in the Madi area, the total being in the order of ten. Several were seen having been laid up temporarily.

Overall, very few of the vehicles were in good condition and it is normal to come across the vehicles broken-down along the road. They are owned by both southerners and non-southerners; in the Madi area many of

the owners are refugees who in some cases brought their vehicles with them. The operators in Torit have formed an association, comprising both southerners and non-southerners, and have rationalised charging rates and the sharing out of business. Examples were found elsewhere where southern operators charged less than the non-southerners, but the differences were not of major significance. Furthermore neither rate was far off from the £S 0.60 ton km guideline.

Buses, based in Juba, run daily services to and from Torit and Nimule. A service also runs daily - Torit - Nimule and Torit - Keyala. A bus, owned by the Hilieu Bus Cooperative, runs regular services between Hilieu and Torit and twice weekly to Ikotos from Torit. A truck runs every other day to Lafon. Elsewhere there are no scheduled services, the service to Parajok from Torit which operated in 1983 has ceased to operate due to the deterioration of the road. Hopefully if the improvements to the Magwe - Upper Talanga road which were underway in December 1985 continue, this service will be reinstated.

Despite the major problems found in 1985, NCA has managed to keep most of its roads reasonably well maintained and has been able to carry out some further development work. Unfortunately, the main roads (i.e. those from Juba through Torit to Kapoeta and Juba to Nimule) which are Government's responsibility have been seriously neglected. With USAID assistance the Nimule road was being graded in December 1985; the prospects of the Juba - Kapoeta section being attended to appeared to be somewhat unlikely. Another important section from Magwe to Upper Talanga which has been in a very poor state for at least two years was also being improved in late 1985.

Mention was made of the possibility of bridging the Nile near Nimule. The Department of Roads, whilst agreeing in principle with the idea, indicated that the idea had not been considered seriously, neither had any donor expressed a formal interest in funding the proposal.

5.5.2 Other Facilities

Now that the River Nile is closed for shipping, the only way in which commodities can be brought from Khartoum is by cargo plane. Two companies, Sudan Airways and Trans Arab, operate regular services from

Khartoum to Juba.

Rates per tonne are as follows:

Company	Khartoum - Juba	Juba - Khartoum
Sudan Airways	£S 1000	£S 700
Trans Arab	£S 1500	£S 1000

For air-freighted cargo from Europe, Interfreight runs a monthly scheduled service from West Germany capable of carrying up to 42 tonnes. The charge rate is US$ 2.70/kg which is equivalent to £S 8,900 per tonne.

Trucks still operate regularly between Sudan and Kenya, the following rates applying:

Journey	Cost/tonne[1]	
	K.shgs	£S
Mombasa - Juba	2630	526
Mombasa - Torit	2745	549
Nairobi - Juba	2380	467
Nairobi - Torit	2495	489

Note: [1] Includes charges of K.shg. 126 Ugandan Border Fee and K.shg. 149 Sudan Border Fee.

Most trucks leave Sudan empty. In addition to the problem of finding back-loads of commodities which can bear the cost of transport, any benefits that might result from such trade are generally negated by official and unofficial involvement and truck operators are generally unwilling to get involved.

5.6 WHOLESALING, IMPORTING AND EXPORTING

There is little real evidence to support the contention that deliberate attempts are made by wholesalers to charge southerners more than non-southerners. The non-southerners, who virtually control all wholesaling in Juba, are numerous and are in competition. They are aware that they no longer control all the retail trade in the rural areas and

that it is unlikely they will return. They, therefore, are keen to obtain the orders from the southern retailers.

Price differences are probably more related to the size of order than to the ethnic origin of the buyer.

It is of interest that a recent application by a group of southern businessmen to establish a trading/wholesaling company in Juba appears to be progressing satisfactorily. The enterprise, entitled the 'Commercial Association of Equatoria Sons' whilst not receiving high marks for its choice of name from NCA's Womens' Development office, would be a welcome addition to the wholesaling sector in Juba.

The authority to grant wholesaling or general trading licences, and import and export licences is presently granted by the Ministry of Commerce in Khartoum. In the resent past this permission was granted in Juba and the centralisation of this authority is a politically sensitive issue.

The Inspector for Commerce, Department of Supply, in Juba, informed the Consultants of the procedures involved in obtaining licences and said that there was no discrimination against southern applications.

Whether or not the authorities in Khartoum exercise official or unofficial discrimination against the southerners is impossible to ascertain. It is certainly a well-held belief by most southerners with whom discussions were held. It was pointed out that non-southerners were more likely to have personal contacts in Khartoum and more experience in influencing the appropriate people in obtaining favourable responses to requests for licences.

5.7 BUREAUCRACY

There is no doubt that the imposition of taxes on the movement of goods from Juba to the rural areas is costly in terms of money spent and, possibly of more importance, in time spent. Two taxes are normally levied, one in Juba and one to the Rural Council within which the retail outlet is located. What is much more important is that by demanding that truck drivers have documentation for all commodities carried, they are at the

mercy of numerous police and army personnel who frequently stop and check the vehicles. At certain points these officers have the right to request the trucks to unload; an operation which is usually waived, sometimes as a result of financial or material inducement. The presence of so many controls is bothersome to say the least, and it was the Consultants' impression that the personnel involved were generally held in low regard by the people of the area.

The problem is a difficult one to solve, as the revenue created is a useful addition to local government funds. It might be more sensible, given the realities of the system, to abolish it and increase the retail licence fee instead.

It should also be mentioned that the local economy also gains substantially from the flexible attitude of officials, particularly along the border with Uganda and Zaire. Without this attitude, inter-country trade would be severely affected and many commodities would be in short supply. A lenient attitude also appears to apply to the foreign currency black market; this again is very fortunate.

5.8 BUSINESS KNOWLEDGE

The lack of business skills of many of the retailers was generally accepted as a significant bottleneck by the retailers themselves as well as by experienced businessmen commenting on the present retailing situation.

Education levels are often very low, standard paperwork routines are rarely adopted and self-discipline often lax. The constant need for cash and commodities for domestic purposes by members of the retailers' immediate and extended families often results in a rapid draw down on cash and stocks and the creation of cash flow problems when the time comes for restocking. The problem is further aggravated by the tendency for some inexperienced traders to purchase personal luxury items and increased quantities of alcohol with their newly generated cash incomes. Such a tendency stands out in contrast to the austere life-style of so many of the most successful business communities operating in South Sudan, Kenya and elsewhere.

Many of the local retailers have, however, avoided these pitfalls

and are managing to build up their businesses. In a society where generosity is considered to be an important and respected attribute, it is often very difficult for a trader in his formative years, to progress and at the same time maintain the respect of his neighbours. It was interesting to note that some farmers who were contracting out ox-plough cultivation knew that they were undercharging, but felt unable to charge more, as they wished to keep on good terms with their neighbours. A carpenter who produced chairs for local sale, was selling his items at very low prices because he felt that his neighbours could not pay any more. The price bore no relationship to the cost in terms of timber and hours of work.

In most countries the regulations governing the creation and operation of a business appear to have as a major objective the dampening of any sparks of entrepreneural enthusiasm. Potential businessmen would probably stand to gain substantially if they were to be given advice from people who understand the official and unofficial maze through which they have to pass.

5.9 COOPERATION AND INTEGRITY

Opinions amongst the southern businessmen varied substantially over these issues. It was generally thought that it would be possible for retailers to form groups or cooperatives and in several places this had taken place, e.g. Torit, Nimule, Parajok and to a limited extent, in Ikotos. Nimule retailers have formed a cooperative. Their main concerns and the reasons for getting together were to make efficient use of transport in bringing commodities from the wholesalers. Many people commented on the shortage and high cost of transport and expressed an interest in joint ownership of trucks. Despite this enthusiasm, it was often evident that there was little trust between the parties concerned.

On the issue of finding people suitable for assisting owners in running their businesses there was almost unanimous agreement that this was a major problem, due to the low levels of integrity amongst the people.

Many people mentioned these problems and indicated that this

mistrust existed even amongst members of an immediate family. Several people suggested that women were likely to be more honest and that wives were often the best people to assist their husbands in running businesses. It was mentioned that this deterioration of past high standards appears to have started during the unrestful period from the mid 1950s.

A study of the Acholi digging 'Kompanys' (Reference 11) indicated it was unlikely that such organisations could form the basis of cooperative ventures into fields other than agriculture, hunting and welfare.

It was of interest that some of the Latuka people with whom discussions were held, believed that fairly high standards of trust could be expected amongst close family units. However, it was also stated that if one member were to misappropriate funds, it would most likely be spent on purchasing a wife and this action would meet with the approval of the family unit, anyway. Unfortunately, such behaviour is not conducive to the successful establishment and development of business, particularly where wives can cost at least £S 6000. Wives in the west, amongst the Acholi and Madi were significantly cheaper, at around £S 2500.

5.10 COMMUNICATIONS

Apart from a post office (with a telegraph) in Torit, there are no postal or telephonic facilities in the Study Area. The post-office was closed for some time in 1985 since the post-master absconded with most of the assets; but was open again by the end of 1985. The Post-Office has facilities for savings.

The Army, Police, NCA, UTTP and VSG all have radio communication networks.

5.11 ELECTRICITY

5.11.1 General

There is no grid operating in the Study Area, or in Equatoria. The only electricity generated in the Study Area is by private generator, NCA, UTTP and the Imatong Forestry Company having substantial facilities. Elsewhere only smallscale facilities exist including the Catholic Mission,

the MTD and Military Camps, the hospital and the Secondary Technical School in Torit. In addition there are some generators used for lighting shops in Torit and for supplying power to welding machines in Torit and in the Madi area.

Torit was provided with five generators a few years ago, but was unable to find the necessary funding and organisational enthusiasm required to establish a power company, and the generators remain unused. Yei, on the other hand, was provided with similar units and has managed to establish a power system which is operating successfully. One of the measures introduced there to raise funds has been to impose an electricity tax, in addition to the gibana tax, levied on the movement of agricultural produce.

Juba, whilst lying outside the Study Area, is of indirect relevance. There the main town supply is totally inadequate and much of the town is without power. Most organisations requiring power, generate their own. A new system is being installed at the present time.

NCA are proposing to make use of surplus hydro-power generated by the Imatong Forestry Company by erecting a power line to Hilieu and onto Torit. They also propose to increase the generating capacity and deliver the power to Torit.

5.11.2 Juba Power Supplies

In 1975 the National Electricity Corporation (NEC) issued a tender for the construction of 5 x 1 mW thermal power stations in Juba for planned completion in 1978. Now, in 1985 the project is only just nearing completion with the assistance of expatriate engineers. The distribution system still needs to be upgraded to handle the increased voltage and capacity; and houses re-wired. A viable plan for the supply of fuel oil must be developed, but it is hoped that sometime in the near future an increased capacity will be available.

In the meantime, Juba consumers are forced to tolerate the existing facility, A condemned central power station generating 0.5 mW; eight small utility owned generators with a total capacity of 0.64 mW; and an unknown number of private generators.

Management weaknesses have resulted in an estimated 75 per cent of consumers not paying their bills. Government and army recieve their electricity free. Monthly tariff collections barely cover fuel costs and rely on a subsidy from NEC Khartoum to cover labour and maintenance costs.

5.11.3 Upper Talanga Tea Project

This project has two generating systems. It has three conventional diesel-generator sets - two in the tea factory with installed capacities of 108 KVA and 300 KVA, and one for the staff houses. These all will act as a standby to the steam turbine system installed but not yet commissioned. For the first phase there will only be one generator (125 kVA) being fed from a boiler fired by locally grown wood (eucalyptus). The boiler will produce steam for the processing of the tea, with a super-heater to drive the steam turbine. This constitutes a very efficient 'total-energy' system where the waste heat from the generating side is utilised for the processing. The system has been sized to allow for another steam turbine. (When the factory comes on line in April 1986, they will be using their standby capacity because the steam turbine will not have been commissioned owing to the suppliers of the equipment having gone bankrupt, and reluctance on the part of the liquidators to send a commissioning engineer out during the present security position.)

It had been suggested (Reference 17) that UTTP would be a customer for the proposed Kinyeti Hydro Power Scheme, but this is now considered unlikely as it would not make financial sense to abandon part of the efficient generation capacity already installed and construct a power line across the difficult terrain from Katire to Upper Talanga, even though the power itself would undoubtedly be cheaper. It should also be noted that the UTTP power requirements are less than envisaged in the Hafsund report.

5.11.4 Imatong Mountain Forestry Co. Ltd

The sawmill run by this company has generated its own power for many years. Since the 1940s the sawmill had a pelton turbine which drove a line shaft system providing mechanical power to the sawmill and a DC generator for staff house lighting. With the upgrading of the sawmill under British Aid, a new hydro system was installed in 1979

providing AC power from another pelton turbine running an alternator from a different location (near to the first site) which gave an increased head of 92 metres. The designed flow was for 530 litre/sec giving an electrical power output of 520 kW. (This represents an overall system efficiency of 67 per cent).

This new electrical power is used in the sawmill to supply induction motors in the band saws, workshops - both maintenance and carpentry - and an electrical dehumidifier system for the kiln drying of timber used by their carpentry workshop. In addition the company provides free electricity to their staff houses and the village of Katire. Their maximum demand is 120 kW leaving spare capacity in excess of 200 kW.

However, the company has plans to expand its carpentry workshops which will have an increased call on this spare capacity for the provision of additional kiln dried timber and power to operate the proposed machinery. Estimates of power requirements are in the order of 50-100 kW.

5.11.5 Kinyeti Hydro Power Scheme (Reference 17)

The scheme proposes a five stage development of the hydro power potential from the Kinyeti river above Katire. The first stage is simply to utilise the ±200 kW excess capacity at Katire by transmitting it 50-55 km to Hilieu and Torit. This would involve the construction of 22 kV transmission line. The line would be sized to take account of the future expansion plans and demands. Initially, the 200 kW spare capacity at Katire would be transmitted at its present generated voltage of 11 kV. The transmission line losses should not be too significant at this early stage in the programme, and the power would meet the requirements at Hilieu and Torit presently being supplied by diesel generators. Other costs would include the establishment of the power authority and connection in Torit.

Stage two proposes to relocate the hydro site again slightly to take advantage of increased head and an anticipated flow rate. The new head would be 115 metres and recent flow data shows a basic flow rate of 650 litre/sec, but for 8 months of the year this flow rate is higher giving a mean of 1000 litre/sec. The stage two scheme plans to

utilise the mean flow by installing a twin jet pelton turbine - one of the jets gradually being turned off by adjustment of the spear valve as the flow drops. This would help to maintain the efficiency of the turbine, but there would be inevitable design compromises. The Consultants are, however, somewhat sceptical about the proposal's expected power output of 1 mW.

Stages three, four and five would incorporate three additional power stations up-stream of each other; each with a 1 MW capacity, utilising dammed pondage at a choice of locations in the mountain range being piped through the mountains to the hydro-sites.

5.11.6 NCA (Hilieu)

Without discussing in detail the generation capacity at Hilieu, it is noted that the 1985 running costs were of the following order:

		£S (000)
(a)	Fuel 13,240 litres of diesel @ £S 2.0/litre per month x 12	318
(b)	Lubricants and labour @ 5 per cent of (a)	16
(c)	Maintenance (3 units)	14
	TOTAL	348

In December 1985 a smaller unit was being installed to operate at night. Its annual operational costs were estimated as follows:

(d)	Fuel - 2,433 litres of diesel @ £S 2.0/litre per month x 12	58
(e)	Operation and maintenance @ 15 per cent of (d)	9
	TOTAL	67

Thus in 1986, assuming constant prices, power generation at Hilieu excluding capital costs, would cost around £S 415,000.

CHAPTER 6

TRAINING FACILITIES, TECHNOLOGY DEVELOPMENT AND INVOLVEMENT BY GOVERNMENT AND OTHER ORGANISATIONS

6.1 INTRODUCTION

Whilst most of the training intstitutions discussed in this chapter are located outside the Study Area, their facilities are available to people living or working in EBEE.

6.2 TRAINING

6.2.1 School Level Education

(a) Senior Technical Secondary Schools

Torit Technical School is the only one of the four planned senior technical schools run by the Ministry of Education which is functional at present. The one at Tonj is now closed due to security difficulties; the one at Ilyangari 3 km east of Juba never started and the corrugated iron structure erected with USAID funding has been partly dismantled; and the one at Lainya, 63 km west of Juba, at one time appointed teachers but lacked the finance to buy tools and equipment and has since been abandoned.

Torit provides three courses, each of four years duration, in fitting and general machine shop practice; bricklaying and concrete practice; and joinery and carpentry. Students are taken after achieving good results in their intermediate leaving certificate examinations. Their present attendance is as follows:

Course	Year			
	1st [1]	2nd	3rd [2]	4th [2]
Fitting and General machine shop practice	20	30	-	-
Bricklaying and concrete practice	24	30	20	30
Joinery and Carpentry	30	30	22	28

Source: Headmaster, Torit Tech. School.

Notes: 1 Proposed intake.

2 Fitting & General Machine Shop Practice not available.

The numbers of students fluctuates from year to year mainly dependent on the ability of parents to send the child to school when he could be earning an income or helping within the family. The education and boarding is provided free but the school asks each student for a £S 5 deposit against breakages and £S 20 for overalls which should last for the full four years.

The school's own ability to increase numbers is restricted by finance to meet the cost of raw materials for the students to practice with. The headmaster has secured scrap materials mainly from NCA, but this has proved insufficient and consequently the proposed intake this year will be reduced for the fitting and bricklaying courses as these are more expensive to run (in terms of materials) than carpentry.

The school has recently been renovated and re-equipped with assistance from EDF. Unfortunately, the headmaster and staff in Torit were not closely involved and are concerned that the equipment supplied is inappropriate to the needs of the students who will need to travel North to take best advantage of their training - there being little opportunity to use lathes and milling machines, for instance, in the south of Sudan. Nevertheless, within the constraints of the nationally planned curriculae the teachers try to concentrate on hand tool practices which will be more appropriate to their needs and those of the region. In addition, the school struggles to run the diesel generator needed for the electrical supply to these machines, relying on NCA to meet its fuel needs.

Under the same programme of assistance EDF has provided the capital equipment to run new courses on electronics, auto-diesel engineering and plumbing. Unfortunately, the school cannot hold the courses yet due to a lack of qualified staff.

The school teachers presently employed are well trained either from Khartoum Polytechnic, East Africa or in a few cases overseas, and appear to be highly motivated receiving inspiration from a dedicated headmaster working under trying circumstances. The school was clean and with tools and equipment carefully put away - although

obviously used. Instructional material (for example notes on the blackboards) indicated that a good grounding in technical matters was being taught, at least to a theoretical level. The headmaster commented that lack of formal sector industry for job placement training would obviously hamper the practical side of the students' education.

On successful completion of four years the students struggle to find jobs, these normally being with the regional government, or with aid agencies such as NCA, ACROSS and the German Medical Team if they do not migrate north. Few went into business on their own, those that did were fortunate to have wealthy parents who could provide capital to buy tools and raw materials.

(b) Afoye Technical Training School

This self-help school was set up as a Trade School in 1984 in the refugee affected area, with financial assistance from NCA, UNHCR, Italian Catholic Mission and the Regional Ministry of Education in Juba.

The school provides three year training courses in woodwork, metalwork, tailoring, bricklaying/building and is hoping to introduce courses on farming. They have a small staff of five plus the headmaster who was a teacher in Uganda. By their own efforts the school was recognised by the Regional Ministry of Education in January 1985 and upgraded to an intermediate technical school.

There are currently 26 first year and 24 second year students of which 32 (64 per cent) are refugees and a further 8 (16 per cent) from outside the area. No boarding facilities are available, so students from outside have to stay with friends or relatives. The school charges £S 50 per year per student and sells the products made by the students to contribute towards its running costs but still relies heavily on NCA.

The school appears to be in a fairly precarious position lacking sufficient funds, equipment and teachers.

(c) Senior Commercial Secondary School

There is one school in Juba which offers specialisations in commercially orientated subjects, including bookkeeping, accounting, and office management.

(d) Juba Day Secondary School

This school was created by the Regional Ministry of Education and Guidance, the University of Juba and the IDA Secondary Education Project, and is supported by the British Council. It is an academic school teaching conventional subjects but it is attempting to make the education it provides more relevant. As a result its science department has instigated a Technological and Industrial Studies Group (TISG) to provide a balance to the academic nature of the formal science syllabus in secondary schools.

Members of TISG study technology at all levels: Examples include visits to the Equatoria Materials and Construction Company brick works in Gunbo and to Juba waterworks, discussions on Forest Product Utilisation and Sanitation for Juba Town. Other activities include practical design exercises to develop and test clay pot water filters, charcoal coolers, solar driers and pedal power.

Unfortunately, the initial interest when TISG was set up in 1982 has waned somewhat partly due to it being an extra-curricular activity on Saturday mornings. However, the recently arrived British Council placement is attempting to revive interest.

6.2.2 Vocational Training

(a) Multi-service Training Centre (MTC)

The Multi-service Training Centre (MTC) was established in 1972 with the help of the International Agency for Cooperation in Development (IACOD) now incorporated under Euro-Action Accord. In 1975 the United Nations took over and provided training experts from ILO. The last of these staff should leave by the end of 1985.

On average two 5.5 month in-service courses are held per year in the following subjects:

- Auto-mechanics
- Carpentry & Joinery
- Metal Fabrication
- Electrical Installation
- Building Construction
- Plumbing

three 3.5 month courses per year in:

- Elementary Typing
- Introductory Typing
- Intermediate Typing

and one 6 month course per year in:

- Instructor Training

Approximately 95 per cent of course participants come from Government departments, the balance being sent by international voluntary agencies. A recent evaluation of MTC interviewed past participants and found that 54 per cent had been promoted since going to the Centre, and that 64 per cent of these believed it to be a direct result of the training they received.

However, many of those interviewed - and in particular the artisans - commented that they felt "MTC's power tools and equipment are too advanced compared with that used in their current jobs". (Reference 18). Some of these people did not use power tools at all once they had left the MTC.

The evaluation report called for more appropriate training, and for it to be available to those in the private and informal sector and that "...future task for MTC is to promote training for self-employment which must necessarily be the source of employment for many years to come".

Since this report was published, the MTC has instigated plans to start pre-service training for school leavers. They are now in a

position to offer three year courses in:

- Building Construction
- Carpentry & Joinery
- Auto-mechanics

Due to the Regional split of the local governments in the South Sudan MTC has taken 42 students from the May Vocational Training Centre in Wau, (which coincidentally, is temporarily not functioning at present due to the security position). These students have formed the basis for their first intake on the pre-service training.

In addition, the Director for Labour is also working on the early stages of a proposed artisanal training programme for the self-employed/informal sector workers.

Courses work to syllabuses set in Khartoum which are not always appropriate to the needs of the South, and, in some cases, show remarkable resemblances to those used in the United Kingdom. However, students are trade-tested, who then leave MTC with a Trade Certificate recognised in the Sudan. There are three grades (I, II and III) awarded depending on the level achieved by the students. Attendance certificates are given to those who do not meet the level required to be awarded a Trade Certificate.

The Centre has the capacity to and is willing to trade-test trainees who have received instructions in other institutions, such as NCA. (Other References 19 and 20).

(b) Lainya Vocational Training Centre

This centre, run by the Episcopal Church of Sudan (ESC), and sponsored by the South Sudan Refugee Assistance Program (SSRAP), is a revival of a training centre which was originally established in 1926 by the Church Missionary Society (CMS). It is currently being re-established, and in 1985, 32 students graduated. The main course offered is of nine months duration, comprising an initial general term followed by a specialised course in one of the following subjects:

agriculture and horticulture
carpentry
building construction
home economics
metal work

All students are given training in extension, small business management and appropriate technology. The centre attempts to assist graduates in settling into helping their community on leaving the Centre, by, for example, loaning tools and raw materials, or giving advice on setting up a business. Candidates from anywhere in Sudan are invited to apply.

(c) Others

A number of other vocational training courses are available such as at the Amadi Rural Development Institute which offers 9 month certificated courses in Agricultural Extension, Family Life Education, Appropriate Technology, Community Development, Adult Education, Project Planning and Sociology; and shorter courses on Women Leadership, Village Leadership, Village Level Technicians, and Progressive Farming. There is no charge for these; the Institute is supported by the Department of Community Development, but was unfortunately closed in late 1985 due to security problems.

The Equatoria Materials and Construction Company also offers courses in brickmaking, tile making and carpentry which last for 15 days. Most trainees are from the EMCC's own workforce.

The Scout and Guide Farm at Rejaf offers three types of training:

- Apprenticeships for junior school leavers lasting 6 - 12 months in metalwork & mechanics, carpentry and agriculture;
- short training courses for 1 - 3 weeks in agriculture and community development; and
- day a week courses for volunteer service training.

6.2.3 Cooperative Training

(a) Cooperative Training Centre, Torit

The Cooperative Training Centre in Torit was established with the assistance of the Royal Norwegian Society for Rural Development up to 1986. Present negotiations are hoping to secure further funding to cover recurrent costs up to 1990.

At present their staff is four, but it is hoped to increase this to six in 1986. They offer courses lasting between one week and two months in book-keeping, basic economics, extension work, community development, sociology of organisation, rural sociology, law, mathematics, business English, goods display, leakage control and committee work, to a maximum of 60 students. Cooperative Society staff are the target group.

(b) The Cooperative College, Juba

This college, which is a common service to the three southern regions, is concerned with training government cooperative staff. It conducts six month pre-service, in-service and induction courses. It has received assistance from UNDP and DANIDA and negotiations are underway to renew this assistance, with a view to substantial expansion. A possible site for a new building has been allocated, close to the Ministerial complex in Juba.

6.2.4 The Regional Accountancy Training Centre (RATC)

This centre was established in 1978 by the Regional Ministry of Finance and Economic Planning. In 1983, when the Southern Region split up, the RATC remained a 'Common Service' to the three regional governments. Since 1981 it has been receiving assistance from UNDP, which is scheduled to continue until 1986. The UNDP is contracted to perform training services for:

- twelve month induction courses;
- 3 month in-service courses for middle management officers such as accountants, budget officers, auditors, tax officers, finance officers and stores controllers;

- 3 month in-service courses for base management personnel such as book-keepers, budget assistants, audit assistants and tax collectors;

- 1 month skills upgrading courses for storekeepers and cashiers;

- field and home study courses.

It also provides consultancy services to government and semi-private institutions.

There are five expatriate personnel and around 14 classified and 20 unclassified Sudanese staff. Teaching assistance is provided from other bodies such as the University of Juba.

Other courses can be organised on request, and for example, a 3 month small business management course for government and non-government staff was recently conducted.

6.2.5 Role of British Council

The British Council has arranged for overseas training for mainly government people, but is trying to assist the private sector as well. The training is either at one of many institutions in the United Kingdom which specialise in developing country courses, but the present representative is keen to encourage training within Africa so that candidates see and learn about related activities within their own continent which are likely to be more appropriate.

The Council can also arrange for in-country training by British nationals who would hold a course for a number of people in the Sudan - this being a better use of resources.

In addition, the Council have a book presentation scheme where deserving groups, institutions or organisations (usually who have a resemblance of a library) can choose books published in Britain at the Council's expense. They also offer a service to individuals who wish to order a book but lack the foreign currency to do so, in which case

the Council will accept £S and order the book on the individual's behalf. The Council can also arrange, through the Commonwealth Secretariat, for artisans from one country to visit other countries to teach practical skills to local artisans. India, for example, has a highly skilled artisanal sector from which such visits have been organised.

6.2.6 The University of Juba

Of particular relevance to this study is the faculty of Public Administration and Management, which offers four year graduate courses. These comprise a two year general course, followed by two further years leading to specialisations in business management, accountancy, economics, statistics, sociology, anthropology and political science and public administration. Staff of the faculty have been responsible, sometimes in conjunction with the MTC and RATC, for running tailor-made courses for a number of organisations, including AMREF and USAID.

It is of some concern to note that over the past two or three years, students from the south have found it increasingly difficult to obtain places at Juba University; meanwhile the number of non-southerners has increased. It appears that the numbers of places in northern universities for students from the south have not increased sufficiently to compensate for the increased pressure from the north. It is believed that part of the reason for this is that southern students have been achieving lower standards of school qualifications due to the poor education facilities. In the past many university entrants would have received their school education in Uganda or Kenya. Many southerners contend however, that this is only part of the explanation.

6.3 TECHNOLOGY DEVELOPMENT

6.3.1 Equatoria Materials and Construction Company

As discussed previously this company introduced improved brick-making using an hinged mould designed by ITDG. This involved a different approach to clay preparation - the clay being a drier mixture - and use of sand as the releasing agent to assist removal of the wet brick from the mould. With less water in the wet brick, when dried and fired, the brick maintained its shape and dimensions producing a standard brick.

They also experimented with roman and flat tiles for roof construction; and floor tiles. However, with the departure of the VSO Building Materials Extension Officer these initiatives have slowed down.

6.3.2 Department of Community Development

With assistance from Euro Action Acord, UNICEF and ITDF an improved cooking stove has been developed to increase cooking efficiency and reduce charcoal consumption. These improved stoves have been taken up by the sheet metal artisans in Konyo Konyo who made them for the Juba market.

Other appropriate technology items have been designed such as storage jars, water filters, charcoal coolers, but their introduction on a wide scale has not materialised.

They rely on short term consultancy inputs to train trainers in AT such as appropriate building.

The Amadi Institute, and the Department of Community Development, is assisted by a 'Support Unit', located a short distance from the Juba headquarters. This unit, funded by Euro Action Accord, which employs a core of well-qualified community development officers, a full-time expatriate technical officer and short term consultants, seeks to provide practical assistance to Community Development Officers in the field. It is equipped to make extended field visits and carried a stock of essential items, such as timber, cement and iron sheets. There are also facilities to hold training sessions.

Although the Department of Community Development is the principal government agency concerned with the testing and development of appropriate technology, and was the co-ordinator of a workshop on this subject in 1983, it has not yet been deeply involved in these aspects. The 'Support Unit' does not plan to take on this role in the near future. It does, however, propose to assist in the development of carpentry tool production.

6.4 CREDIT FACILITIES

Well established larger businesses have few problems in obtaining

credit from the banks (the main one being the Unity Bank) or from suppliers. Short term loans from the Bank cost around 21 per cent per annum. Whilst most of those obtaining such credit are non-southerners, there are examples of southerners, who are well established and who obtain bank loans and wholesale credit. It is believed that more southerners than care to admit it are obtaining wholesaler credit. Some southerners wish to give the impression they do not have close ties with the non-southerners, but the more realistic ones realise that the creation of friendly working relationships with the establishment is the only way to progress, in the present situation.

For the smaller retailer with little experience and little to offer in the way of security, credit will always remain a problem. Few southerners have the facility of being extended credit by friends or families, partly because few people have the funds available and partly because of the general low level of trust.

The Consultants believe that they are not, in general, suitable candidates for loans, both on the grounds of the high risks involved and the fact that a potentially successfull businessman benefits, in the long term, by having to struggle to get himself established. Spoon-feeding does not appear to be an appropriate method of creating successful businessmen. There are, of course, particular cases where the timely injection of cash has triggered rapid development.

The Equatoria Development Corporation has been involved in the past and proposes in the future, to operate a small-scale enterprise credit scheme. Nothing of substance exists at the present time.

Agricultural credit is provided by the Agricultural Development Bank. When this agency was visited in late 1983 there was virtually no activity. By late 1985 the situation had improved, with over 35 loans having been extended mainly to coffee farmers in Yei. Total loan funds available at this time were around £S 450,000, but had not been fully utilised.

Short term loans were available for coffee, maize, cassava and groundnuts, the maximum amounts per feddan being £S 515, £S 230, £S 420

and £S 250 respectively. Individual loan payments were made over a period and had to be repaid by December 31st, irrespective of when they were disbursed. A charge of 15 per cent was made irrespective of the length of the borrowing period, or of the fact that the loans were normally split, and paid out in two or three separate lump sums.

Security in the form of land or potential crop was necessary and loan applications for coffee, for example, had to be countersigned by the local chief, the Coffee Board and the Area Council Executive Officer, The Bank can use the courts to enforce repayments from defaulters.

USAID is taking an active interest in rural credit and is, for example, considering providing loans to a cooperative society on the Juba - Yei road. A Consultant was in Equatoria in late 1985 appraising the position. Previous studies have been carried out by USAID in Equatoria (Reference 21).

At the rural level there are virtually no savings facilities, except at the post office in Torit. In the absence of such facilities some people deposit seasonal cash surpluses with the shopkeepers (usually the non-southerners) drawing on these savings during the hungry periods and at Christmas time. No interest is paid and some risks are involved; some of the shopkeepers holding deposits who evacuated in early 1985 did not return.

Cooperative societies deposit their savings with the TDCV (NCA) or with the Unity Bank in Juba.

6.5 NORWEGIAN ASSOCIATIONS FOR THE DISABLED (NAD)

This centre, based in Juba, has been operational for three years and employs nine artisans, six of whom received three years training at Wau Vocational Training Centre. An expatriate project manager is in change. It is primarily concerned with the manufacture of wheelchairs, tricycles, crutches, and calipers and in 1986 it is planned to produce around 100 wheelchairs and tricycles. A determined effort is being made to ensure that the centre is self-sufficient and already all the staff are on the Department of Health and Social Welfare's payroll. Charges are normally made to cover the material costs and these amount to over

£S 400 in the case of a tricycle. In an attempt to generate profits which can be used to help defray the running costs of the centre, there are proposals to venture into the manufacture of non-medical items, such as bicycle trailers and furniture, for sale at commercial prices. The unit could be of some relevance to the activities of NCA in that it is developing skills in the fabrication of pipework frames. It is also interesting to note how successful this organisation has become in terms of self-sufficiency, despite the fact that, at the human level, it is very difficult to make disabled persons pay for the appliances they are being provided with.

6.6 THE CATHOLIC MISSION

Torit Diocese comprises the parishes of Torit, Palotaka, Kapoeta, Loa, Chukudum, Lowoi, and Lafon. The Bishop, a man from the area, is well respected for his understanding of the people and his involvement in their development. He is supported by approximately 350 full and part time catechists and other employees and around 15 expatriate fathers. Most of these have worked for many years amongst rural communities in East Africa and Sudan and have practical skills in, for example, construction and agriculture.

Since 1975, when the Church became independent and Sudanese bishops were appointed, there has been a gradual process of rehabilitation. The first task was to repair and expand the infrastructure, the churches, houses and other buildings. The repair and development of school facilities has now become one of the main objectives, and has, for example, included the establishment of 39 pre-primary bush schools. Two other major development projects include the revival of the 600 feddan farm at Palotaka, which is currently engaged in seed production (sunflower, maize, soya, and beans) and the establishment of the Multipurpose Centre at Kapoeta. This comprises four classrooms, an office and a teaching hall and will provide short term artisanal training in agriculture, tanning, ironwork (particualrly the construction of roof sections for school buildings) and carpentry. Other activities will include a kindergarten and adult literacy. Well qualified Sudanese staff have been recruited for the adult literacy and carpentry activities.

In recent years the Church has placed increasing emphasis on its

role in development. In Eastern Equatoria it considers that the most appropriate approach is to work closely with the people, assisting them in identifying their own needs and being involved themselves in implementing solutions. To enable the Church to assist it has organised leadership training of selected personnel and has constructed recently, in Torit, a training centre. Around 40 people from the Torit Diocese have already been trained and are working in the field. In Kapoeta alone 400 - 500 people have participated with the group of leaders working there. The methodology used is based on the Paulo Freire approach and is reported to have been applied with good effect in some rural areas in Kenya.

Problems sometimes arise with this approach as it is not always the case that the peoples' perception of their needs coincides with their actual need. It is likely for example that cattle people in the east see one of their most pressing needs as more and better cattle; this would not coincide with most outsiders' views on the matter. It is nevertheless important to go along as far as possible with the peoples' requirements, to gain a foothold in their confidence. With skill, solutions to the problems can be devised which are seen by the people to be useful and which, in reality, have a beneficial effect.

The philosophy appears to be in close accordance with NCA's declared policy of involving, as closely as possible, the people themselves in their own development. Despite the close relations which exist between the Church and NCA over many issues, with regard to this local-level involvement, the Church has tended to proceed on its own. The Consultants believe that close coordination between NCA and the Church is called for.

The Church buys food stocks for relief distribution and in 1985, for example, purchased 130 tonnes of sorghum and cassava from local markets, 30 tonnes of sorghum and maize from the TDCV and has imported around 500 tonnes of wheat from Kenya. It has a target of around 200 tonnes of sorghum and 80 tonnes of beans for 1985/86.

6.7 THE ACHOLI COMMUNITY

Sudanese Acholis living on the East Bank and in Juba number

approximately 50,000 and represent some seven per cent of the Juba's population. These have formed an organisation called the Acholi Community. They have an eight man committee, whose current elected chairman is the Director General of Wildlife. The committee meets around once a month to discuss Acholi affairs and is particularly concerned about the very poor standards of the public services provided. Exasperated, for example, by the delays and doubts concerning the up-grading of the Magwi-UTTP road, they decided to take up the issue and by negotiating with the Roads Department, seeking assistance from UTTP and by contributing personally, have succeeded in repairing the vital section of road between Obbo and Magwi.

In the longer term they see the financial viability of their Rural Council as the key to improved conditions, and put top priority on the maximisation of council revenues. As a prerequisite to this they believe it is necessary to provide offices and housing of a reasonable standard in order to attract properly motivated council staff. They are seeking assistance with regard to the provision of cement and metal roofing, and would themselves provide the locally available materials and labour.

With regard to income generating activities, they propose tightening up the collection of existing revenues, such as gibana, poll taxes and market fees. It is evident, however, that such sources would never be adequate. It is also clear from past experience, that Government assistance in the form of Grant-in-Aid is an unreliable and inadequate source. Provisional suggestions for income generating activities included the establishment of a grinding mill and the development of a farm, relying to some extent on local prisoners to provide the labour. Many of these people serving sentences for relatively minor offences, are sent to Torit Prison, but could, if the opportunity were there, be effectively used in community service. The Council would require capital assistance initially, in the form of a loan, and after having repaid this, believe that it would then be in a sustainable income generating situation.

The Consultants believe that a spontaneously created group, such as the Acholi Community, could play an important role in local development and that NCA should take active steps to liaise with them. Care

must be taken to ensure that the real objectives and proposed approaches of such a group are in accordance with the wishes of the people; given the number of Acholi working for NCA and the wealth of information already available, it should be possible to check the credentials of the 'Acholi Community'.

CHAPTER 7

NCA INVOLVEMENT IN ECONOMIC DEVELOPMENT

7.1 INTRODUCTION

Whilst most of the activities with which NCA is involved have some bearing on economic development, certain of these are of particular relevance, namely credit, vocational training, technology development, and cooperatives. It is with these that this and the following chapter are concerned.

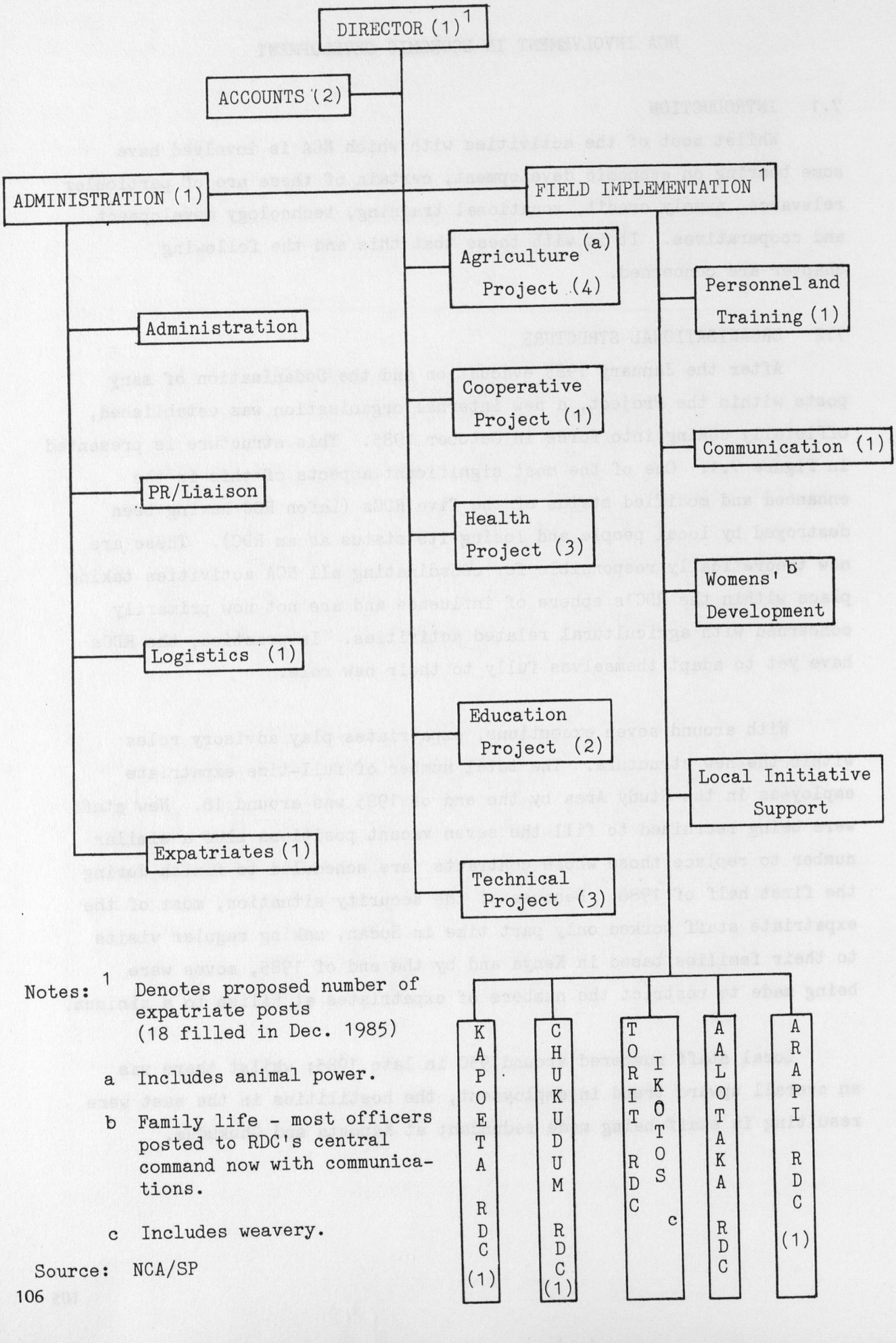
7.2 ORGANISATIONAL STRUCTURE

After the January 1985 evacuation and the Sudanisation of many posts within the Project, a new internal organisation was established, officially coming into force in October 1985. This structure is presented in Figure 7.1. One of the most significant aspects of this is the enhanced and modified status of the five RDCs (Lafon RDC having been destroyed by local people and losing its status as an RDC). These are now theoretically responsible for coordinating all NCA activities taking place within the RDC's sphere of influence and are not now primarily concerned with agricultural related activities. In practice, the RDCs have yet to adapt themselves fully to their new role.

With around seven exceptions, expatriates play advisory roles within the new structure. The total number of full-time expatriate employees in the Study Area by the end of 1985 was around 18. New staff were being recruited to fill the seven vacant positions plus a similar number to replace those whose contracts are scheduled to finish during the first half of 1986. Because of the security situation, most of the expatriate staff worked only part time in Sudan, making regular visits to their families based in Kenya and by the end of 1985, moves were being made to restrict the numbers of expatriates at Hilieu to a minimum.

Local staff numbered around 950 in late 1985; whilst there was an overall upward trend in employment, the hostilities in the east were resulting in staff being made redundant at Kapoeta and Chukudum.

FIGURE 7.1 NCA/SP ADMINISTRATIVE STRUCTURE : OCTOBER 1985



Notes: 1 Denotes proposed number of expatriate posts (18 filled in Dec. 1985)

a Includes animal power.

b Family life - most officers posted to RDC's central command now with communications.

c Includes weavery.

Source: NCA/SP

7.3 VILLAGE TECHNOLOGY UNIT (VTU)

7.3.1 Background

The Village Technology Unit was established in 1979 with the objectives of developing and applying intermediate technologies based on the local resources available to the rural people, assisting them in their day to day lives, making their tasks easier and helping to increase productivity. Initially, the Unit worked closely with the carpentry section and had plans to establish smaller workshops at the RDCs.

The philosophy behind this was sound as the RDCs were in close contact with the surrounding villages and could collect ideas or suggestions from the villagers for feedback to the VTU in Hilieu. The Unit would then develop prototypes in cooperation with the projects involved - either Agriculture, Health, Cooperatives or Human Development - and test them with the assistance of the RDCs who would eventually be involved with their dissemination on a wider scale.

Initially, it was proposed to concentrate on the following:

- Renewable energy technologies - such as wind, solar and water power
- Water pumping technologies, water filtration and storage
- Agricultural processing equipment - such as oil expellers, grinding mills, cassava slicers
- Agricultural Implements - such as ox-drawn ploughs and carts
- Development of tools and equipment for weavers to utilise locally grown cotton
- Upgrading of local skills and crafts.

The hoped-for liaison with the RDCs did not develop as well as expected, mainly because the RDCs were somewhat preoccupied with other activities, particularly agriculture and cooperatives. As an effective

organisational link between the VTU in Hilieu and the RDCs never materialised, the establishment of workshops at the RDCs was delayed indefinitely. Consequently, by 1981 it was decided that the VTU should work on a programme to establish self supporting workshops in selected villages. Despite the success of this initiative, animal power in agriculture soon became top priority and the VTU was transferred to the Agriculture Project under the Veterinary Officer. This occurred in late 1984, the other activities have ceased.

7.3.2 Intermediate Technologies

During the early years of its existence, the VTU developed or made from readily available designs a number of items perceived to be of use to villagers. It is unclear exactly how the ideas arose or if the VTU followed its original objectives of designing to specified needs of the rural people, as seen by them. However, a number of items were produced as follows:

(i) Renewable Energy Technologies
- solar heater
- water wheel
- biogas model
- mud stove
- barrel stove

(ii) Water Pumping Technologies
- Rope and washer pump
- shallow well pump

(iii) Agricultural Processing Equipment
- Groundnut shellers
- Maize shellers
- Winnowers
- Cassava rasper

(iv) Agricultural Implements
- Hoes
- Diggers
- Axes
- Ox-carts

(v) Sundry

bicycle trailer

charcoal cooler

blacksmith bellows

brick bakery

wheel barrows

water filter pot

Whilst the production of hoes and other implements and ox-carts have been successful ventures, very few of the other items have been accepted by the local people and the RDCs and the VTU at Hilieu are littered with the unused items. Similar experiences apply to other agencies working in Southern Sudan and in other countries. The Consultants do not wish to appear to be too critical of the work carried out, as they are aware of the sincerity and goodwill of the people who have been involved and appreciate that unless attempts are made to develop and test technologies, their appropriateness can never be appraised. Under different circumstances, some of the technologies might have proved to have been very valuable.

Whilst the project itself is aware of its shortcomings the Consultants consider it worthwhile to discuss in some detail, the reasons for failure. In this way, similar mistakes can be avoided in the future.

- The rope and washer pump was designed to lift water for irrigation of crops in the dry season, but villagers do not traditionally cultivate in the dry season, do not irrigate from wells and prefer to grow crops along the banks of rivers where the water has receded. Hence, the unit was not adopted by the villagers. (Source VTU Hilieu).

- The shallow well pump, whilst well tried and tested elsewhere in Africa, has limited application in the Study Area.

- The Groundnut sheller was difficult to adjust and could not accommodate the different sized nuts. It was found to be no more efficient than hand shelling. (Source Farm Manager, Palotaka).

- The hand maize sheller is renowned for its inappropriateness and when tested in Nairobi at the Agricultural Machinery Testing Unit was proved to be 50 per cent less efficient than rubbing the cobs together. (Source B. Muckle, AMTU).

- The pedal operated winnower required more energy than hand winnowing and was too tiring for the people to use. (Source, Farm Manager, Palotaka).

- The cassava rasper was not locally acceptable. (Source VTU, Hilieu).

- Hoes, diggers, axes and ox-carts have all proved successful mainly because there is an existing well-defined need for them.

- The blacksmith bellows provided no significant improvement over the traditional bellows; indeed two blacksmiths visited who had them but were no longer using them because they were damaged: The design incorporates two lorry tyre inner tubes and both had split. Rubber solution and patches are difficult to obtain and are unavailable in most villages. Blacksmiths do have problems far greater than the need for improvements over their traditional bellows (which the Consultants consider to be perfectly adequate), these being with appropriate tools - such as hammer, tongs and punches - and with simple tempering techniques.

- The wheel barrows are made from wood and are heavy to carry - the axle position is wrong making the rolling resistance high and resulting in the weight of the wheel barrow itself adding to the weight of the items to be transported, that is, increasing rather than lessening the burden.

- The brick-oven bakery demonstration at the VTU was too expensive and designed without proper appreciation of the size of the market for bread. (Source - VTU, Hilieu).

- The Charcoal cooler, whilst well proven, has limited application and is an expensive luxury unaffordable by the villagers.

An evaluation (Reference 22) in June 1982 also identified many of these problems and suggested greater extension activities as the answer. To some extent this was partially achieved by transferring the Unit to the Agricultural Project.

7.3.3 Village Technology Workshops

In 1981 it was decided to establish self supporting workshops in selected villages by training self employed village carpenters in technical and managerial skills; to help to construct a tukul workshop; supply tools, equipment and, initially, raw materials; and finally to follow-up and monitor progress.

The carpenters were selected for training by the village elders. Loronyo village was the first to receive this help. Five people were trained at their village and of those, two are still operating, one died, one never showed any aptitude for the work and one has turned part-time blacksmith, part-time cultivator. The workshop is still operating producing a range of products, concentrating on chairs, tables, beds and doors.

Lerwa was the second workshop where two carpenters were trained and produced a similar range. Unfortunately this workshop no longer operates due to a fire. There are now eight village workshops described as follows:

Village	Carpenters Trained	No. Operating Now	Comment
Loronyo	3	2	Still operating well
Lerwa	2	0	Burnt down
Torit	1	1 + 2 boys trainees	Moved to Juba
Pajok	2	2 + 1 boy trainee	Still operating well
Keyala [2]	2	?	Tools stolen so now not operating
Chukudum [1]	3	?	Initial supply of raw materials used, problems with further supplies
Kapoeta [1]	3	?	Only make if customers supply timber
Dongolobo	3	3 - 4	Well established in Torit market

Source: NCA, Consultants' data.

Notes: [1] Not visited because of security problem.
[2] Not visited because of tribal unrest.

This programme has proved to be quite successful with most of the operational workshops finding ways around the raw material supply problem which plagues them all. Only Dongolobo has paid back its loans. Of the workshops visited it was clear from their understanding of the original agreement that NCA/SP gave them tools and materials to build the tukul this cost was not to be repaid. NCA/SP managed to recoup some of this money by helping the workshops sell their products. The carpenter at Loronyo, for instance, said that NCA/SP would visit his workshop about once a fortnight, collect what he had made, sell it in Torit market, return to the workshop with half the profits (NCA/AP keeping half) and supply more timber. This arrangement lasted for two years whilst the workshop became established. Now it is self-supporting, its level of production has dropped due to raw material supply which he mainly extracts from the forests around.

This programme has now ceased in favour of the animal traction programme associated with the Agriculture Project.

7.3.4 Animal Power

Since Autumn 1984, the VTU was involved primarily in helping the Agricultural Project promote ox-cultivation. Two consultancy visits by Intermediate Technology Transport helped identify appropriate ox-cart and harness designs and gave practical advice on their production. The VTU has to date produced 99 ox-carts. These have been distributed to the RDCs for trials and demonstration; and have been sold, some with the assistence of the Local Initiative Support (LIS) Scheme.

The Unit provides training to carpenters, blacksmiths and saddlers (for harness making) on how to maintain the equipment. It is hoped eventually to de-centralise the production to the RDCs so they can meet the expected demand at the local level.

7.3.5 The Weavery

This unit, which trains people to weave and to construct their own looms, has trained around 37 people to date. Training takes between four and five months, and in late 1985 trainees were receiving around £S 50 per month. Approximately two thirds of those have been trained are still actively involved in weaving. There appears to be a reasonable demand for the product, especially in Juba. The unit assists in marketing the cloth if the weaver wishes, but many sell privately in their villages or in Juba. The cotton thread, for both warp and weft, is imported by NCA and sold to the weavers. The total cost of thread to make a 20 m length of approximately 70 cm width is £S 60. The minimum selling price for such a length is £S 120; higher prices may be obtainable in Juba and the Madi Area. A highly experienced weaver can produce a 20 m length in about a week, assuming around 8 hours per day. Many housewives, who fit the weaving in with their other household duties, take between two and three weeks to complete a length.

The main buyers are Southern Sudanese, who use it to carry babies and for tablecloths, chair covers, curtains, pillows and shirts. The product is hardwearing, practical and of generally simple design.

Approximately 800 kg of thread, equivalent to 3,000 m of material has been purchased by the weavery in 1984 and 1985.

The yarn, which is purchased from Kenya, costs K Shgs 76/kg or

£S 14.3/kg. Approximately 5.1 kg of thread are required to make a 20 m length, making a total cost of around £S 73. The selling price to the weavers is £S 60, and thus implies a small subsidy, at today's exchange rates.

7.4 TECHNICAL PROJECT

The Technical Project now comprises the building section, roads section, water section and workshops - mechanised, electrical and carpentry.

7.4.1 Building Section

The stated objectives of the building programme are primarily to construct buildings for NCA and UNHCR; to encourage self-help projects; to encourage use of local building materials and appropriate construction techniques; develop self-supporting units (contractors, small scale industries); and provide training.

During the last two years NCA has been involved heavily in building under contract to the UNHCR in the refugee affected areas in Madi. This work is coming to an end with the building section now mainly involved in maintenance of the houses, offices and stores it has already built.

In the education field, there has been a shift in emphasis away from construction towards the provision of educational material. In the past, NCA/SP would encourage local communities to build their own schools using local materials. NCA/SP would finance approximately 65 per cent of the cost in the form of materials, skilled and supervisory labour; the community providing the balance in the form of unskilled labour and locally available materials. An element of training was provided on-the-job such that skills could be passed over to the local people in the hope that they would eventually become self-reliant.

NCA/SP have been encouraging local brick makers, particularly in the Madi area by providing moulds for them to use, transporting and purchasing the bricks for their own use. At their brick production site near Hilieu, they have made slight improvements to the brick making techniques employed and have introduced an all-weather brick-build kiln. This can produce around 100,000 mould bricks per month of which

60,000 would be fired. These were primarily for NCA/SP's own use, but they would also sell to the local community at £S 112/1000. Plans are presently being discussed to hand this over to the private sector.

In 1984 an Appropriate Building Technology Programme (ABTP) was initiated as it was felt, somewhat belatedly, that previous NCA/SP building techniques had relied very heavily on imported materials which were neither appropriate nor would they be self-sustaining in the future. The ABTP has four elements:

- to study traditional architecture, materials and construction techniques;
- to survey locally available building materials and assess their suitability for buildings;
- to develop and test designs for evaluation and acceptance by local people; and
- to develop a methodology for self-help projects which blend with the cultural and seasonal requirements of local people

Already the Programme has investigated the suitability of using lime as a cement substitute; has introduced improved thatching; and has designed and constructed an improved tukul.

The Building programme's efforts to establish building contractors has received a serious set back with the only contractor it has so far helped. After one successful contract, the contractor was awarded a second to build staff houses for the Cooperative Training Centre. Despite phased payment schedules outlined in the contract, NCA/SP handed over the total payments before any work had been started. Furthermore, the contractor was then supplied with more materials than was on the bill of quantities and fuel (to the value of £S 11,000). Not surprisingly the contractor has withdrawn his labour from the site, the contract is unfinished, and the problem is currently unresolved.

Most training provided is on-the-job and was given during the

construction of buildings as a part of NCA/SP's general building programme. No formal artisanal training is given.

7.4.2 Roads Section

The objectives of the Roads Section are to set up a feeder road system and organisation; to operate spot improvements to open all-weather feeder roads; and to train personnel in road construction, maintenance and management.

NCA/SP now maintain 808 km of feeder roads using mainly labour intensive road maintenance. This has, unfortunately, experienced labour problems particularly where the roads pass through sparsely populated areas. They have adopted a task orientated scheme whereby the labour is given daily tasks to complete, after which they can go home and resume their private duties. This proved to be a more successful way of administering the work than their original piece-work system. Most of the maintenance work is limited to the rainy season - when it is most needed. From a cost and quality perspective, labour intensive road maintenance has proved to be viable and competitive when compared to the capital-intensive methods previously used. However, some of the more busy roads require a grader for maintenance to complement the labour intensive activities.

NCA/SP has also experimented with labour intensive road building with advice from Intermediate Technology Transport; and cooperation from the Kenyan Ministry of Transport and Communications and the International Labour Organisation. Sudanese staff have been trained in Kenya and with the necessary skills NCA/SP embarked upon the programme.

In 1984, NCA/SP opened a road maintenance office in Magwi with the Rural Council; and has plans for similar offices in Chukudum, Ikotos, and Torit. The Magwi office is funded mainly by NCA/SP who run the office, but it is hoped that the Area Council administration will eventually take on this responsibility and that road maintenance will be completely localised.

Within this section, they have a culvert production unit which

has recently realised an interesting side-line: The Water Section is experimenting with culverts for shallow well liners.

Figure 2.1 gives an indication of the extent of the road network and of the sections for which development has been proposed in 1986. A criticism of road construction policy in Equatoria in general is that they are not designed to last long without heavy maintenance. The Consultants were not in a position to make a judgement on NCA roads, but the evidence did suggest that the more heavily used roads were not standing up too well.

7.4.3 Water Section (Reference 23)

The objectives of the water section is to provide clean water, primarily for human consumption, by the operation of drilling rigs and installation of hand pumps; support to hand-dug wells on a self-help basis; utilisation of surface water resources; and the development of a localised maintenance facility.

Since 1975 over 1,000 boreholes have been drilled and around 800 capped with hand pumps. About 620 are in the Study Area. Support to 12 shallow well projects was given, with seven of these having hand pumps; but problems have been experienced in recruiting villagers to dig the wells. Where drilling and digging have proved difficult the exploitation of rainwater-catchment has been considered but with little success and enthusiasm on the part of the villagers.

A major problem facing the water section is the maintenance of hand pumps. Pump maintenance repairmen were trained by NCA/SP and transferred to the rural councils in 1983. Unfortunately they experienced financial problems which resulted in the repairmen not maintaining the pumps and a rapid deterioration of the pumps. To raise moral a Repair-man of the Year competition was established in 1984 and some of the pumps were put back into working order; but regardless of the repairmens' efforts the financial problem is still unresolved. Discussions are presently being held to put the onus on the local people - who use the pumps - to be responsible for organising the collection of money from within the community to pay the repairmen. This idea has met with some success in Madi and it is hoped the scheme will spread throughout the Study Area.

Some local manufacture of tools, fishing tools, and tripods has been undertaken by NCA, but it is felt that it is not appropriate, at this time, to contemplate the manufacture of spare parts for the wells and pumps.

7.4.4 Workshops

Three workshops - mechanical, electrical and carpentry - provide a service to NCA/SP's own infrastructure and support to its Projects.

(i) Mechanical Workshop

This workshop was operated in 1974 to support NCA/SP operation. Mechanical workshops in Southern Sudan are very few, characterised by the lack of qualified Sudanese mechanics, and availability of spare parts. Whilst the support of NCA/SP's Projects is the major part of the mechanical workshops function it is attempting to train mechanics, provide a mechanical service to the public on a self-supporting basis and preparing the workshop for localisation.

The workshop gives support to two workshops in Torit in the form of spare parts and used to send vehicles to a workshop in Pageri for maintenance prior to it closing down.

The workshop presently trains 10 people in basic car mechanics on a two year course. They are given 50 per cent practical and 50 per cent theoretical training in a cramped classroom. After their successful period of training they receive a testimonial from NCA. The course intake is every two years, with no guarantee that they will be employed by NCA. Indeed, only two per course are taken, the rest get jobs in Juba, despite the course not officially being recognised by the Government.

The mechanical workshop is now managed by Sudanese with an expatriate adviser at hand.

(ii) Electrical Workshop

This workshop is responsible for the maintenance and repair of all the electrical and electronic equipment - such as radios - the generating equipment and electricity distribution throughout

the NCA/SP compound.

Recently the RDCs have been fitted with solar lighting and pumping systems which also need maintenance.

(iii) Carpentry Workshop

This workshop was established in 1974 as a support activity to NCA/SP's work. Its original function - to produce doors, windows, fixed installations and other equipment for the building section, has been taken over by the building section. In 1979 more emphasis was put on its secondary function - to produce furniture for schools, dispensaries, offices and staff houses. At that time, demand for furniture was high so it set new objectives: To continue to supply NCA/SP with furniture; to introduce training in carpentry; and to establish itself as a self-supporting workshop supplying furniture to the public and private sectors. Production increased steadily, but in 1983 the workshop was reorganised and the number of items they produced was greatly reduced allowing them to concentrate on standardised products. With the increase in staff housing the workshop had to switch its attention to providing furniture for them.

As the furniture produced in the workshop was rather expensive, only Government or Military departments could afford it.

On-the-job training for its own carpenters was provided but they have a more formalised course for outsiders. They presently are training five people on a nine month course (45 per cent theory, 55 per cent practical) in basic carpentry using hand tools only. They hope to place these people within NCA at the end of their training. At present they have only a testimonial to say they have completed the course, but are working on a gradual scheme to come more in-line with MTC so that recognised trade certificates can be awarded. To this end they will hold another nine month course for 20 people, then after improving their own training techniques will hold a similar course to the three year pre-service carpentry and joinery course offered by MTC. Candidates for this will be selected based on their comprehension of English, their age

(younger people being more willing to learn) and on their previous qualifications from intermediate or senior secondary schools .

7.5 LOCAL INITIATIVE SUPPORT (LIS)

7.5.1 Background

The Local Initiative Support programme began in 1983 to encourage local individuals and groups to contribute towards local development. Its main objectives were as below:

- improving farm production
- establishing small scale industries
- establishing distribution and transport facilities
- improving communal infrastructure on a self-help basis (building roads)

The criteria for granting a loan was based on positive responses to the following questions:

- will it generate a continuous income
- will it create employment
- will it increase food production
- is it a service to the local community

By the end of 1985 approximately 79 loans totalling £S 205,000 had been disbursed (33 to refugees, 40 to Sudanese and 6 to cooperatives).

Other parts of the LIS fund were used to finance self-help schemes (£S 160,000) and house loans for NCA staff (7 loans totalling £S 65,000). These have not been considered by the Consultants.

The scheme was financed by NCA and in 1984 UNHCR contributed US$ 100,000 (£S 150,000) of which 75 per cent was to be used in the

refugee affected areas in Madi. The intention was that this contribution would form the basis of a revolving fund.

7.5.2 Loan Administration

Procedures have changed since they were introduced, and differ according to whether the recipient is a refugee or a Sudanese. The programme used to be the responsibility of the Human Development Programme and was handled by an expatriate. Refugee applicants were recommended to LIS by the Community Development Officer who was seconded from the Ministry of Community Development. A letter of application or an application form was submitted with details of the project, investment required, operating costs, expected income and loan required. This was countersigned with comments from the Community Development Officer (CDO), the Settlement Officer and the Project. On approval the applicant was given an expatriate contact person who was responsible for receiving the repayments.

The procedure for Sudanese is less structured as there are no CDSs or settlement officers involved.

More recently the LIS programme has been made a separate office, under the Director of Field Implementation, and is managed by a senior Sudanese staff member, with no direct expatriate involvement (Reference Figure 7.1).

A simple standard contract drawn-up and signed by the contact person, the LIS manager and the loan applicant agreeing the terms of the loan and a repayment schedule.

7.5.3 Disbursement

The loans are granted interest free with grace periods of up to one year before repayments at one, three or six monthly intervals are required. In some cases additional support in the form of free extra raw-materials, seedlings etc were given as an added incentive.

In the main, equipment, animals or raw materials were given in preference to cash; although total cash loans were given to some applicants. In these cases advice was offered - in the case of ox-cultivation - as to which animals would be more suited, by the Veterinary Officer,

but there apparently was no obligation on the applicants to accept the advice given.

NCA has generally assisted in providing back-up in terms of fuel and spare parts requirements.

Due to the insecurity situation, very few loans were disbursed during 1985.

Table 7.1 summarises the loan position, whilst Table 7.3 provides a more detailed account of the individual loans (Reference 24). Of the £S 206,000 disbursed, the refugees and cooperatives received around 25 per cent each, the remainder being loaned to Sudanese individuals.

7.5.4 Repayment

The repayment record has not been good, with Table 7.2 providing the details. It should be appreciated that conditions in 1985 were unstable and must, in part, have contributed to the poor record.

Confusion must have also played a part amongst the refugees. In mid 1985 substantial numbers returned to Uganda; at this time many believed, incorrectly, that Government was going to seize any of their assets acquired in Sudan. In an attempt to put matters straight, the UNHCR/PMRA informed the people that this was not the case and, 'on the contrary, you will be repatriated with all and whatever property you have unless you choose to sell them or when alone forget them behind'. It is believed that some refugees chose to understand this as meaning they could return to Uganda with assets acquired under the LIS programme.

In summary,of the £S 206,000 already lent, between £S 20-40,000 should have been repaid, whereas in fact by November 1985, only £S 8,000 had been recovered. Whilst this in itself is not such a serious situation, the more important fact is that the prospects of recovering a high proportion of the outstanding debt are not good. As will be discussed in the following section, many of the schemes have failed or are in danger of doing so. Whilst, in certain circumstances, assets may be recovered in part, for the remainder the loan will be a substantial loss. As shown in Table 7.1, the total value (including any repayments already made) of loans which the Consultants rate as still operating is

TABLE 7.1 LIS LOAN SUMMARY

Enterprise	Loans given (No.) R	S	C	T[7]	Failed (No.) R	S	C	T	Questionable (No.) R	S	C	T	Operating (No.) R	S	C	T	Value (£S '000) Given	Operating
Ox-cultivation	7	17	1	25	4	3	1	8	-	-	-	-	3	15	-	18	22.5	16.0
Tractors	1	2	-	3	1	-	-	1	-	-	-	-	-	2	-	2	25.2	23.7
Agro-production	4	5	-	9	2	1	-	3	2	1	-	3	-	3	-	3	17.8	6.0
Transport	4	5	1	10	1	1	-	2	2	1	-	3	1	3	1	5	42.3	29.8
Workshops	2	6	1	9	2	-	-	2	-	3	-	3	-	3	1	4	63.0	29.8
Tailoring	9	1	-	10	5	-	-	5	1	-	-	1	3	1	-	4	10.1	4.9
Production[1]	2	2	1	5	2	1	-	3	-	1	-	1	-	-	1	1	8.8	4.9
Retailing[2]	3	3	2	8	2	1	-	3	1	2	-	3	-	-	2	2	16.9	2.3
TOTAL[3]	**32**	**41**	**6**	**79**	**19**	**7**	**1**	**27[4]**	**4**	**8**	**-**	**14**	**7**	**27**	**5**	**39[5]**	**206.6[6]**	**117.4**

Source: *Consultants' estimates.*

Notes:

1. *2 brickmakers, 2 bakeries, 1 grinding mill.*
2. *including 1 photo studio.*
3. *excludes loans not negotiated.*
4. *Could include 2 more.*
5. *approximately 2 written off; 14 to be written off; 3 repossession of assets; 4 to be recovered from salary; 3 drastic action to be taken.*
6. *£S 50.4 to refugees, £S 108.1 to Sudanese, £S 48.1 to coops.*
7. *R = Refugees, S = Sudanese, C = Cooperatives, T = Total.*

TABLE 7.2 LIS LOAN - SCHEDULED AND ACTUAL LOAN REPAYMENTS

	Mid 1984	End 1984	Mid 1985	End 1985
Scheduled (cumulative)				
No. of loans to be repaying	10	12	36	59
Repayment (£S) (rounded)	2 725	6 250	20,900	43,000
Actual (cumulative)				
No. of loans being repaid	n.a.[3]	n.a.	20[1]	?
Repayments (£S)	n.a.	n.a.	8 200[1]	?

Source: *LIS (NCA)/Consultants' estimates.*

Notes: [1] *By Nov. 1985.*

[2] *Of these, 5 projects have failed and 2 have repaid in full.*

[3] *not applicable.*

TABLE 7.3 LIS LOANS

(A) OX-CULTIVATION

Acc. No.[2]	Name	Project Comments[3]	Date of agree.	Loan £s	Repayments[1]
6544	Emanuel Biaa Choyi	Now cultivating 35 fadans with his trained oxen. Claims to be getting 50% higher yields by ox cultivation, and expects to repay his loan soon	2/5/84	600	1st due (O)
6538*	Luka Madra Opari II	A refugee from Uganda who is making good use of the trained oxen and plough.	9/4/84	600	1st due (O)
6540	Aerman Andoga Loa	This farmer is making good use of his trained oxen, plough and cart.	2/5/84	1150	1st due (O)
6532	Marino Odu Arapi	This farmer has just started working with the trained oxen and plough, after delays due to illness of one oxen.	2/4/84	1150	1st due (O)
6569	Azo Raphael Kerepi	Given trained oxen and plough which are now working.	13/9/84	1150	Deductions from NCA salary (O)
6570*	Tartisio Adule Orapi II	A refugee from Uganda who was given trained oxen and plough. Only just started to use them.	29/9/84	1150	Due next year. (O)
6571	Wilson Okot Orapi/Bori	Given trained oxen and plough which were recently being used to good effect. However due to sickness assets will be repossessed	18/9/84	600	Repossess (F)
6573	Arkanjelo Androga Patibi	Given cash to buy trained oxen, plough and cart. Only recently being used in the field and is currently in hospital.	10/9/84	1150	Due next year (O)
6530* N	Ibrahim Jima Kit I	Given trained oxen and plough, but one ox died (slaughtered?) and the RDC retrained the other. The refugee has returned to Uganda.	2/4/85	550	Written off (F)
6541	Droko Drake Patibi	Given cash to buy trained oxen from RDC, plough and cart but 5 oxen were slaughtered before they were trained, and 1 returned to RDC.	13/4/84	1400	£200 paid to be recovered from salary (F)

(A) OX-CULTIVATION (Continued)

Acc. No.[2]	Name	Project Comments [3]	Date of agree.	Loan £s	Repayments[1]
6533*	Jimy Docho Kit III	Given cash to purchase oxen but only bought one pair and used the balance for other purposes. The refugee has now returned to Uganda and the pair of oxen have been reclaimed.	2/4/84	700	Written off (F)
6534* N	Abdullahi Juma Kit I	This refugee was given cash to buy oxen and plough, the oxen were sent to the RDC for training, but were then slaughtered. He has since returned to Uganda.	29/5/84	600	Written off (F)
6542*	Jacob Dulu Afoye III	A refugee whose oxen are at the RDC for training, but he did not have enough land to cultivate. He has recently been given more land.	12/6/84	600	1st due (O)
6543*	Anguyo Aliasi Kit III	This refugee was chosen to introduce animal power into the area as an example to his fellow farmers. However, he used the cash to cultivate his land with labour. He has a job with UNHCR as a teacher at the Intermediate School.	11/6/84	600	Deducted from his UNHCR salary (F)
6549C	Coop Society Kit I	The chairman of this coop decided to return to Uganda, leasing the three pairs of oxen and ploughs with the remaining members. They slaughtered one pair and RDC have reclaimed the remaining 2 pairs.	n.a.	900	Part reclaimed oxen (F)
6572	Anjelus Vuga Moli Tokora	Given cash to buy oxen and plough, but was mispent	10/9/84	450	Reclaimed from NCA salary (F)
6589	Peter Karyang Katire	Recent Contract	14/6/85	1500	Not yet due (O)
6588	Gabriel Solomon Muci Katire	Recent Contract	11/6/85	2500	Not yet due (O)
6565	Allanga Ewart Keyala	Project working well.	23/8/84	340	85 paid 6/8/84 (O)

(A) OX-CULTIVATION (Continued)

Acc .No.[2]	Name	Project Comments [3]	Date of agree.	Loan £s	Repayments[1]
6587	Peter George Kapoeta	Recent Contract	16/6/85	300	Not yet due (O)
6586	Bosco Wani Imurok	Project working well.	5/11/84	350	125 paid (O)
6580	Constantino Olla Magwi	Oxen under training.	25/10/84	650	1st due (O)
6583	Anjelo Ochan Palobaka	Assistant farm manager at the RDC, has four oxen one plough and 16 fedans to cultivate. He hires out his ox team in return for labour on his land.	24/10/84	1455	1st due (O)
6582	Joseph Leri Palobaka	One bull died. Three still working.	24/10/84	1500	1st due (O)
6581	Santino Gitara Pariji Kivara	Oxen under training.	19/10/84	500	1st due (O)

(B) TRACTOR CULTIVATION

Acc. No.[2]	Name	Project Comment[3]	Date of agree:	Loan £'s	Repayment[1]
6562	Obwolto Group Polataka	Purchase of new tractor for cultivation and transport; leader could not be contacted, but thought to be working well.	21/5/84	19,686	Payment due (O)
6561	Silman Wadrif Polataka	This tractor is used for ploughing his own fields, and for hiring out at £525 per fedan to neighbours.	1/5/84	4,000	Payment due (O)
6506*	Felix Onoma Choyi	This refugee was given loan to repair tractor, for his own use and for hiring out. He has gone back to Uganda.	22/12/83	1,500	Written off (F)

(C) AGRO-FORESTRY

6525	Patrick Lomicu Loa	Was given seedlings and cash to grow fruit trees which are still maturing. Payments to be deducted from salary. Project not working well.	8/2/83	1,214	Long-term project (F)
6548	Festo Fuli Nimule	Was given seedlings and cash to grow fruit trees which are still maturing, but he is selling seedlings to raise money. The borrower is at the ATCI and employs his father to work in the plantation.	9/5/84	2,000	(O)
6547	Rufino Golebe Karepi	Was given seedlings and some cash to grow eculyptus, teak, veem and Katunda trees for building uses; lemon, guavas and mangos for fruit. Has planted 28 feddans.	8/5/84	1,500	(O)

(D) CROP PRODUCTION

Acc. No.[2]	Name	Project Comment[3]	Date of agree:	Loan £'s	Repayment[1]
6539	Joseph Kalaudio Mugali	This NCA employee was given seeds and seedlings to grow bananas, onions, pawpaws, maize, sorghum and groundnuts. Project proceeding well.	2/5/84	2,500	Expected Nov. 1985 (O)
6522*	Silvino Isse Choyi	This refugee was given money to build a barn for the airing of his tobacco. He has since died from drowning.	25/1/84	1,500	Written off (F)
6532*	Saverino Tuni Choyi	This refugee was given money to build a barn for the airing of his tobacco, but it caught fire and was destroyed.	25/1/84	1,500	Delayed? NTC to be approached
6523*	Hilary Oyuru Choyi	This refugee was given money to build a barn for the airing of his tobacco. Now crop yields have affected his ability to repay loan.	25/1/85	1,500	Delayed? NTC to be approached
6590	Christo Djamas Torit	A loan to finance tractor hire and other inputs to cultivate 50 feddans of sorghum, cassava and millet. Progress not thought to be good - a strange decision.	24/6/85	5,000	?

(E) ANIMAL REARING

6507*	Shaban Adam Kit I	This refugee was given money to start a poultry business. It was never established because chicks were unavailable and he has now returned to Uganda.	22/12/83	1,100	Written off (F)

(F) TRANSPORT

Acc. No.[2]	Name	Project Comment[3]	Date of agree:	Loan £'s	Repayment[1]
6505*	Roman Ali Opari I	This refugee was leased a landrover for general transporting and as an ambulance for NCA. He is doing well but claims to have paid back more than the original agreement. He finds competition for trucking business rather strong in Opari.	N.A.	7,500	£600 paid. NCA usage credited to his account (O)
6552*	Dominik Draperi Ame	This refugee was given cash for spare parts to repair his car so it could be used for taxi services, however the car has not been repaired.	1/6/84	2,200	Has repaid £200 (?)
6557*	Yusif Fadul Pageri	This refugee was given cash for spare parts to repair his truck so it could be used as a general transporting facility, however the money was used for stocking his shop. He has now returned to Uganda.	27/5/84	3,300	Written off?(F)
6555*	Ramadan Morsan Ame	This refugee was given cash to repair his Peugeot, but claims it was not enough to completely repair it. However, the car has been reported to be running.	20/4/84	3,000	Drastic action to be taken (?)
6585	Abdallah Mambe Torit	Lorry owner who has fully repaid the loan for spares to repair the vehicle.	3/11/84	900	Repaid £900 (O)
6568	Thomas Lohima Torit	Loan used to repair church vehicle for church use, but was used to transport cassava from Yei to Juba. However, their driver was never paid so he allegedly stole the lorry starter motor and ran away. The lorry is now in Juba not working.	23/8/84	2,000	Repaid £300 (?)
6564	Mario Awet Alor Torit	Loan used to repair Commer lorry which was used to transport sand and gravel for NCA, who supplied fuel. Now he is transporting people to Keyla, Maguri and Lorayo.	26/6/84	800	Repaid £800 (O)

(F) TRANSPORT continued

Acc. No[2]	Name	Project Comment[3]	Date of agree:	Loan £'s	Repayment[1]
6510	George Sworo	NCA employee who was made redundant, and has now run away.	10/1/84	2,000	Written off (F)
6560c	Mombasa Mutu	A co-op running a bus service to Hilieu and Ikotos from Torit.	12/7/84	20,000	£800 repaid (O)
6591	Pius Olango	A loan to repair his landrover. NCA employee.	-/9/85	615	(O)

(G) WORKSHOPS

Acc. No[2]	Name	Project Comment[3]	Date of agree:	Loan £'s	Repayment[1]
6550c	AKU General Purpose Loa	Given money and materials for a large workshop with tools, and employing 3 trained carpenters, 3 assistants and 2 watchmen, making beds, tables and chairs to a reasonable quality for the local community. NCA has supported this workshop with the supply of timber etc., but it is currently facing supply problems.	23/6/84	20,000	Payment due soon (O)
6554*	Fabian Zema Choyi	This refugee was given assistance to establish a carpentry business, but is reported to have returned to Uganda.	1/12/84	360	Written off (F)
6502*	Abdallah Hassan Kit II	This refugee was given cash and equipment to establish a carpentry business, but has since returned to Uganda.	14/10/84	5,300	£250 paid (F) Written off assets to be recovered
6557	Balus Davies Pageri	Was given workshop and cash for spares. The loan is administered from Torit, with spares supplied from Hilieu. RDC gave workshop vehicle repair work and he also made equipment for schools programme. However, after welding set broke down he repaired his own car and is now in the taxi business.	13/4/84	8,000	Repossess workshop. £5,800 recovered (?)
6578	Redento Karmelo Loruhoi	Blacksmith in a small village a few kilometres from Hilieu making hoes, axes etc. for the villages around. He has a UTU manufactured bellow. He was not working when visited because he was cultivating.	17/9/84	1,264	Not yet due (O)
6509	Didako Kamutu Torit	Mech. workshop doing mainly car repairs, servicing an area spreading to Nimule. Owner has been well trained in Sudan and East Africa, and is currently training 3 boys himself. He complained of not having been paid for his government work, but his records show differently. He promised to begin repayments immediately.	20/1/84	6,000	1st due 1/1/85 (O)

(G) WORKSHOPS continued

Acc. No.[2]	Name	Project Comment[3]	Date of agree:	Loan £'s	Repayment[1]
6558	Raphael Badie Torit	Mech./welding workshop making chairs and beds but say the better business is to do repairs. Employs three people all trained by NCA. Welding set was not working when visited. His main problem is supply of materials.	1/5/85	13,296	(?)
6556	Henry Jada Torit	Carpentry workshop making chairs, tables and cupboards, but has now deserted to Juba with his tools and generator. His old workshop has a large quantity of finished work of good quality, but all indications are that there is little market for them in Torit. Up to ten people were employed when operating. He has been traced.	5/4/84	6,300	1st due (?)
6516	Francis Oromac Polataka	Carpentry workshop near the Polataka RDC. The owner was in Torit obtaining materials when visited by The Consultants, but was reported to be working well doing work for the RDC.	14/9/84	2,500	Payment due (O)

(H) TAILORING

Acc. No[2]	Name	Project Comment[3]	Date of agree:	Loan £'s	Repayment[1]
6537*	Gabriel Luzira Afoye I	This refugee was given a sewing machine and some cash for working capital. Working well.	2/4/84	600	£50 paid (O) 13/4/85
6515*	Gasper Amuson Ame	This refugee was given a sewing machine and some cash for working capital, and is working well.	20/1/84	800	£160 paid (O) 3/8/85
6526*	Charles Vagei & Group Ame	This refugee was given sewing machines and money to build a workshop. It is working well and claims to have repaid first installment.		2,650	£100 paid (O)
6518	George Tongun Pageri	Was given sewing machine and some cash for working capital, is working well.	20/1/84	800	£300 paid (O)
6516*	Madra Orobi Kerepi II	Was given sewing machine and some cash for working capital, but no more information known. Gone to Uganda.	20/1/84	800	Written off (F)
6514*	Margaret Iya Choyi	This refugee was given sewing machine and some cash, but it is not working, but offered a bull and calf as payment of installments.	20/1/84	800	£100 paid?
6502*	Ali Salim Kit III	These refugees were given sewing machines and cash for working capital, but not working.	15/10/83	1,260	Drastic action to be taken (F)
6513*	Said Yusuf Kit I		20/1/84	800	Drastic action to be taken (F)
6519*	Ksebit Loa	Has gone to Uganda with sewing machine.	20/1/84	800	Written off (F)
6520*	Roman Mohmud Kit I	Conflicting reports on his whereabouts. Possibly gone to Uganda.	-/11/84	800	(F)

TABLE 7.3 LIS LOANS

(I) PRODUCTION

Acc. No.[2]	Name	Project Comments[3]	Date of agree.	Loan £s	Repayments[1]
6577	Samuel Bala Borewajak	Bakery made from bricks, but moved because of lack of wheat. Was designed to serve Hilieu area, but owner was made redundant by NCA and left for Yei. It is uncertain if he will return to resume the business.	18/9/84	450	If reemployed by NCA, loan will be recovered (F)
6563*	Vincent Dramudu Pageri	This refugee was given cash to set up a bakery but it failed shortly after opening. The owner has now returned to Uganda.	24/5/84	1100	Written off (F)
6508*	Denis Gule Ame	This refugee was given cash to establish a brick making business supplying bricks to NCA building programme. Project failed.	22/12/84	2000	450 repaid, written (F)
n.a.	Elizeo Edema Mugali	Brick production - has produced 30,000 bricks but having a problem to market them. RDC to take them.	n.a.	300	(?)
6579[C]	Katire Gen. Purpose Coop	Loan for a grinding mill.	2/10/84	4910	£s800 repaid (O)

TABLE 7.3 LIS LOANS

(J) RETAILING

Acc. No.[2]	Name	Project Comments[3]	Date of agree.	Loan £s	Repayments[1]
6536	Drale Gasim Loa	Small bookshop with about 30 books: school text books, bibles; and some novels. Books are ordered from Juba University mainly for local schools. Owner is a librarian at the mission secondary school. Not much evidence for £s1600 worth of books or buildings.	2/4/84	1600	? Payment due
6504*	Kalfan Farjallah Kit II	Given money to establish a small grocery shop buying local and own produce for sale to community. However shop is now closed due to ill health of the owner.	15/10/83	1950	Drastic action to be taken?.
6521*	Thomas Amamaru Kit III	This refugee was given cash to set up a fish managing business but he has since returned to Uganda.	1/2/84	500	Written off (F)
6501*	Asunta Ojolo Torit	Ugandan refugee who has since returned to Uganda having only repaid £s250.	14/10/83	2000	Paid 250 balance
6584	Jino Longa Torit	Bookshop, but not working when visited.	26/10/84	1500	(?)
6531	Samuel Kenyi Torit	Photo studio. Failed enterprise - strange decision.	2/4/83	7000	600 paid Assests to be repossessed (F)
N/A	Ayela Gen Purpose Coop. Palwar	Contract not yet finalised. Loan for store which has already been constructed.		2300	(O)
N/A	Opari Consumers Society Opari II	Contract not yet finalised. Loan for Store and Grinding mill.	N/A	N/A	(O)

Table 7.3 Notes/Sources.

1 *(O) = Operating. (F) = Failed,(Q)= questionable. Consultants' rating.*

2 ** = Refugee, C= Cooperative, No mark = Sudanese.*

3 *The comments are those of the Consultants, after discussions with LIS staff, other interested parties and some of the borrowers. Whilst every care has been taken to be as accurate as possible, the situation is a changing one and some of the details may not be totally correct.*

around £S 117,000. It is anticipated that most of £S 89,000 tied up in failed or questionable loans will not be recovered. To what extent the still operating loans will default in the future is unknown, but likely to be significant.

It is known that some individuals, aware that the funds originated from UNHCR are refusing to make repayments to NCA.

7.5.5 Development Achievement

Whilst financial considerations are very important, it is also necessary to consider the loans in terms of the benefits created to the individuals and to society as a whole. For this purpose, the loans have been grouped into eight categories, as used in Tables 7.1 and 7.3.

It should be appreciated that it was only possible for the Consultants to visit a cross-section of the borrowers and that it was not feasible in the time available to make highly detailed assessments. Nevertheless it is believed that a fair and useful appraisal was made. In assessing these, three classes of success were used, namely: Operational; questionable; or failure. Whilst the last two are self-explanatory, the operational group requires a little explanation. Any project which appeared to be going ahead without major problems and where, even if payments were behind hand, the borrower gave the impression that he would repay the loan, was classified as operational.

(a) Ox-cultivation (25 loans, 11% of total LIS, 70% operational)

This is the most common type of loan, and indications are that it is amongst the most successful. Animal power has been introduced successfully into the western areas, and whilst the great majority of purchasers have paid cash, LIS has played a part in the success of this programme. It is understood that many farmers are now cultivating substantially larger areas and should find little difficulty in repaying loans. Some farmers carry out work for other farmers, generally at very low charging rates (e.g. £S 25/feddan). They should be encouraged to charge more realistic rates.

The Consultants believe there were a few simple mistakes made when

selecting applicants and included the following:

- Lending to refugees who had very limited land and who could have handled their areas manually;

- lending to refugees who had little agricultural experience and who were more interested in the opportunity of obtaining cattle which could be slaughtered and the meat sold. Three of the refugees who slaughtered their cattle had a non-agricultural background;

- providing funds to buy more than one pair of oxen and a plough. As will be stated again, the success of a loan is jeopardised by making it larger than absolutely necessary.

(b) Tractor loans (3 loans, 12% of total LIS, 66% operating)
Too little could be found out about the two operating loans, despite two attempted visits, to make a proper assessment. Reports, however, are encouraging, with the tractors being kept busy and the owners indicating that they will be in a position to start repayments shortly. It is understood, however, that charging rates are far too low at around £S 25-30 per feddan per ploughing. In the 1984 Hunting report (Reference 1), it was calculated that rates would need to be at least £S 33 per feddan. Since then, allowing for inflation, the rate would have increased to around £S 75 per feddan. The recent c.i.f. Torit price of an MF - 290 tractor is in the order of £S 45,000 compared to £S 18,000 in late 1963. In principle the Consultants believe that tractor loans should not be given priority as they tend to be large loans favouring a few people, they encourage the use of foreign exchange to cover capital purchase and running costs, and compete with the ox-plough which is far less expensive in foreign exchange terms.

(c) Agro-production (9 loans, 9% of total LIS, 33% operating)
This covered a very mixed selection of projects, only three of which could be classified as operating.

It was not clear why loans were given for building tobacco barns,

as these are normally provided by NTC, who have plenty of experience in these matters. None of the loans was operating successfully.

The £S 5,000 loan to a single individual to cultivate 50 feddans of food crops appeared to the Consultants to be a strange decision, given that the applicant was a building contractor with plenty of other responsibilities to NCA.

The poultry loan which failed is regrettable; indications are that there may not have been adequate attention paid to the supply of day-old chicks.

The agro-forestry projects, whilst at first glance appearing to be unsuitable candidates for loans of this nature, were, in fact, rather hopeful ventures. The initiative and dedication of one NCA staff member had clearly been passed on to the loan recipients and they were likely to be successful. As most of the future revenue would result from fruit sales, care would be necessary to ensure that local markets for such produce were not over-supplied.

(d) Transport (10 loans, 21% of total LIS, 50% operating)
This is the most difficult section on which to comment. Transport is one of the major problems in the area and NCA's attempts to ease the situation by providing loans for a number of different purposes is understood and applauded. It is less clear, however that LIS should be concerning itself with assisting vehicle owners in effecting one-off repairs to enable them to run again for a few more kilometres, as this makes little impact on the overall problem.

About half of the total loans to transport lie with the Hilieu Bus Cooperative which runs a bus primarily for the transport of staff and families from/to Hilieu - Torit. Staff who use the bus regularly are provided with subsidised tickets, the subsidy being paid by NCA. Given the particular circumstances, this would appear to be a sensible venture. It is unlikely that there would be further opportunities for a similar venture elsewhere in the Study Area.

(e) Workshops (9 loans, 31% of total LIS, 44% successful)
This is the most important category in terms of money lent, and has not proved very successful. Both loans to refugees have been failures. The Consultants' view is that almost all of the loans have been far too large and that much smaller scale projects should have been encouraged. Several of the recipients were clearly not adequately experienced in handling the paperwork aspects. Problems over supplies of raw materials and spares were common.

(f) Tailoring (10 loans, 5% of total LIS, 40% successful)
These loans were made almost exclusively to refugees and given the problems of finding suitable ventures for refugees, this is understandable. The loans are generally small and of a high risk nature, in that competition amongst tailors is strong and that the assets are easily carried, should a refugee wish to return to Uganda. It is understood that several sewing machines have been given to refugees by other agencies.

Given the circumstances, the decision to extend these loans can be justified, but it is unlikely that further expansion in this field would be appropriate. Should an individual with a good reputation identify a particular unsatisfied market for tailoring services, exceptions to the general policy could be made.

(g) Production (5 loans, 4% of total LIS, 20% success)
It is unfortunate that this has not been a successful sector, as the Consultants share NCS's concern over the need to diversify the economy and create employment opportunities. Grinding mills have generally been successful throughout the Study Area. It is hoped that the cooperatively-owned mill at Katire will be able to face the competition introduced recently, when traders installed an electrically powered mill, utilising hydro-power from the Imatong Forestry Company.

(h) Retailing (8 loans, 8% of total LIS, 25% success)
Apart from two loans made recently to two cooperative societies for storage construction, none of the true retailing ventures

appear to have been successful. The Consultants believe that these are not suitable projects to support, unless the borrower has already proven himself capable of running a business and is in a position to provide a large percentage of the capital.

(i) General

Of the 79 loans, approximately 27 have failed, 14 are questionable and the remaining 39 are still operating. Of the still operating loans, 6 are recent contracts and 14 are overdue with their first repayment.

Of the 32 loans to refugees, 22 per cent are classified as operating and 59 per cent as failures. Of the 41 loans to Sudanese individuals, 66 per cent are classified as operating, whilst 17 per cent have been failures. Only one of the five cooperative loans have failed, the remainder are still operating.

The refugee record is very disappointing, and provides an indication of the problems a development agency faces when attempting to assist a group of people who are, quite naturally, in an unstable situation. Of the 32 refugees who received loans, approximately 13 have returned to Uganda. About 14 of the loans appear to have failed because of dishonesty.

Amongst the loans to Sudanese, of the 7 failures, three resulted from dishonesty.

The reasons for failure or for achieving a questionable status, other than dishonesty, are numerous. The main reasons appear to be as follows:

- Inadequate preliminary planning to determine if a loan was really necessary and to assess whether the proposed project would be financially viable;

- inadequate initial attention to the question of sources of supplies;

- inadequate guidance on the fixing of prices for services and outputs sold;

- inadequate business experience;

- inadequate supervision by LIS management.

It must be stressed that whilst the Consultants were not very impressed by the LIS programme, they were aware that the present management has inherited many problems not of its own making.

CHAPTER 8
COOPERATIVES

8.1 BACKGROUND

The first primary societies in the Study Area were established under a Government Project around 1972. These societies were based mainly in ethnic groupings, for example, The Acholi General Purpose Society. At that time the Department of Co-operatives in Juba was actively encouraging the development of further societies and the attempts to form a co-operative union.

The first attempt was made in 1974 with six primary societies, three from Torit, two from Acholi and one from Madi. Progress was made at each subsequent attempt culminating in a successful meeting on the 31st December, 1978 when agreement was reached by 23 primary societies to form the Torit District Cooperative Union (TDCU). Some 19 other primary societies also attended the meeting but did not register as founder members of the Union. The TDCU was formally registered on 6th December, 1978 with the following stated objectives:

Short term

- importation and distribution of inputs and machinery necessary for farm production, processing and marketing such as some chemicals and agricultural implements, and to export farm produce, partly or wholly processed;

- the distribution of essential commodities to the primary co-operative societies;

- incur loans for enrichment of further production;

- guidance and coordination of business of the Societies and Union, and provision of necessary assistance and facilities to them so as to carry out their main objectives and functions without hindrance;

Long term

- to extend credit facilities to its members;

- guarantee loans incurred by its members;

- recruit and train such staff for the members as may be needed by them, and to organise co-operative education courses, campaigns etc, in order to provide technical know-how to members;

- planning and building of a new Union co-operative building in Torit.

It was decided that the TDCU should have a committee consisting of eight members representing primary societies and two representing organisations in Juba, namely the Equatoria Trading Corporation and the Regional Development Corporation. The requirements for registration were and are the payment of a £S 25.00 entrance fee and purchase of a £S 75.00 share per society. These rates were recommended by the Ministry of Co-operatives and Rural Development and were much higher than the £S 10.00 and £S 20.00 originally considered by the societies.

In addition to the formation of the TDCU, there have been two parallel developments. First, there has been a slow but steady increase in the number of Primary Societies, most of which function as general purpose co-operatives. Secondly, NCA initiated a Co-operative Project in 1976 which has been used as a service to provide advice on the development of co-operatives in the Study Area, and as a channel for providing funds (both grants and loans) to meet some of the capital and recurrent costs incurred by the TDCU and the primary societies.

8.2 TORIT DISTRICT CO-OPERATIVE UNION

8.2.1 Membership

At the November 1984 annual general meeting of the TDCU there were said to be 40 primary societies registered with the TDCU plus a further 83 unregistered societies which were operating within the Study Area. These figures, however, refer only to societies having deposits with the TDCU, the total number of societies taken from TDCU file records is 43 registered and 96 unregistered societies (see Table 8.3).

The only advantage of paying the £S 100 registration fee is that it confers the right to vote when electing Union Committees and on proposals affecting Union policy. There is no financial benefit resulting from registration though this could change; if the Union were in a position to pay dividends the registered societies would normally have a preferential status.

Another reason why many societies have never paid their dues and registered is because they have no permanent function (see Section 8.2.2). It is the non-permanent or seasonal status of these societies which, according to Senior TDCU staff, prevents the Union from maintaining a register of active societies in the Study Area. The problem is that there are societies whose members have decided that there is no justification for their society to operate at any particular time or in any particular year, thus the normal criteria for deciding whether a society still exists, that is that it is actively trading, does not apply in the Study Area. To date the TDCU have not been able to devise a classification system for active, dormant, seasonal and dead societies; any such system would necessitate regular visits to all societies which had not traded in the previous 6 - 12 months.

8.2.2 Functions

The TDCU has had only partial success in its endeavours to achieve the objectives detailed in Section 8.1. Its main functions have been and still are:

- the purchase and sale to primary societies of essential commodities such as sugar, salt and flour;
- to sell such commodities at a reasonable price;
- the construction of six regional stores at Obbo, Pageri, Torit, Kapoeta, Chukudum and Juba. The latter is a rented building which serves as a retail shop and as a transit store for commodities purchased in Juba. The other stores have a retail shop and also act as depots for goods purchased from or to be delivered to primary societies in the area which they serve;

- the purchase and sale to societies of agricultural equipment, hand tools, vegetable seeds and grinding mills;

- the establishment of TDCU owned and operated grinding mills at Torit, Obbo, Pageri and Kapoeta. The Borewajak mill has recently been sold to the Hilieu members as a Primary Society.

The Union has not established itself as a credit source using its own funds nor has it been able to arrange for commercial loans to be given to its member societies.

Though approaches were made to commercial banks and lending agencies in Khartoum, the conditions attached by the banks to loans namely they can only be given to individuals and not to groups, and they are linked to Islamic principles, make them unsuitable for most rural development in Southern Sudan. This reaction by the banks is a constraint on TDCU's trading activities consequently it has applied for a large loan from NCA. However, even if the banks had provided credit facilities, the TDCU would still have applied for the loan from NCA because there are no interest or service charges.

An important, though unplanned function of the TDCU is to maintain market price stability. It is noticeable that if the Union's central store in Torit runs out of a particular item the price of that item in the local shops often rises almost immediately.

An indication of the commodities in which the TDCU trades is given in Table 8.1. This table illustrates clearly the two main functions of the Union, that is the sale of essential items and of agricultural inputs.

8.2.3 Funding

The TDCU receives deposits from both registered and unregistered societies; in 1983/84 the deposits were £S 80 000.00 and in 1984/85 were £S 168 284. These funds together with surpluses from previous years are used to purchase commodities which are sold through the TDCU branch retail shops or to Primary Societies.

TABLE 8.1 SALES BY TDCU

Item	Unit	1979/80[1]	1982/83	1983/84	1984/85
Sorghum	90 kg sack	11000[2]	912	8347	2850
Sugar	50 kg sack	150	nd[3]	nd	279
Salt	65 kg sack	110	366	967	1472
Maize	90 kg sack	-	779	2419	6226
Maize seed	90 kg sack	44	nd	nd	nd
Sorghum seed	90 kg sack	44	9	4	nd
Groundnuts	35 kg sack	55	-	-	-
Onions	80 kg sack	-	37	-	15
Hoes	No	10000	13531	10925	16012
Pangas	"	5000	5969	1072	3372
Slashers	"	5000	1305	-	-
Sickles	"	2000	2260	806	nd
Rakes	"	500	756	1275	nd
Ox ploughs	"	36	71	147	212
Grinding Mills	"	nd	5	6	1
Vegetable seed	500 gm tin	-	277	137	nd
Dried milk	500 gm tin	1200	nd	nd	nd
Cooking oil	20 l tin	nd	169	498	1776

Source: TDCU and TDCU Stock areds.

Notes: [1] Figures given in 1979/80 report are obviously rounded.

[2] The large figure for sorghum in 1979/80 is a result of food aid distribution at reduced prices.

[3] nd - no data.

Income is also raised by adding 15 per cent to the purchase price when selling commodities to the societies. The society adds a further 15 per cent when it sells to a member while it adds 20 per cent if selling to a non-member. The Union adds 38 per cent when selling through one of its branch retail outlets. The price for an item costing the Union £S 100.00 would be:

Union sells to a Primary Society	£S 115.00
Primary Society sells to a member	£S 132.25
Primary Society Sells to a non-member)	£S 138.00
Union sells through a retail shop)	

The TDCU also receives funds from NCA. Non-repayable funds are given to cover salaries of several senior staff, for buildings and for the purchase of some items of equipment such as tractors, while funds for fuel, tools, seeds, foodstuffs and grinding mills are reimbursable.

Extracts from the annual trading accounts of the TDCU as presented at the annual general meetings (Table 8.2) show that the accounts have been in surplus every year except 1980/81. In that year embezzlement and incomplete financial records prevented the preparation of accounts.

It was not possible to obtain an overall view of the financial viability of the TDCU as the accounts were in some disarray . The NCA chief accountant, however, indicated that the outstanding debt owed by the TDCU to NCA was in the order of £S 1.8 million, as at late 1985. If trading surpluses of a similar size to those apparently generated in 1984/85 (i.e. £S 0.4 million) are forthcoming in the future, there is every indication that the TDCU will be able to pay back its debt and start to generate surpluses after a few years. This is very encouraging, as the cooperatives play a very important role in development of EBEE.

8.3 PRIMARY SOCIETIES

As mentioned in Section 8.1, there are 139 Primary Societies of which 43 are registered. Many of these societies, however, operate on a seasonal basis by trading only in the 'hungry period' from April to September. They remain inactive from October to March.

In Acholi and Madi most societies operate all year round in Torit

TABLE 8.2 EXTRACTS FROM TDCU ANNUAL ACCOUNTS (£S)

	1979/80	1980/81	1981/82	1982/83	1983/84
Cash sales	248,454	-	282,695	782,515	1,230,372
Offset cheap sales[1]	60,000	-	-	-	-
Debtors	42,788	-	44,922	6,405	12,975
Grinding mill revenue	-	-	571	5,123	21,024
Other revenue	-	-	-	-	3,235
TOTAL	351,242	-	328,188	794,043	1,267,606
Surplus[2]	19,929	-	13,257	81,961	204,863
To reserve fund 25%	4,982	-	3,314	20,490	51,216
To training fund 10%	1,993	-	1,326	8,196	20,486
Disposable Surplus	12,954	-	8,617	53,275	133,161

Source: TDCU.

Notes: [1] This item was to offset the reduced price of food grains sold for famine relief.

[2] The surplus for 1978/79 was said to be £S 1330.00 while that for 1984/85 is estimated to be about £S 425,000.00. The surplus is calculated by deducting the value of stock at the beginning of the year, purchases, sales costs, salaries, grinding mill depreciation and miscallaneous expenses from the sales of goods plus revenue from grinding mills plus the value of stock at the end of the year. At the end of 1984/85 a large stock of sorghum was being held; it was valued at the price it would need to be sold at if the TDCU were not to make a loss on it - this was over £S 100 per tag.

TABLE 8.3 LOCATION OF PRIMARY SOCIETIES

Location	Registered	Unregistered	Total	Permanent	Seasonal
Torit	21	32	53	10	43
Lafon	1	1	2	-	2
Palotaka	9	18	27	27	-
Madi	4	16	20	20	-
Ikotos[2]	4	21	25	-	25
Chukudum	2	7	9	-	9
Kapoeta	2	1	3	1	2
TOTAL	43	96	139[1]	58	81

Source: TDCU.

Notes: [1] The total number of Primary Societies taken from the TDCU files was 151. This included four societies whose location was unknown to TDCU and NCA Cooperative staff; two societies which no longer exist, four societies whose names occur twice and two societies at Yei and Juba on the West Bank.

[2] Ikotos is given a separate identity as it is to become sub-RDC area.

about ten operate a similar schedule while there is one permanent society in Kapoeta. The balance of those in Torit/Ikotos and Kapoeta plus all the societies in Chukudum and Lafon are seasonal. These figures are estimates made by TDCU staff but in the absence of more accurate data they are assumed to be correct.

Details of the societies in each RDC area are given in Table 8.3 which shows that out of a total of 139 primary societies only 58 or 42 per cent are permanent.

The objectives of the Primary Societies are:

- To increase agricultural production by making seeds, tools and other items easily available to the farmers;
- to sell essential items such as sugar, salt, flour and soap. The 1977 Presidential decree saying that these items should be marketed through co-operative societies is still on the statute books;
- develop local industries such as milling, carpentry and blacksmithing.

The only criterion which was identified as indicating the success of a society was the level of its deposits with the TDCU. This figure is an indicator of a society's activities and the profitability of those activities; it can also reflect the support given by the society's members in either using the society's facilities or depositing money with the society. In Table 8.4 the societies are categorised according to the amount deposited with TDCU. The society in category one is very commercial running a bus service, based on Torit, and a grinding mill. It is not the success of one society which is so striking, rather it is the fact that ten per cent of the societies have deposits exceeding £S 5000.00, which illustrates clearly that a primary society can be a financial success. A word of warning must, however, be sounded: Of the 21 societies with deposits exceeding £S 1000.00 some 11 (Table 8.5) have a grinding mill enterprise. While there may be some scope for increasing the number of mills, it is highly unlikely that the demand

TABLE 8.4 PRIMARY SOCIETY DEPOSITS WITH TDCU

Category	Amount Deposited £S	Number of Societies	Percentage
1	37 105	1	1
2	10,000 - 20,000	6	4
3	5,000 - 10,000	5	4
4	1,000 - 5,000	9	6
5	500 - 1,000	17	12
6	0 - 500	85	61
7	0	16[1]	12
TOTAL		139	100

Source: TDCU.

Note: [1] TDCU put only one society into this category. In the absence of information to the contrary it is assumed that the balance of 15 other primary societies also have no deposits.

TABLE 8.5 PRIMARY SOCIETIES HAVING A GRINDING MILL

Society	Number of mills	Deposits with TDCU £S
Afoye (Madi)	1	1034
Ako (Madi)	2	900
Arne (Madi)	1	10300
Auefuni (Madi)	1	12500
Dongolobo (Torit)	1	6040
Hillieu Mombasa (Torit)	1	36850
Hinaite (Torit)	1	15470
Kapoeta BR	1	n.a.
Katire (Torit)	1	282
Lobot Nyom (Palotaka)	1	8400
Mogali (Madi)	1	12145
Mojoro IMadi)	1	11700
Opari (Madi)	1	5400
Palotaka	1	790
Pageri (Br)	1	n.a.
TDCU Head-quarters	2	n.a.
Yei	1	10,000

Source: TDCU.

would be sufficient for each society to have one.

Although it is apparent from the deposits of societies that some have been very successful, it is the NCA Co-operative Project's current policy to rationalise and consolidate the existing societies rather than to encourage the establishment of new societies.

Several societies do not deposit all their savings with the TDCU and it is understood that at least four have opened accounts with the Unity Bank in Juba. One of the reasons for this is thought to be that it has not always proved easy for societies to obtain the speedy release of their deposits with TDCU.

A spokesman for a Madi cooperative society expressed his concern over the relationship between the TDCU and the societies. He indicated that TDCU tended to act somewhat dictatorially and had lost sight of the true role which a union should play; namely to represent and implement the interests of the societies. He mentioned that both the Madi and the Acholi societies had formed associations which meet at least twice yearly and that they were not entirely satisfied with the response of the TDCU when their points of concern were raised at the AGM of the TDCU. Specific concern was expressed over the policy of the TDCU to open branch retail shops which compete with those of local societies and over the strict pricing guidelines. Mention was also made of the fact that no dividends have yet been paid by the TDCU to the societies and that deposits with the TDCU gain no interest. Other parties expressed their criticism of the TDCU for not having adequate supplies of spares for ox-ploughs on hand.

It was appreciated, however, that without NCA's support for the TDCU and the societies, the situation would be very different. Considerable appreciation of the provision of NCA's transport facilities and the foreign exchange facility was voiced.

It was with some concern that the Consultants learned that it was unlikely that NCA could extend the use of its foreign exchange facility to TDCU much beyond the level reached in 1985. It is clear that TDCU must renew its efforts to obtain an independent foreign exchange facility from Government.

It was learned that many societies have yet to formulate and agree constitutions, although some assistance has been given by cooperative officers in this respect.

8.4 NCA COOPERATIVE PROJECT

This continues to be the main source of development funds and co-operative extension advice in the Study Area. Its objectives are now said to be the co-ordination and support of all co-operative activities in East Bank Equatoria, and consolidation of the co-operative movement.

Attempts were made to determine the actual expenditure as loans and grants but NCA wqs unable to supply the data. It would be difficult to identify the cost to date of NCA Co-operative Project's financial contribution to the co-operative movement but it is believed that a serious effort should be made to do so. Expenditure items which were said to be paid by NCA were:

Non-reimbursable	- salaries of certain TDCU staff
	- tractors, capital cost and maintenance
	- buildings, Obbo store (75%), Kapoeta and Torit stores (100%)
	- transport for TDCU staff
Reimbursable	- Fuel for tractors and mills
	- Agricultural tools and seeds for resale
	- Purchases for retail shop sale
	- Ox ploughs and mills
Hidden payments	- no interest is charged on reimbursable costs, nor is there any repayment schedule
	- many items are duty free which would not be the case if purchased directly by TDCU

It is current policy not to support the establishment of new Primary Societies except in areas where there is no existing society and where the request for a society comes from the future members themselves. In some places NCA is actively trying to reduce the number

of societies by amalgamating those already existing. An example of this is in Torit where, in 1980/81, there was a proliferation of societies because the members hoped that this would increase the food allocation (particularly quota items, such as sugar) being sold through such societies.

In 1983, 1984 and 1985, NCA selected ten, six and nine societies to receive financial assistance. The criteria for selection were:

- more than £S 500.00 deposited with TDCU
- more than 50 members
- has an active membership which regularly attends meetings and supports the societies activities
- agrees to become a permanently active if previously only seasonal
- agrees to accept supervision by NCA co-operative extension staff

A selected society is given a loan of £S 1500.00 for working capital and NCA pays the full salaries of a secretary, saleperson and a watchman for one year, and half their salaries for a second year.

NCA has assisted the Hilieu Mombasa PS with a £S 12 000.00 self-help loan to construct a store/shop, it has given similar assistance to the Ave-funi Society in Madi. Arrangements for financial assistance of this nature are made directly between NCA and the society concerned, the TDCU is not involved at any stage.

These are the only self-help loans given by NCA to primary societies.

Five coop societies have secured loans under the LIS programme.

According to TDCU's records, there are only five societies which

were not formed with the primary objective of running a retail shop, although they all had such a shop as a secondary objective. These societies were based on savings and credit, tailoring, fishing and milling. There are other societies, however, which, although they started out as retail shops, have now diversified by introducing other enterprises. For example, there are 17 or 18 societies with grinding mills (Table 8.5); there are also, according to TDCU, two societies with carpentry enterprises (Donglobo and Aku) making furniture for local schools and to meet the local demand for household furniture.

It is evident that the co-operative movement in the Study Area has not stimulated industrial development or diversified the rural economy. It has, however, become widely involved in that economy by opening retail shops and making a range of commodities and tools available to the smallholder farmer; and has purchased agricultural produce (Table 8.6).

TABLE 8.6 PURCHASES OF SORGHUM AND MAIZE BY TDCU[1]

Commodity	Unit	1982/83	1983/84	1984/85
Sorghum	90 kg sack	594	9202	1500
Maize	90 kg sack	1165	2041	6226

Source: TDCU.

Notes: [1] This does not include purchases of imported sorghum or maize.

TABLE 8.7 COOPERATIVE STAFF - 1985

	NCA Head Office	TDCU Head Office	Western Area		Central Area		Eastern Area	
			Pageri	Palotaka	Torit	Ikotos	Chukudum	Kapoeta
Coordinator	1							
Head of Extension	1							
Training Centre Staff	12							
EXTENSION STAFF								
District Cooperative Officer			1	1	1[3]	-	-	1[3]
Cooperative Field Assistant			6	2	3	1	1	1
Driver			-	1	-	-	-	-
PRIMARY COOPERATIVE SUPPORT								
Secretary/Manager			7	3	6	1	1	-
Watchmen			8	3	5	-	-	-
Salesmen			-	-	1	-	-	-
TDCU STAFF								
Secretary Manager		1[2]	-	-	-	-	-	-
Assistant Secretary Manager		1	-	-	-	-	-	-
Branch Manager		-	1[2]	1[3]	-	-	-	-
Accountant		1[2]	1	1	-	-	-	-
Cashier		1	-	-	-	-	-	-
Storekeeper		3	1	1	-	-	1	1
Sales personnel		2	2	2	-	-	-	-
Grinding mill attendant		2	2	-	-	-	-	-

TABLE 8.7 (Continued)

	NCA Head Office	TDCU Head Office	Western Area		Central Area		Eastern Area	
			Pageri	Palotaka	Torit	Ikotos	Chukudum	Kapoeta
Purchasing office		-	1	1	-	-	-	-
Watchmen		6	4	3	-	-	3	3
Porters		3	2	5	-	-	-	-
Mechanics		-	1	-	-	-	-	-
TOTAL	14	20	37	24	16	2	6	6

Source: NCA.

Notes: [1] NCA Staff paid by NCA Cooperative Project.

[2] TDCU staff paid by NCA Cooperative Project.

[3] Staff seconded from Government; basic salary paid by Government but NCA increases by about 20 per cent

CHAPTER 9

REFUGEE INTEGRATION AND DEVELOPMENT POTENTIAL

9.1 BACKGROUND

The influx of refugees into East Bank Equatoria began around 1962 with the arrival of the 'Simba refugees' from the Belgian Congo, now Zaire. When the present ruler, President Mobutu, came to power and conditions became peaceful, all but a few of the refugees returned home. Those that remained are now independant of all Government or other aid and, from an official viewpoint, are considered to be Sudanese. They are fully integrated into the local society.

In the late 1960s the flow was reversed during the civil disturbances in Southern Sudan when many people crossed the border into Uganda. The Addis Ababa Agreement of 1972 settled the then differences between the Government of Sudan in Khartoum and the people of the South and once again most of the refugees returned home over a period of time. A few, however, have remained in Uganda and established themselves within the local communities.

In 1979 and as a result of the campaign by Tanzania to overthrow President Idi Amin, refugees began to migrate into Sudan. This migration continued for five years until it ceased in 1984. The first people to migrate were Nubis, who formed the mainpool of Amin's army, but as unrest continued even after President Obote assumed authority, several other tribes began to flee to the Sudan. After the coup which overthrew the Obote regime, some of the refugees returned on their own initiative, while in February, March and April 1985, some 1030 refugees were voluntarily repatriated through Nimule and Yei in transport provided by UNHCR.

Continuing unrest in Uganda during 1985 led to the cessation of voluntary repatriation with UNHCR assistance. This will recommence when the conditions in Uganda return to normal because it is a fundamental objective of UNHCR that all refugees should return voluntarily to their native land.

9.2 THE REFUGEE SETTLEMENTS

On arrival the refugees were accommodated in a transit camp at Pageri from which they were allocated to a settlement. There are now 17 settlements established in the Madi area. (Reference Figure 9.1).

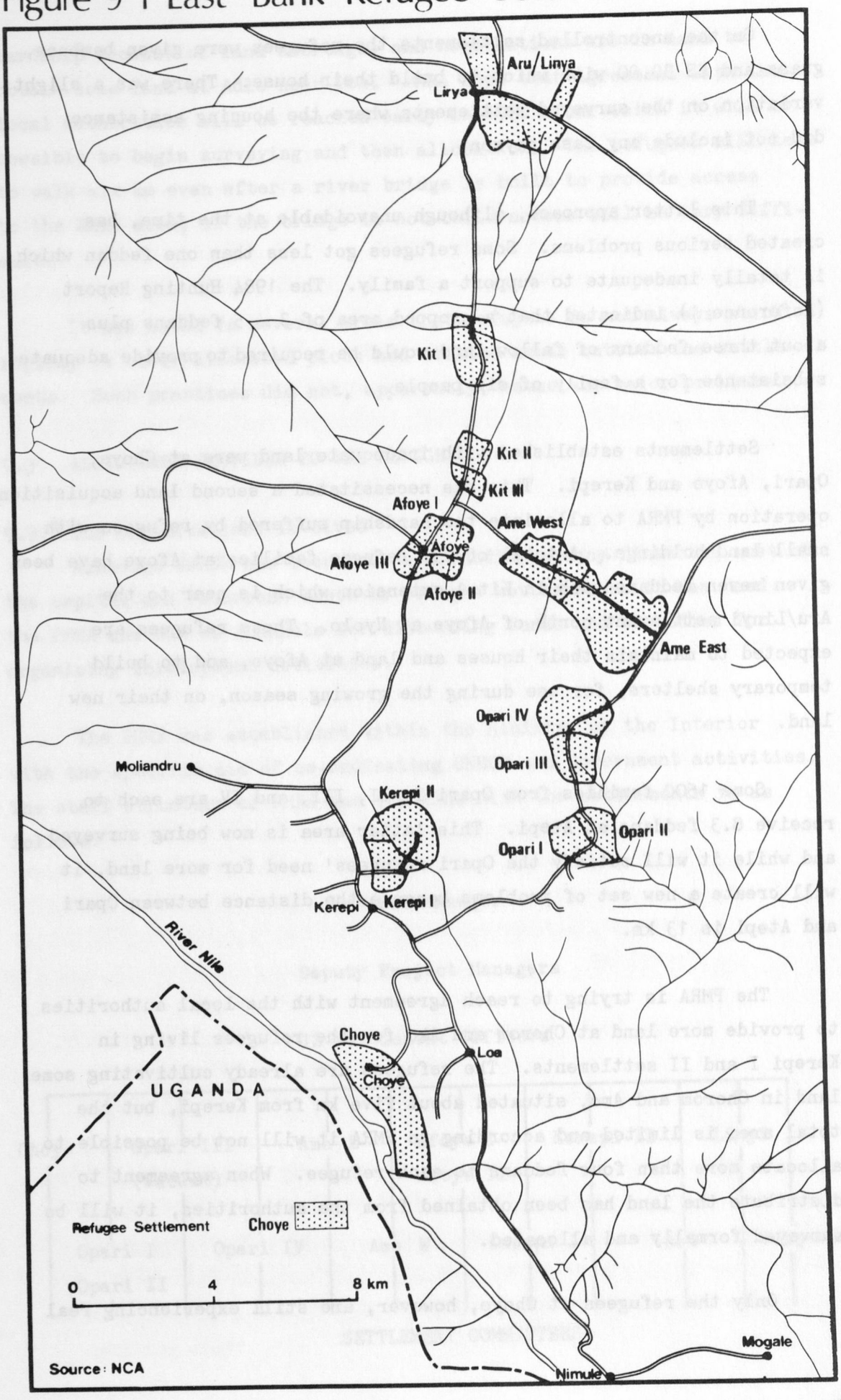
Before distributing land to the refugees it was first necessary to get the agreement of the local authorities to this change in land ownership.

In the early stages and before there was any indication of the number of people that would be involved or the period over which they would continue to arrive in Sudan, the local authorities were pleased to be able to assist their kinsmen from Uganda and readily gave their agreement to the allocation of land to the refugees. As the influx of people continued, however, it understandably became increasingly difficult for the authorities to allocate more and more land which could, at some time in the future, be required by the indigenous people of Madi. The area involved is quite extensive; with a total of around 7000 families, each having, on average, an area of five feddans per family, the total land already allocated is about 35 000 feddans. Although it appears unlikely that many more requests for land will be made, the final negotiations now taking place are considerably more protracted than in 1983 let alone 1979/80.

The arrival rate and the large number of refugees involved precluded the surveying and orderly development of most of the settlements. Only at Ame East, Ame West, Aru and Linyi was the land surveyed and each refugee given a demarcated holding of 7 to 8 feddans.

At the other settlements the land was not surveyed; the refugees were told to go into the area and select some land for themselves. This method led to some refugees getting small holding of about one feddan while others obtained up to seven or eight feddans. Likewise some people selected unsuitable land, for example where the soil was shallow, stony or infertile, which would have been excluded in any formal survey. The situation was further complicated by the presence of local Sudanese smallholder farmers who were already settled in the area.

Figure 9·1 East Bank Refugee Settlements



On the uncontrolled settlements the refugees were given bamboos, grass and £S 30.00 with which to build their house. There was a slight variation on the surveyed settlements where the housing assistance did not include any cash payment.

This latter approach, although unavoidable at the time, has created serious problems. Some refugees got less than one feddan which is totally inadequate to support a family. The 1984 Hunting Report (Reference 1) indicated that a cropped area of 3 - 5 feddans plus about three feddans of fallow land would be required to provide adequate subsistence for a family of six people.

Settlements established with inadequate land were at Choye, Opari, Afoye and Kerepi. This has necessitated a second land acquisition operation by PMRA to alleviate the hardship suffered by refugees with small land holdings. A total of 255 refugee families at Afoye have been given seven feddans each in Kit 1 extension which is near to the Aru/Linyi settlement north of Afoye at Nyolo. These refugees are expected to maintain their houses and land at Afoye, and to build temporary shelters, for use during the growing season, on their new land.

Some 1500 families from Opari I, II, III, and IV are each to receive 8.3 feddans at Atepi. This latter area is now being surveyed and while it will satisfy the Opari refugees' need for more land, it will create a new set of problems because the distance between Opari and Atepi is 13 km.

The PMRA is trying to reach agreement with the local authorities to provide more land at Chorom and Ako for the refugees living in Kerepi I and II settlements. The refugees are already cultivating some land in Chorom and Amo, situated about five km from Kerepi, but the total area is limited and according to PMRA it will not be possible to allocate more than four feddans to each refugee. When agreement to distribute the land has been obtained from the authorities, it will be surveyed formally and allocated.

Only the refugees at Choye, however, are still experiencing real

hardship because of land shortage, and negotiations are in hand to obtain some land at Adle near Loa. PMRA hope that agreement with the local authorities will be reached early in 1986 after which it will be possible to begin surveying and then allocation. The refugees will have to walk six km even after a river bridge is built to provide access to the Adle area; if the bridge is not build access will be very difficult.

It was noted in several areas that refugees do not always stick rigidly to their allocated plots and utilise areas outside the settlements. Such practices did not, apparently, cause any major problems.

9.3 ASSISTANCE PROVIDED TO THE REFUGEES

9.3.1 The Organisations Involved

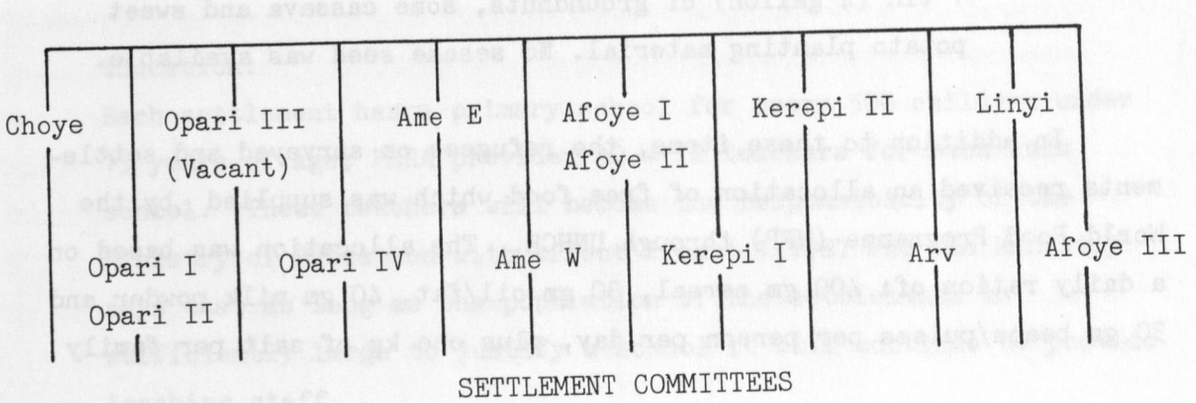
Although UNHCR has been the main funding agency financing must of the capital and recurrent costs of refugee settlements, it has used the PMRA and NCA as channels for disbursing funds and as bodies for organising development activities.

The PMRA was established within the Ministry of the Interior with the specific aim of co-ordinating UNHCR and Government activities. The staff structure of PMRA and its link with the settlements is as follows:

Project Manager

Deputy Project Managers

12 Settlement Officers



SETTLEMENT COMMITTEES

The PMRA is responsible for the distribution of free food and other similar items (which are detailed in Section 9.3.2), providing teachers and medical staff. Where possible teaching and health staff are drawn from suitably qualified refugees.

Each settlement has a committee consisting of an elected chairman and block leaders (usually six to twelve). These committees were formed to introduce an element of Local Government by the refugees themselves. They assist the PMRA with the distribution of food and free items; they are expected to settle minor disputes; and, from January 1986, they will be responsible for approving the credit worthiness of refugees seeking credit under LIS or similar schemes.

NCA involvement is based on the Arapi Rural Development Centre but funding agreements are between NCA Hilieu and UNHCR and the funds are disbursed through the Hilieu office.

9.3.2 The Services Offered

On arrival at the settlement the refugees were given:

- hand tools: one hoe and one panga per adult, one axe per family
- household equipment: one blanket, cup, plate and bowl per person, one bucket, basin and two soufrieres per family
- clothing: this was provided from 1979 to 1982 but not thereafter
- seeds: 10 kg Serena sorghum, 5 kg of cowpea and finger millet, 1 tin (4 gallon) of groundnuts, some cassava and sweet potato planting material. No sesame seed was available.

In addition to these items, the refugees on surveyed and settlements received an allocation of free food which was supplied by the World Food Programme (WFP) through UNHCR. The allocation was based on a daily ration of: 400 gm cereal, 30 gm oil/fat, 40 gm milk powder and 30 gm beans/pulses per person per day, plus one kg of salt per family

per month. UNHCR adopted a flexible approach to food distribution so that in the first year the ration would be reduced during and immediately after the harvest period when food becomes available from the agricultural activities. In the second year the cereal ration was reduced to 200 g per person per day with the other items remaining unchanged, but once again there were some reductions for all items during and after harvest. It was assumed that a family reached self-sufficiency in year three and no food allocations were made except in cases of extreme and unavoidable hardship.

On those settlements which were not surveyed and demarcated, some of the refugees were not self-sufficient in food after two years. In such cases, food was provided for a longer period, for example at Choye distribution continued for 3.5 years.

At the time of writing this report only Ame East and West, Aru and Linyi are receiving a free food allocation. This is scheduled to stop in January, 1986.

The fact that a settlement is not receiving a food allocation does not necessarily mean that the refugees have sufficient to eat. The PMRA management says that farmers at Choye, and to a lesser extent at Kerepi I and II, are still not self-sufficient in food crops. It is believed that they rely on assistance from friends and relatives while trying to produce as much as possible from several scattered small plots of land. As a general rule, however, most of the refugees appear to be obtaining sufficient food and to have a living standard similar to the local Sudanese.

UNHCR through PMRA and NCA provides a range of services:

Education:
Each settlement has a primary school for every 500 children under 15 years of age; PMRA provides 10 - 12 teachers for each such school. These teachers will become the responsibility of the Ministry of Education with effect from 1.1.1987 and the Ministry says that as long as the population of the settlements is sufficiently large to justify a school it will continue to provide teaching staff.

There are six intermediate schools (Opari, Ame, Afoye, Kit (2) and Kerepi), but only one secondary school at Loa. There is a Rural Technical School at Afoye.

All the schools draw pupils from both the local Sudanese population as well as the refugees. The teaching staff is drawn mainly from qualified refugees but it has been Government policy that the Headmaster and Deputy Headmaster are Sudanese to ensure that the subjects being taught are in agreement with current Ministry of Education programmes. It is now possible, however, for refugees to be appointed to these two senior positions after attending an orientation course run by NCA.

Health:
At Opari there is a health centre run by a Senior Medical Assistant assisted by a Medical Assistant and some 25 nurses. Most of the staff are refugees. Each settlement has a primary health unit run by refugees who have been given some simple medical training.

Staff in the health centres are paid by PMRA with UNHCR funds; likewise drugs are provided by the NCA Health Project using UNHCR finance. The Government is scheduled to take over responsibility of the health services on the settlements in 1987.

Water:
NCA has completed, or almost completed, a widespread drilling programme followed by the installation of India mk II pumps where the aquifer characteristics were suitable. NCA still provides the spare parts but repair and maintenance is now the responsibility of the local authority under guidance from PMRA. Regrettably this approach is not working well and NCA/PMRA are investigating alternative methods of pump repair and maintenance.

Agriculture:
For all intents and purposes, NCA provide the only extension service in the refugee settlements. The salary costs are met by UNHCR but the back-up services of agricultural research and draft-animal training are all provided as part of the NCA agricultural

project. NCA agricultural involvement with the refugees is centred on the Rural Development Centre at Arapi.

Co-operatives:

The NCA Co-operative Project provides an extension service to advise on and assist with the establishment and development of primary societies. Seven societies have been established on the settlement with the primary objectives of first, providing a retail shop for trading in essential commodities and agricultural items such as tools and seeds, and second to purchase any surplus agricultural production. As there were no shops in the areas where the settlements were established, the co-operative development has been an important component of NCA's work on the settlements.

Engineering:

UNHCR has channelled substantial funding through NCA's Engineering Project. They have been used for the construction of buildings (schools, health care units, staff houses) and for access and internal road construction and maintenance.

General:

The estimated cost of establishing refugees (excluding food rations) is around US$ 320 per capitum. On this assumption approximately US$ 13 million has been spent in the Madi area since 1979.

9.4 POPULATION

There is confusion regarding the number of refugees currently resident in the Study Area. When the Consultants undertook their 1983 Study (Reference 1) it was said that there were some 80 000 refugees living in the Madi area. It is recognised now that this was a substantial overestimation and that the current population is considerably less but the actual figure depends on which census data are used. PMRA undertook a census in October 1984 and calculated a total population of 53 526, a much higher figure than the 32 628 calculated from the NCA census in August/September 1984. The breakdown of these two estimates by settlement is given in Table 9.1.

TABLE 9.1 REFUGEE POPULATION DATA

Settlement	Choye		Opari I		Opari II		Opari III		Opari IV		Opari	Total	Arne East	
Established	1979		1979		1980		1981		1982				1983	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Age group <15	1 040	48	520	47	758	46	1 279	49	2 031	49	4 588	48	1 751	52
15 - 44	833	39	463	42	697	42	1 095	42	1 722	42	3 977	42	1 430	42
45 - 60	211	10	81	7	124	8	174	6	266	7	645	7	175	5
>60	75	3	40	4	71	4	70	3	101	2	282	3	37	1
Total	**2 159**		**1 104**		**1 650**		**2 618**		**4 120**		**9,492**		**3 393**	
Number of families	446		226		323		545[1]		849		(1798)[2]		695	
People/family	4.8		4.9		5.1		4.8		4.9		5.3		4.9	
Total male[4]	**1 072**	**50**	**554**	**50**	**837**	**51**	**1 314**	**50**	**1 997**	**48**	**4 702**	**50**	**1 733**	**51**
Total female[4]	**1 087**	**50**	**550**	**50**	**813**	**49**	**1 304**	**50**	**2 123**	**52**	**4 790**	**50**	**1 660**	**49**
PMRA census total	**4 060**	**188**	**3 499**	**317**	**4 577**	**277**	**3 276**	**125**	**3 761**	**91**	**15 113**	**159**	**4 661**	**137**

Settlement	Arne West		Arne	Total	Kerepi I		Kerepi II		Kerepi Total		Arne		Linyi		Anutinyi Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Established	1983				1979		1982				1983		1983			
Age Group <15	1 492	59	3 243	55	507	53	1 111	51	1618	52	1 276	53	738	49	2 014	51
15 - 44	907	35	2 337	39	334	35	921	42	1 255	40	1 017	42	703	47	1 720	44
45 - 60	126	5	301	5	72	8	122	6	194	6	111	4	28	2	139	4
>60	16	1	53	1	37	4	20	1	57	2	17	1	22	2	39	1
Total	**2 541**		**5 934**		**950**		**2 174**		**3 124**		**2 421**		**1 491**		**3 912**	
Number of families	442		1 137		(-)[3]		(-)[3]		674[3]		583		340		923	
People/family	5.7		5.2		-		-		4.6		4.2		4.4		4.2	
Total male[4]	**1 255**	**49**	**2 988**	**50**	**418**	**44**	**1 278**	**59**	**1 696**	**54**	**1 271**	**52**	**760**	**51**	**2 031**	**52**
Total female[4]	**1 286**	**51**	**2 946**	**50**	**532**	**56**	**896**	**41**	**1 428**	**46**	**1 150**	**48**	**731**	**49**	**1 881**	**48**
PMRA census total	**4 488**	**177**	**9 149**	**154**	**1 649**	**174**	**2 574**	**118**	**4 223**	**135**	**3 885**	**160**	**2 085**	**140**	**5 970**	**153**

Settlement	Afoye I		Afoye II		Afoye III		Afoye Total		Kit I		Kit II		Kit III	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Established	1981		1982		1982				1979		1980		1981	
Age group <15	995	54	372	51	775	50	2 142	52	456	49	381	50	1 067	49
15 - 44	711	35	308	42	650	42	1 669	40	327	35	285	37	917	42
44 - 60	99	8	47	6	87	6	233	6	79	9	60	8	145	6
>60	36	4	5	1	35	2	76	2	62	7	43	5	65	3
Total	**1 841**		**732**		**1 547**		**4 120**		**924**		**769**		**2 194**	
Number of families	418		154		349		921		160		160		450	
People per family	4.4		4.8		4.4		4.5		5.8		4.8		4.9	
Total male[4]	**901**	**49**	**369[5]**	**50**	**741**	**48**	**2 011[6]**	**49**	**438**	**47**	**399**	**52**	**1 099**	**50**
Total female[4]	**940**	**51**	**363[5]**	**50**	**806**	**52**	**2 109[6]**	**51**	**486**	**53**	**370**	**48**	**1 095**	
PMRA census figure[7]	2 726[8]	148	1 240	169	1 569	101	5 535	134	2 246	243	2 550	332	4 680	213

Settlement	Kit	Total	Grand Total	
	No	%	No	5
Established				
Age group <15	1 904	49	16 549	51
15-44	1 529	39	13 320	41
45-60	284	7	2 007	6
>60	170	5	752	2
Total	**3 887**		**32 628**	
Number of families	770		6 814[2]	
People per family	5.0		4 8	
Total male [4]	**1 936**	**50**	**16 436[6]**	**50**
Total female[4]	**1 951**	**50**	**16 192[6]**	**50**
PMRA census figure	9 476	244	53 526	164

Source: NCA and PMRA

Notes:

1 *No data available from NCA because record book was in the field; figure derived from average family size on remaining 16 settlements.*

2 *Totals include derived figures for Opari I.*

3 *NCA records include no individual data for Kerepi I and Kerepi II settlements.*

4 *Where total population differs from figures in NCA records which include some summation errors, the numbers of male and females have been adjusted proportionately.*

5 *The NCA figures for males and females in Afoye II include a typing error (390 + 382 = 732). As the total is correct, the figures included in the Table were the averages derived from the remaining 16 settlements.*

6 *Totals include derived figures for Afoye II.*

7 *The percentage figure shown for PMRA census data is the percentage increase over the NCA total population figure.*

8 *PMRA data includes 255 Afoye settlers who are cultivating in Kit I extension; for the purposes of this Table it was assumed that they all come from Afoye I.*

It is not possible to say with certainty which figure is correct. PMRA and some settlement Chairmen insist that the PMRA data is correct whereas most other organisations believe that the NCA census was undertaken on a more systematic and scientific basis and that the results are more accurate. The UNHCR office in Juba believes that the number of refugees is likely to be between 30 000 and 40 000.

For the purposes of this report it is assumed that the proportions of different age-groups are as given in Table 9.1. There is a preponderance of young people as would be expected in a refugee situation where the older people would not be prepared or able to trek to the Sudan. This low population of people aged 45 years and over is also reflected in the average family size which is 4.8 persons in a range of 4.2 to 5.7 persons per family.

A small family size has two important effects - it reduces the total food requirement and therefore the area that has to be cultivated, however, it also means that there is likely to be less family labour to cultivate the subsistence crops.

The majority of the refugees, said to be between 60 and 90 per cent, belong to the Madi people in Uganda so have the same language and social customs as the local Sudanese. The other main ethnic groupings found among the refugees are: Acholi, Alur, Lugwara, Aringa and Nubi. The Madi, Acholi and most of the Alur and Lugwara are reported to be Christians whilst a large number of Aringa and all the Nubi are said to be Muslims.

An interesting aspect of the NCA census was the section requesting information on skills. Details of the skills which exist among the refugees and the number of persons trained in each skill are given in Table 9.2. This table also gives information on the number of people practicing their skill; it is currently running at about 134, or more than 60 per cent, most of whom are working in the Madi area.

Of those not practicing their skills there are less than ten whose skill is of such a nature as to be unsuitable for the Madi area.

TABLE 9.2 SKILLS RECORDED DURING NCA REFUGEE CENSUS

Skill Group	Skill	Number	Current Situation
Television & Radio	Radio technician	2	Not working
	Telephone operator	1	Not working
	TV technician	1	Not working
	Radio operator	1	Working for NCA
Health	Clinical writer	1	Working at Opari Health Centre
	Laboratory assistant	1	Not working
	Nurse	2	Working at Opari clinic and primary health unit
	Health inspector	1	Working in primary health unit
	Medical assistant	2	Working at Opari and primary health unit
	Nursery assistant	1	Working at primary health unit
Artisanal	Tailor	22	Most working as tailors in settlements (12:10)[1]
	Carpenter	19	About half working in settlements (9:10)
	Welder	1	Not working
	Mason	9	Working for NCA Building Section
	Electrician	1	Working for NCA, Hilieu
	Plumber	1	Working for NCA
	Painter	1	Working for NCA
	Cook	1	Not working
	Cobbler	1	Not working
Mechanical	Driver	34	Some working for NCA, PMRA (15:19)
	Machine operator	1	Not working
	Mechanic	17	Eight working for NCA, PMRA etc.
Education	Teacher	47	All working in Primary, Intermediate & Technical Schools
Administration	Book-keeper	2	Not working
	Storekeeper	4	Two working
	Accountant	4	Two working
	Copy typist	3	One working for NCA
	Secretary	1	Working for NCA
	Clerks	3	Not working
	Fuel clerk	1	Not working
	Administration	2	Not working
	Clerical officer	1	Not working
Religious	Catechist	1	Working in settlement church
	Pastor	1	Working in settlement church
	Church lay teacher	1	Working in settlement church
Natural Resources	Veterinary scout	1	Self employed on veterinary work in settlements
	Field assistants (Agri.)	7	Working for NCA
	Agricultural officer	1	Working for NCA
	Forestry officer	1	Working for NCA

TABLE 9.2 continued

Skill Group	Skill	Number	Current Situation
Community Development	Community Development assistant	2	Working for Sudan Council of Churches
	Home economist	1	Working for NCA
Mining	Miner	1	Not working
Ferries	Ferry operator	1	Not working
Aviation	Pilot	2	One paid by Sudan Airways but not started work yet
Cooperatives	Cooperative officer	1	Not working
	Total	210	

Source: *NCA*

Note: [1] *Ratio of working:not working*

It should be noted that there is no record of anybody having entrepreneurial, transporting, shopkeeping or trading skills; this may be because such skills are more usually acquired through experience than formal training. There are certainly many refugees with these skills, and to this extent, the survey is rather misleading. To find only 210 skilled people out of a total adult population of 16,000 (1.3 per cent) would indicate a very poorly developed society; the evidence is that this is not the case.

The first refugees to arrive (1979/80) were Nubis; this was the main ethnic grouping from which President Idi Amin had recruited his army. As the security situation worsened the Nubis were followed by people from other tribes.

The Nubi people, who originated in the Sudan, were encouraged to go to East Africa to join the armed forces by the then British Colonial Administration. As they have no homeland in Uganda and no particular affinity with agriculture, many of them have become traders and shop-keepers rather than farmers. This is very evident in the small refugee settlement near Torit which is mainly populated by Nubis and in which many of the people are now involved in petty trading. Most of the other refugees belonged to indigenous Ugandan tribes and came from the West Nile Region where the main cash crops are cotton and flue-cured tobacco, and the food crops are maize, cassava and sorghum. Being used to similar crops and agricultural enterprises, the majority of the refugees have had no problems in establishing themselves as smallholder farmers and achieving a similar standard of competence to the local Sudanese.

9.5 THE IMPACT ON DEVELOPMENT

Any area which receives an influx of refugees is often regarded as a focus from which development will ensue because of the introduction of a range of new skills and trades. Likewise it is often assumed that because the refugees were prepared to move from their homeland, they possess more initiative and a greater willingness to participate in change than those who stayed behind. There is, however, little evidence on the refugee settlements in Madi that these will become centres of industrial or economic development themselves or that they will stimulate such development among the local population.

Most of the settlements have a practicing carpenter and tailor who is well able to cater for the needs of the settlement; these skills are in surplus (Table 9.2) as 50 per cent of tailors and carpenters are not using the skills in which they have been trained. Likewise half the refugees having artisanal or mechanical skills are not employed; NCA, PMRA, UNHCR and like organisations should be aware of this reservoir of unutilised expertise which exists in the settlements. It is important, however, that the organisations are also aware of the vacuum that could develop if and when the refugees return to Uganda. In this respect the facilities being developed at Afoye Technical Training School should help to assure that there will always be a supply of Sudanese nationals who are trained in the basic skills which may otherwise become scarce when the Uganda refugees eventually return home.

9.6 POTENTIAL FOR INTEGRATION AND FURTHER DEVELOPMENT

9.6.1 The People

As most of the refugees belong to the Madi tribe with the same language and culture as the Sudanese Madi, there is no major constraint, other than the availability of land, that should adversely affect their integration into Sudanese Society. Indeed integration has effectively taken place already, not only for the Ugandan Madi but also for refugees belonging to other tribes.

Even though no important points of difference are expected to develop between the Sudanese nationals and the refugees, the Consultants firmly believe that most of the refugees will return to Uganda once the conditions in the country have returned to normal. This is precisely what happened with the refugees from Sudan who migrated to Uganda in the 1960s. It is customary in many traditional societies for the members to want to reside in the area where their ancestors are buried; interviews conducted with refugees and Sudanese suggest that most of the Uganda refugees would like to return home.

Another consultant working for UNDP/UNHCR suggested that 50 per cent of the refugees would return to Uganda within ten years, if the political situation improves there. It was also pointed out that the most likely people to move would be the progressive and active members

of society, particularly young and middle-aged men. A UNHCR representative also stated that he believed most people would wish to return; he mentioned that it would be important to have an orderly return. In this way abandoned holdings would be handed over to refugees or local people in a controlled manner. People were already making such arrangements.

Some refugees expressed their determination not to drift back spontaneously but to repatriate officially. Whilst the Consultants can understand the advantage of such a policy, it did appear that some of the refugees were learning how to extract the last grain of benefit out of the system.

It is recommended that any long term development planning for the Madi area should not be based on the assumption that 30 000 - 40 000 refugees will be permanently resident there.

9.6.2 The Land

As mentioned above, land is the only issue which has given rise to some degree of 'non-acceptance' of refugees. This has manifested itself in the increasingly protracted negotiations with local authorities over the availability of agricultural land for distribution to the refugees. While the PMRA expects that this reluctance by the authorities to provide more land will change and that the land will become available in 1986, it accepts that any further demands for land would be met with increasing reluctance.

From the national resource viewpoint, Madi is one of the more favoured parts of East Bank Equatoria having reasonable rainfall (c 1150 mm/year) and some fairly fertile soils, but even so it cannot be regarded as a Garden of Eden. Crop rotations and fallowing are necessary because of the impracticality of importing fertilisers and agro-chemicals, except for high value crops such as flue-cured tobaccco; this means that although the fallow land is an integral part of the agricultural cycle, there will continue to be large areas of unproductive land in the foreseeable future.

During the distribution of land to refugees it was decided that

the maximum area per family should be 7 - 8 feddans though in many cases the refugees got less than this amount. A holding size of 7 - 8 feddans was recommended by Thiadens (Reference 25), as necessary to provide a family of size with its subsistence requirements, Hunting agreed with this figure but showed that with improved husbandry techniques a farm of this size, located on good land, could produce a little surplus for sale.

Even assuming that all the refugees get seven feddans, that it is all good, fertile and usable land, and that they remain in the Madi area for several years, it is unlikely there would be any large scale surplus of agricultural products. The current family make up and size will change and while this will mean more labour available from within the family, it will also mean an increasing family food requirement. The better farmers will produce some surplus for sale; it is also possible that new techniques, new varieties and the impact of the agricultural extension service will lead to increased productivity and a saleable surplus. It is believed, however, that the unlikelihood of freely available agro-chemicals will continue to be a severe constraint on production levels, will continue to necessitate a crop rotation including several years fallow and will preclude any large scale production or surplus agricultural products from the refugee settlements.

When one considers the existing and likely future situation of the refugees - namely - many of them have less than seven feddans or have a fragmented holding, the farms are situated on all soil types including those of low fertility, and finally, that most of the refugees hope they will be able to return to their native land; it would be foolhardy to assume that they will be an important source of agricultural surpluses.

If in the short to medium term future the political position becomes more stable the Consultants can envisage a situation where the more restless refugees return to Uganda whilst the remainder merge into the Sudanese community. An essential element of this process would be that the refugees should be allowed to expand their agricultural holdings beyond the subsistence level.

9.6.3 Non-Agricultural Development

Information on skills and trades possessed by the refugees and on those currently practicing their skills are given in Table 9.2. Several skills and trades are now being practised; blacksmiths and tailors have established themselves while skills such as nursing, teaching or agriculture are being used to improve the conditions and standards prevailing in the settlements. There has not been, however, any development of new skills or trades outside those one would normally expect to find in a society based on subsistence agriculture. Furthermore, it should be remembered that most of the Sudanese population in the area have also been refugees within the recent past, subjected to the same influences, have received the same education and have worked in the same environment as the present refugees. Although the Sudanese population has been somewhat deprived of good education facilities since they returned to Sudan, the period has not been too long and the position has been better in Madi than in many other locations in the South. Furthermore, conditions have been improving very rapidly for all the Madi inhabitants during the past few years as the UNHCR and NCA have been assisting the area. This is benefitting both Sudanese and refugees alike; in Table 2.9 it can be seen that children in Madi have by far the highest school attendance in the Study Area (37 per cent).

CHAPTER 10

APPRAISAL AND RECOMMENDATIONS

10.1 INTRODUCTION

This chapter attempts to draw together the more important points raised in previous chapters, provide additional comment where appropriate, and make recommendations where improvements could be made and where NCA could play a role.

In making these recommendations the Consultants draw attention, once again, to the very undeveloped nature of the economy, which is heavily dependent on subsistence agriculture and virtually devoid of a manufacturing sector. The service sector is dominated by a reasonably active but very small retailing sub-sector. Government employs a substantial number of people to provide education, health and other basic services; they are generally rather ineffective and NCA assists in strengthening them.

The major bottlenecks to development are seen as the following, with those where NCA can do little to help being listed first:-

- the security situation
- the lack of support from Central and Regional Government, and the absence of guidelines or plans from these bodies,
- the unfavourable agricultural conditions in the east
- the location of the Study Area in relation to seaports, supply centres and markets
- the increasing hostility between some individual ethnic groups within the Study Area
- the lack of trust and mutual assistance between local businessmen and the low levels of integrity of employed staff
- the undeveloped nature of adjacent areas and of Juba, providing few market opportunities or services
- the remoteness of Khartoum, where so many decisions affecting the economy of the South are made
- the bad condition of the main roads, whose responsibility for maintenance lies with Government
- the remittance of profits made in the area by non-southerners away from the South

- the closing of the Nile for commercial transport
- the shortage of foreign exchange
- the virtual absence of postal, telephone and banking facilities
- the absence of outside investors
- official and unofficial bureaucracy and harrassment.

Of those where NCA could assist the following are considered to be of importance:-

- the very low levels of education, training and literacy
- the high cost and shortage of transport
- the underdeveloped business skills of southern businessmen and cooperative staff
- the under-exploitation of agricultural potential in the west
- the resistance to development of people in the centre and east of the Study Area
- the problems of obtaining raw materials, fuel, vehicles, spares, etc.
- the shortage of credit facilities
- the weakness of the Area and Rural Councils
- the shortage of power supplies
- the low standards of health care
- the decline of the cotton industry.

There are a number of encouraging signs which indicate that there is a chance that conditions can improve. These include the following:-

- NCA's contribution to increasing agricultural production and generating surplus food in certain areas
- NCA's contribution to the success of the cooperative movement
- the increasing importance and confidence of southerners entering retail and other businesses
- NCA's role in constructing feeder roads and water points
- NCA's involvement in the introduction of ox-powered ploughing and transport
- the establishment of UTTP
- the continued activity of the Imatong Mountains Forestry Development Company

- the success the Catholic Church is having with its introduction of pre-primary and other schools and with its grass-root development approach.

10.2 THE PRIMARY SECTOR

10.2.1 Smallholder agriculture

Although this is generally an unsophisticated and undeveloped sector, with most of the farmers living at subsistence level, it is the basis of survival for the most of the inhabitants and the source from which virtually all potential local development capital will be generated. This is of particular relevance where it is unlikely that any significant amounts of outside investment will be forthcoming.

It is already receiving substantial assistance from NCA and the Consultants support fully all efforts made in this direction. Improved yields, expanded cropped areas and better marketing facilities have all resulted from NCA's involvement. Care must be taken to ensure that there are worthwhile markets for the surplus production in the future; the decline in interest and recent fall in production of coffee is viewed with concern, as is the stagnant growth in tobacco sales. Where food production is adequate to meet home requirements and effective demand in nearby deficit areas, greater attention should be paid to other cash crops, particularly those with export potential. Cotton is recommended as a serious candidate for further consideration in the Madi area.

NCA is encouraged to contact the Haggar Group of Companies to explore the possibilities of farmers obtaining credit to establish coffee farms in suitable locations in the Acholi area.

On the question of finding suitable areas, NCA are still without any comprehensive information on present land use or land capability. Some surveys have been carried out on land use in the refugee settlements in Madi. The information was not available during the Study Period, but would anyway have been of limited value in terms of future planning. Demand for land in the Madi and Acholi areas is increasing; such demands should be encouraged and it is important that the optimum areas are selected, if farmers are to maximise their production. In the central area it is believed that many farmers are continuing to cultivate traditional areas which are not always the most suited to agriculture, but which are favoured on the grounds of security or proximity to

the population centres. People in this area tend to stick rigidly to their traditional villages and do not move homes in search of parcels of better land. If, however, extensive areas of better lands were identified it might be possible to encourage people to settle as a group.

10.2.2 Large-scale agricultural production

The few organisations involved, including the UTTP, have been mentioned. It does not seem to be appropriate for NCA to be involved in this sector directly, although there might be a case for indirect interest. Commercial enterprise might wish to make use of NCA's agricultural research findings and facilities; this should be encouraged. There was also the suggestion by the 'Acholi Community' to establish, possibly with outside assistance, a commercial agricultural unit to generate funds for the rural council. Whilst the Consultants' first reaction is to disapprove of such a proposal, it is appreciated that the question of rural council funds is a major issue and that there are few enterprises which can help in this respect. It is with reservation that the Consultants suggest that NCA consider further the 'Acholi Community's' proposal.

10.2.3 Livestock and livestock products

There is little evidence to suggest that there is much hope of generating, in the near future, much income from the vast herds of cattle which roam the east and central plains and forests within the Study Area. Government already assists to some considerable extent in the preparation of hides and the Consultants recommend that NCA support fully, and possibly extend, the service. Hides are virtually the only exportable commodity produced in Equatoria and, as such, deserve priority attention.

Poultry are generally poorly developed, having been given somewhat spasmodic attention in the past; in several instances past attempts have been very successful. Further NCA involvement in the distribution of improved cockerels and, possibly, the promotion of small-scale intensive poultry meat and egg production units is recommended.

NCA should consider the possibilities of promoting the establishment of a tannery, and should liaise with the Multipurpose Centre in Kapoeta. It is anticipated that small-scale rural tanneries would be the most appropriate,

based on a vegetable (rather than mineral or chrome) tanning process. This process is more suited to handling small numbers of low quality and defective hides. At a later stage it would be possible to introduce a larger tannery where the low quality leather could be retanned and finished.

The process involves many distinct stages which have evolved over the years, and divides naturally into three groups:

(a) hides storage; soaking; liming and fleshing; deliming; bating; and pickling to prepare the skins for tanning;

(b) tanning; the vital stage that converts the hide into leather; and

(c) draining; setting; splitting; shaving; retanning, dyeing; fat liquoring; draining and setting; conditioning and staking; drying and flattening; buffing; padding and drying; spraying and drying; platting; which impart characteristics of colour, suppleness, surface smoothness and finish to the leather.

The basic process (a and b) is simple, but success requires considerable knowledge, skill and experience. There are no short cuts or compromises to obtaining a tanned hide. This skill is best demonstrated and it is recommended that NCA/SP send a suitable candidate to another rural tannery to gain the necessary skills, or to a course for rural tanners such as that held at the Rural Industries Innovation Centre in Botswana.

As a longer-term project, once the rural tanners have been established, a centralised tannery to complete the stages in the third group (mentioned above) should be established. However, a detailed study by experienced tannery experts should be conducted to assess the technical and economic viability of such a scheme in the Study Area, as the ultimate choice depends on a complex set of factors outside the field of knowledge of the Consultants.

Taking the rural tannery concept further, it is relatively easy and cheap to establish them, as the equipment can easily be made by the tanner, carpenters and/or blacksmiths. This includes wooden or clay vessels for the soaking, liming and deliming processes; simple knives for the dehairing and defleshing processes; and a simple beam structure on which to hang and work the hides.

Slaked lime is available from Kapoeta, as well as other limestone deposits

from which lime can be extracted. Vegetable tanning materials are already well known by village people - trees containing tannin-bearing barks, pods, leaves and twigs are all presently used and should be evaluated further for the different hides.

Vegetable tannins are far less toxic than the more commonly used chemical tannins in developed countries. Therefore, treatment of the effluent is not too much of a problem. This can be achieved in three ways:

(a) direct flooding of land into alternate square beds, the water evaporating or seeping away,

(b) ridge land and plant in ridges, flood between the ridges for irrigation (this provides a fertiliser),

(c) in sandy soil, construct subterrain drains for the effluent to drain away.

A 50 kg batch of hides would require 1,350 litres of water for processing.

10.2.4 Draft power

The introduction of ox-drawn ploughs and carts, and the training of the oxen and drivers, has been a major success. The natural progression whereby farmers recognise the need for ox-drawn weeders has already started. It is encouraging, in a perverse way, to hear farmers complaining about the lack of plough spares. The Consultants were relieved to hear that plans were in hand to tighten up administrative aspects and to prepare registers of the animals trained and the equipment delivered. It was noted that an attempt at cooperative ownership of draft oxen and ploughs had, somewhat predictably, met with limited success. It was an indication of the progressive nature of the cooperative society involved that this failure had been recognised quickly and new procedures were being implemented for the forthcoming season.

The plan to decentralise ox-cart manufacture to the RDCs was applauded as a first step towards the possible privatisation of their construction. The request by Arapi RDC for weeders to be supplied by TDCU during 1986 is an important development and moves should be made to investigate the possibility of local manufacture. The advent of the ox-power programme, particularly in the Madi and Acholi areas, has generated a completely new demand for blacksmithing services. NCA should be fully involved here; it is somewhat strange that in these more progressive western areas blacksmiths tend to be rather few. The beneficial effect which the introduction of ox-carts is

having on reducing the number of hours and the effort expended by women when collecting firewood, water and agricultural produce is a welcome development. To ensure that these gains are not cancelled by increasing demands on women's time for weeding the larger cropped areas, the promotion of weeders, which are normally operated by men, is an important issue.

Whilst there is no doubt that the introduction of ox-power has been beneficial, there is very little hard evidence to prove it. NCA are urged to make a thorough study of the experience gained, to ensure that the programme continues apace. Of particular importance are the experiences in the central and eastern areas, where the impact has been far less marked and where many people live under the threat of serious famine caused by drought.

10.2.5 Forestry

Whilst most of the larger-scale forestry activity is in Government hands and, in the case of the Imatongs, is being exploited in an efficient and rational manner, there is a place for NCA involvement at the small-scale farm level. Fortunately, this programme has been well cared for, and an excellent start has been made. The demand for fuel and construction timber is growing rapidly and the landscape bears the evidence of this. The Consultants fully endorse NCA's efforts and suggest that the programme is expanded. Liaison between NCA and NTC is particularly urgent, as it appears that tobacco farmers are not taking very seriously the need to be self-reliant in fuel wood.

Mention was made of the possibility for private investors to establish teak plantations in some of the many appropriate locations in the Study Area. Given the time period involved and the risks of fire and unlawful extraction, the Consultants believe there would be few individuals willing to make the necessary investment. Large-scale plantations employing permanent staff might be more feasible, but such developments are normally funded by Governments rather than by individuals.

10.2.6 Fisheries

The relative unimportance of this sector and the limited development potential, except in the Nile, are noted. Some developments are being sponsored by Government. Later, if the development of fish ponds, for example, proves to be successful in the Yei area, there might be a place for NCA participation.

There is also the possibility of assisting with net manufacture. Net making by hand is a laborious task and very time-consuming. Realising this, the Intermediate Technology Development Group have commissioned a design of a small net-making machine which has recently won a Design Council award in the United Kingdom. The unit costs around £400 sterling and has a production rate of 120 knots per minute (3 rows of 40 knots). The unit has yet to be field tested, but NCA could be a useful test collaborator with ITDG to evaluate the machine's potential in the Southern Sudan.

10.2.7 Mineral extraction

(a) Lime production

NCA is well aware of the sources of lime at Kapoeta and the possibilities of developing another deposit near Hilieu. Although this latter deposit is now known to be of high magnesium content, there is still a possibility it could be of some use. The following description of lime processing provides some guidance on the technical aspects involved, and indicates that NCA should not abandon altogether the proposal to look into the exploitation of the Hilieu deposit.

The most common use of lime in developing countries is for building, either as a mortar (sometimes used with hair for binding), as a plaster or in building blocks. Lime is also used to stabilise soil in the preparation of road foundations or in compressed soil blocks. It is also used in the processing of sugar, tanning of leather, as a flux in glass melting and to neutralize acidic soils on farms.

The basic process is to heat the limestone to drive off carbon dioxide from the carbonate to produce calcium oxide (quicklime) - or in the case of dolomitic limestone a combination of calcium and magnesium oxide.

$$\underset{\text{calcium carbonate (limestone)}}{Ca\,CO_3} + \text{Heat } (900°C) \rightleftarrows \underset{\text{calcium oxide (quicklime)}}{Ca\,O} + \underset{\text{carbon dioxide}}{CO_2}$$

or

$$\underset{\text{(dolomite)}}{Ca\,CO_3.Mg\,CO_3} + \text{Heat } (725°C) \rightleftarrows \underset{\substack{\text{calcium oxide.} \\ \text{magnesium oxide (dolomitic quicklime)}}}{Ca\,O.Mg\,O} + \underset{\text{carbon dioxide}}{CO_2}$$

The second stage is to hydrate the quicklime to produce slaked lime. This involves sprinkling water onto the quicklime. Efficiently burnt lime will slake to a powder giving off heat, the reaction being rather vigorous.

$$\underset{\text{calcium oxide (quicklime)}}{Ca\,O} + H_2O \rightarrow \underset{\text{calcium hydroxide (slaked lime)}}{Ca\,(OH)_2} + \text{Heat}$$

However, dolomitic limes hydrate in two stages: the calcium oxide component hydrates first; then the magnesium oxide component much more slowly.

$$\underset{\text{(dolomitic quicklime)}}{Ca\,O.Mg\,O} + H_2O \rightarrow \underset{\text{(normal dolomitic hydrate)}}{Ca\,(OH)_2.MgO} + \text{Heat}$$

$$Ca\,(OH)_2 + H_2O \rightarrow \underset{\text{(highly hydrated dolomitic lime)}}{Ca\,(OH)_2.Mg\,(OH)_2} + \text{Heat}$$

Depending on the required end use, the hydrated lime is often graded, crushed and sieved before bagging and sale.

Lime can be used as an alternative to Portland cement, as a mortar in brick and stonework, as a plaster or for low stressed concrete. Lime can also be added to pozzalanic material - volcanic ash, pulverised fine clay, reject bricks, rice husk ash - which will then set hard when water is added. Quite often, lime and Portland cement are mixed to give the cement plasticity, this helps reduce the amount of cement (by up to 25%) and hence costs.

However, care must be taken when a dolomitic lime is used, because unhydrated magnesium oxide will gradually hydrate (using the water present in the atmosphere) and cause the mortar to block to expand, blister and crack. It is, therefore, necessary to ensure that dolomitic quicklime is fully hydrated - either by leaving it to hydrate over a long period or by pressure hydration. In the production of Portland cement, however, dolomitic lime is not possible because the $MgCO_3$ content has to be less than about 6-7% (3-3.5% MgO) so that the resulting level of MgO in the cement is below about 4-5%, to avoid the problem of the MgO gradually slaking.

The deposit of limestone near Hilieu is high in magnesium and would require some experimentation before it could be confidently used in buildings. This is not to exclude its use, but to determine the best processing method, kiln design and hydration technique. Most limestone deposits are full of impurities and it is advisable to seek the advice of an experienced lime burner to ascertain the best process for the desired end use.

(b) Gold mining

Unfortunately, due to the security position, the Consultants were unable to visit the gold mining areas near Kapoeta. However, based on the experiences of small-scale gold mining in Surinam (Reference 26) it is felt that improved techniques could be introduced to assist the gold miners in concentrating methods, prospecting and exploration techniques, using a range of appropriate technologies depending on the circumstances of the deposits.

Whilst at the present time it is not appropriate for NCA to have any involvement with gold extraction in Kapoeta, it should be borne in mind that improved technologies do exist. Furthermore, in the Kit area there is a growing interest in gold mining. Participants have already mentioned the possibility of forming a cooperative and this deserves some investigation by the Cooperative Project.

10.3 THE SECONDARY SECTOR

10.3.1 Agricultural processing

(a) Milling

This sub-sector has developed quite satisfactorily during the past few years and requires little comment. The Consultants wish to emphasise that there is room only for a limited number of mills and care should be taken not to encourage the creation of surplus capacity. Because of the apparent success of many of the mills, there is a tendency for cooperative societies and business men to see the installation of a grinding mill as a low risk:high return venture. This is not, in reality, the case.

(b) Oil processing

Although the Consultants placed considerable emphasis on the establishment of an oil-processing industry in their 1984 report (Reference 1), further evidence suggests that care must be taken to assess the financial feasibility before any major investment is made. NCA are recommended to keep in close touch with the oil-processing venture to be undertaken at Palotaka Mission and the trials being run at ERAP (Yei) with a Simon Rosedown and a Kornet oil-extraction machine.

ITDG has recently commissioned a report on a machine made and used in

Bangladesh. The conclusions of the report are that, in the Bangladeshi environment, the machine is comparable to the Simon Rosedown machine as regards throughput (approx. 40 kg seed per hour) & power requirements (3-5 HP), but needs up to 6 passes of the seed/oilcake to extract the oil. However, the machine, ex-Bangladesh, costs approximately £100 (sterling) as opposed to £3000 for the Rosedown machine. In Bangladesh this means a payback period of about 8 months. ITDG have been sufficiently encouraged to commission a further evaluation on the machine at the TDRI. NCA/SP should seek a copy of the evaluation report when it is ready (Reference 27).

(c) Small-scale sugar processing

Sugar is expensive and in short supply in the Study Area. Sugar cane is grown on a small scale in many locations and almost all of it is sold as cane. Both Sudanese and refugees are acquainted with jaggery (semi-refined brown sugar) and consider it acceptable — there appears to be scope for further development.

NCA/SP loaned a small bullock-powered crusher to a progressive farmer who was operating it successfully on a part-time basis. Such a device is capable of processing sugar cane from an area of between 10-20 acres. This represents a capacity of approximately 1 tonne of cane per day.

The technology steps up to 3 tonnes of cane per day with a diesel-operated 5HP unit; and again to 4.5 tonnes of cane per day with a 7.5 HP unit. These larger units are 4-5 times the cost of the animal-powered device. In addition to this must be added the cost of the engine and the fuel.

ITDG has been investigating a steam-powered cane crusher equivalent to 5 animal-powered crushers, using the bagasse (the crushed cane) as a fuel. One of the economic problems with steam engines in general is the heat loss, but, with this particular design, waste heat is used in the Gur processing. However, trials in Bangladesh have yet to prove economically viable with the steam engine costing as much as the crusher (for the larger units). The high capital cost in the Bangladeshi environment is not offset by the longer-term fuel cost savings. An evaluation for the Southern Sudan would need to be done, but it is important to note that the technology is still not proven and will probably take another 2-3 years before it can be verified.

Based on the experience of animal-powered crushers in Bangladesh and the

availability of oxen in Southern Sudan, it is the Consultants' recommendation to promote this in preference to diesel units (because of the non-availability of fuel) and steam units (because the techno-economic viability is still to be proved).

(d) Cotton processing

NCA is recommended to consider seriously the possibility of re-establishing cotton growing and ginning in the Madi Area. There is little point in discussing the processing aspects at this stage; if and when the proposal is taken further, a specialist should be called in to advise on the type and size of ginnery required. Reference 1 provides some information on small-scale plants.

10.3.2 Small-scale manufacturing

(a) Carpentry

The carpenters visited all charged low prices for their products, which barely covered their raw material costs. NCA/SP should, therefore, advise on costing their products realistically and assist with recommending cheaper designs or cost-cutting exercises such as bulk store buying of raw materials, or possibly help with marketing their goods, as was the case in the early days of the Village Workshops scheme.

A short course on care of tools, sharpening of saws, chisels, plane blades and drills would help carpenters maintain their quality.

Introduction of additional tools such as a simple wood vice and a treadle lathe should be evaluated for cost-effectiveness in terms of new products which could be made.

NCA/SP should explore ways of helping carpenters secure larger orders - for schools, hospitals, government departments - which at present are outside the reach of the small carpenters because they lack finance to purchase raw materials and capacity to meet larger orders. A bulk purchase store and/or loose groupings into cooperatives might assist groups of carpenters to cut their costs and streamline supplies.

(b) Blacksmithing

The Consultants were impressed, as many other visitors are, with the skill

and innovativeness of the blacksmiths. They play a vital role in the economy and all the evidence suggests they will continue to do so. As with carpenters, they tend to undercharge for their services and most have little concept of business. If they were to be more business-minded, the Consultants believe they would be more effective, as they could then buy better tools (or the steel to make them) and make a wider range of products. They were generally a very enthusiastic group of people, keen to display their skills and yet aware that there was room for improvement. NCA should assist this sector; the following are the main areas where assistance is required.

(i) Tool manufacture

It is suggested that NCA holds short courses for blacksmiths to show them how to make their own tools. This will teach them some basic blacksmithing skills as well as provide them with tools. Self-made tools can be designed to suit the blacksmith himself and the type of work he is doing. Recommended tools include: tongs (with different jaw shapes, grips etc.); hammers (0.5 kg up to 2 kg sizes, flat and cross peen, flat and ball peen); punches; chisels and possibly a simple grinding wheel.

(ii) Scrap metal identification

The techniques taught should include ways to identify types of steel and where to find them. Car leaf springs are commonly used because they are made from high carbon steel (over 0.2% carbon) but other parts of cars/trucks also are made from this type of steel; coil springs, starter springs, axles (half shafts), valves, valve springs, push rods, stick shifts (gear sticks), steering cross arms, linkage rods and torsion bars all contain high carbon steel. Saw blades and tractor plough discs are also useful. Mild steel could also be used for some applications if case hardened.

(iii) Tempering

The techniques of hardening are little known in the Study Area. These should be investigated by an experienced blacksmith, taking account of the scrap available and type of product. Quenching with water, brine or used engine oil should also be evaluated. With inventiveness and good judgement the best tempering techniques can be found and taught to the blacksmiths.

(iv) Study visits

Initially, it would be best to commission an experienced blacksmith to visit Hilieu to train its own blacksmiths, who can then pass on the knowledge. Study visits to see other courses in blacksmithing by selected people would also broaden the necessary knowledge. The Consultants would strongly recommend

a visit to the Institute for Agricultural Engineering in Harare, Zimbabwe, and the Village Blacksmith training course held at the Rural Industries Innovation Centre in Botswana.

(v) Raw materials

Whereas the use of scrap has been the general practice and will continue to be in the future, there are times when, without the proper raw materials, blacksmiths are either unable to produce what is required or they produce items of sub-standard quality. Steel importing by the private sector is fraught with problems. Because of the small quantities required in Equatoria, importers cannot take advantage of the low prices offered for bulk shipments from Japan or South Korea and are obliged to buy on the Kenyan market. Here prices are very high, as the steel market in Kenya is protected to assist the development of a home-based steel industry.

The possibility of NCA importing quantities of appropriate raw materials for sale at full cost to blacksmiths should be investigated. Whilst the Consultants appreciate that this practice would continue to make the local economy dependent on NCA support, it is believed that, without such assistance, the blackmiths' ability to diversify will be seriously constrained. Furthermore, by providing raw materials, this will reduce the level of importation of finished items (such as weeders).

(vi) Agricultural tool and processing equipment production.

This is a very long-term proposal to manufacture locally agricultural tools such as ox-ploughs, weeders, toolbars, and agricultural processing equipment such as maize shellers, threshers (pedal or engine-powered), after they have been evaluated. It is recommended that a study be completed to identify the long-term requirements of farmers in these fields and that a range of equipment is evaluated. A catalogue of such equipment has been compiled by the Intermediate Technology Publications called 'Tools for Agriculture, 3rd edition', published October 1985 (Reference 32); this should be used to help procure equipment for evaluation by NCA.

(c) Tinsmithing

As substantial quantities of items fabricated in Juba find their way into the Study Area, it is believed that this sector could be developed further. There is also room for improvement in the technology practised and NCA could be involved here.

In Botswana and Malawi ITDG has introduced four pieces of equipment to help the sheet metal worker improve quality and production. These help fold, roll and cut sheet metal up to 1.5 mm thick, and bend pipes (for furniture, trailers etc.). They are also developing more machines such as a hole punch and metal jenny (device for producing seams).

These pieces of equipment should be made for evaluation by the NCA to assess their technical and economic viability in the Sudanese context.

(d) Charcoal manufacture

There are many charcoal producers in the Study Area using very inefficient burning techniques. The original charcoal burners are believed to be of Zairean extraction using crude pit/earth kilns. They pile the wood into a shallow pit, set light to it and cover with earth to starve the fire of oxygen. This results in more wood burning to ash than is necessary.

While the wood is extracted free from the forests, and before the forests are depleted, there will be little incentive to improve charcoal burning on behalf of the existing burners. However, NCA/SP should attempt to introduce improved charcoal burning alongside a re-afforestation programme to try to control the situation. This would need to be achieved in full consultation with the Forestry Department.

Two possible techniques have been tried and tested. One uses a kiln built from locally made bricks, converting $15m^3$ of freely stacked wood into 0.8 - 1.5 tonnes of charcoal (depending on wood density) per week; the second method is an improved pit kiln using metal covers, chimneys and vents to control the burn; this converts $8m^3$ of freely stacked wood into between 0.75 - 0.9 tonnes of charcoal every 4-6 days.

An evaluation of these techniques for the Sudanese conditions is needed, plus a complete economic appraisal to include reafforestation, transport and end uses (References 28 and 29). Refugees in Opari mentioned their interest in establishing improved charcoal production.

(e) Shoe making

There is a small shoe factory, albeit temporarily closed, in Juba, and sandals made from car tyres and from leather are manufactured locally.

Some shoe making skills exist and attempts have been made to sponsor the production of infants' shoes by womens' groups. The Consultants believe there might be a place for the establishment of small-scale shoe making units. Technologies have been developed to suit scales of production from 8 to 1000 pairs per shift, for six types of footwear from those with leather uppers and soles to those made from injection-moulded plastic. It is a specialised field and would require expert advice if development was being contemplated. (Reference 30)

(f) Soap making

Soap is imported into Equatoria in large quantities from the north and from Kenya. Small quantities are also produced in Nzara, in Western Equatoria. The market for a reasonable quality product is assured and, in the past, private entrepreneurs have considered establishing a soap factory in Juba. The main problem appears to be a shortage of raw materials and when, for example, the British Government organisation, Crown Agents, evaluated the feasibility of a soap industry in Southern Sudan, they concluded that insufficient oil seed is grown in this area and, with the need to import other raw materials, such as caustic soda, an industry would not be viable (Reference 31).

However, the Department of Chemical Technology of the TH Eindhoven in the Netherlands and the Technology Consultancy Centre at the University of Kumasi in Ghana have been conducting research into the possibility of making soap with potassium carbonate instead of the traditional caustic soda (sodium hydroxide). All oils and fats of animal and vegetable origin can be used with potassium carbonate to produce soap, and it is suggested that NCA/SP experiment with this process for introduction at the village level.

To make soap, iron or earthenware containers are needed in which to heat and mix the soap. Weighing instruments or measuring containers are essential to obtain the right proportions in the mix to produce good soap. Often the mixture needs to be heated over a fire - an open fire is sufficient.

Fat waste or polluted fat can be used and must be completely melted before starting the soap preparation. Vegetable fats normally give a better lather.

Potassium carbonate can be produced from the burnt white ash from certain plant matter such as fruit peelings, especially banana or plantain peel, coconut shells and groundnut shells. Experiments should be done with the available

material. To steep the potassium carbonate out of the ash, the ash is boiled with water (1 part ash to 3 parts water) for 2 hours, and then filtered through a fine woven cloth. The water from the resultant solution is evaporated off to leave a white powder - the potassium carbonate.

The remaining raw material is soft water, rain water being most suitable.

To prepare soap with carbonates, 30 grammes of soap per kilogramme of fat are used. To this is added a quantity of potassium carbonate and an equivalent quantity of water. This quantity is dependent on the fat used (see Table 10.1). The raw materials are mixed and heated to boiling point (around 100°C) and stirred continuously as it gets thicker. After about 4 hours the soap is ready and should be pressed into moulds when cool.

TABLE 10.1 THE QUANTITY OF POTASSIUM CARBONATE FOR SAPONIFICATION OF 1 kg OF FAT

	kg/kg fat
Castor oil	0.22
Cotton seed oil	0.23
Coconut fat	0.31
Mustard oil	0.21
Palm oil	0.24
Groundnut oil	0.24
Rape seed oil	0.22
Sesame oil	0.23
Sunflower oil	0.23

Source: Vraagbaak, Postbus 41, 6700AA Wageningen, The Netherlands.

(g) Other small-scale manufacturing

Tailoring, being a highly competitive and well patronised business, appears to be an unlikely candidate for further NCA assistance.

Weaving training at Hilieu has been very successful and should continue as long as a market exists for the woven cloth. It might soon be opportune to introduce some new designs and materials and to investigate the opportunities for diversifying the range of uses to which the cloth can be put. It appeared, for example, that the present material is somewhat heavy for use as shirting.

Other activities such as brewing, pottery and basket weaving appear to be expertly handled by the people and the opportunities for introducing improvements are rather limited. The market for cakes, biscuits and other cooked

items appeared to be rather limited; it might, however, be worthwhile for 'Family Life' to investigate the possibilities. One women's group in Madi had been operating a successful teashop, working on a rota basis, and such a venture might provide a good opportunity to test market reactions to some new ideas.

10.3.3 Construction and construction materials

(a) General

With NCA's major building programme drawing to a close, there are likely to be few opportunities for any significant construction activities in the near future. NCA are well aware of this and are now modifying their approach to cater for the likely needs in the future, with emphasis on the use of local materials, designs and methods. Improved private housing and the provision of simple community-type buildings are seen as the main focal points. Contact with the Catholic Church's programme of building pre-primary schools and with its proposed construction activities at the Kapoeta Multipurpose Centre might be of mutual benefit. The Department of Community Development, and more particularly its 'Support Unit', is involved in similar activities and is worth liaising with.

The EMCC in Juba, with a well-qualified and enthusiastic manager, produces bricks and tiles, and is worth contacting on technical aspects.

(b) Brickmaking

Village brickworks are seen throughout the Study Area, but they all could produce a more uniform and better quality brick. This would help to reduce the quantity of cement mortar needed during building, increase production and reduce costs of fuelwood used.

If the clay was properly crushed into even size a better brick could be made, with less chance of distorting during firing. Simple clay crusher designs are available and should be evaluated, with the clays in the Study area.

With even-sized clay particles, the wet clay can be processed by alternate layers of clay sprinkled with water and left overnight. The result is a more 'plastic' clay which can be moulded in a simple hinged mould (or small bench mould) using sand, sawdust or fine dry clay particles for the releasing

agent. With less water in the brick, it maintains its shape during drying and firing, giving a consistent and standard product.

A well laid-out brickworks can greatly assist production flows and hence labour efficiency. Simple purpose - designed wheelbarrows to transport the moulded bricks to the drying area, and more efficient stacking methods, should be introduced.

The introduction of better clamps or brick kilns should be considered, to reduce fuelwood usage and ensure brick production during the wet season.

To achieve all this, it is recommended that NCA/SP employ a brick consultant on a short-term contract to evaluate the possible permutations and help draw up an implementation plan.

(c) Tile making

The clays in the Study Area are suitable for tile production and there have been tile-making units in the past. Many mission buildings have Roman tiles made by the early Italian missionaries. It is believed that these are no longer used because of the high costs of the roof timbers needed to support their weight.

However, a recent development by J P M Parry & Associates in UK has resulted in a pantile tile with a much greater coverage than the original Roman tiles, requiring less timber to support the weight.

An evaluation of the technique should be made, with a view to introducing this in preference to imported zinc sheets.

(d) Stabilised blocks

Soil can be stabilised with lime to produce a reasonably strong block for building. The process involves mixing lime and soil, and compacting it into a mould. The Cinva-ram has been a popular machine to do this but earlier versions have been left unrepaired, so a careful evaluation would need to be conducted of the various units now available. This should be done in conjunction with the ABTP.

10.4 THE SERVICE SECTOR

10.4.1 Electricity

(a) Kenyeti Hydro-Power Proposal

The Consultants are well aware of the importance that NCA is placing on the proposed plan to transmit approximately 200 kw of surplus power from the hydro-plant at Katire to Hilieu and Torit (Phase I), and of its plans to change the generating equipment at Katire to provide approximately 650 kw of additional power to Torit (Phase II).

Taking Phase I and focussing initially on the replacement of fuel-generated power by hydro-power at Hilieu, the Consultants carried out a simple analysis, based on the available data. Capital costs were estimated, at 1983 prices, to be in the order of US $ 15,000/km of transmission line, using wooden poles. This is a fairly generous estimate and even after allowing for inflation and the use of metal towers, it is not anticipated that costs would exceed US $ 16,000/km. For the 43 km line from Katire to Hilieu, and allowing for connection costs at both ends, total capital costs in 1985/86 prices would be around US $ 760,000 or £S2.4 million.

Using Hafslund's recurrent cost estimate of around 11 per cent of initial capital cost, present levels of expenditure on fuel of £415,000 per annum, an assumed one year construction period and a twenty year project life, a financial internal rate of return of 20% was calculated.
The results of this analysis indicate that on financial grounds it would not be feasible to supply Hilieu alone.

If it is agreed that steel towers, rather than timber poles, are to be used, this will mean that virtually all of the capital items will need to be paid for in foreign exchange. This is most unfortunate; had the scheme been one which made substantial savings in foreign exchange, by eliminating the need to import fuel, the project might have been justifiable.

Supplying Hilieu is, however, only part of the proposal. If a similar benefit to that anticipated for Hilieu were to be forthcoming from Torit (i.e. £S415,000/annum), with the additional capital cost of around £S600,000 for transmission line and an estimated £S200,000 for connection charges, and additional recurrent costs of around £S88,000, the overall Phase I proposal would yield a financial IRR of around 14 per cent.

It is, however, unrealistic to assume that Torit would utilise and pay for power to this amount, particularly as the main potential users with first call would be Government departments which in Juba, for example, generally do not pay for centrally generated power. For the Phase I proposal to be financially feasible, at least £S300,000/annum would be required from Torit.

The above calculations do not take account of the possibility that a charge might be made at Katire for the extracted power or that the Forestry Company might in the future wish to utilise part of the surplus power in its proposed carpentry workshop.

In financial or foreign exchange terms, at present estimated costs and benefits, the proposal does not appear to be viable. On social grounds there is probably a much stronger case, as potential consumers would be very appreciative of secure and problem-free power supplies, and there would undoubtedly be some stimulus to the local economy over time. It is unfortunate from an economic view-point that Torit is the natural choice of location for electrification, for despite its position as provincial capital it is unlikely to become a focal point for development. There are few prospects that food surpluses will be forthcoming in the near future, the likelihood that it will become an important stop on the Juba-Nairobi main road is rather remote and the attitude towards development in the surrounding areas is not particularly encouraging.

Whilst it might be agreed that electricity should be provided in order to change the attitude, it should be remembered that this is only one of many factors and there should be evidence of initiative before a major investment in power supply is made. Little use has been made of the power which has been available for many years in Katire. In Juba, when an entrepreneur believed that an ice and soft drinks industry was viable the fact that he was unable to obtain power from the town supply did not deter him from investing and generating his own power.

If the decision to proceed with Phase I is made, there should be solid evidence, apart from the supplies to Government departments, that the remaining amount is going to be used productively. Providing domestic and public lighting is a luxury in the context of the Study Area and is difficult to justify. It could be argued that the main purpose of providing Torit with power is to give the Area Council a means of generating revenue. In this context it should be appreciated that annual costs would be in the order of £S100,000 to cover maintenance of the Hilieu to Torit section and operate the power distribution company. If Torit were to pay its fair share, it should also contribute towards the maintenance of the remaining part of the system back to Katire.

If power is supplied in Torit it is recommended that, where practicable, a system is adopted to sell a fixed current rating per month. The current limit is then set so that if a consumer attempts to extract more the power is automatically cut off. On the other hand, consumers are free to draw up to their limit 24 hours a day; this helps to increase load factors and is particularly suitable for hydro-schemes. Such a system obviates the need for expensive meters and reduces operating costs. Consumers normally pay in advance on a monthly basis. Estimated connection charges per household are in the order of $300 per connection, covering property wiring, local distribution and a current limit switch.

Whatever reservations the Consultants may have over Phase I are minor compared to their feelings over Phase II, where an additional 650 kw would be supplied to Torit, at an estimated capital cost, in 1983 prices, of US $1.9 million. They do not believe that there is any chance of such quantities of power being utilised in the foreseeable future, when account is taken of the amount of complementary investment which would be required.

There are no high power-demanding industries which spring to mind for establishment in Torit and, if there were, they would need to be large-scale ventures. To utilise, for example, only 500 kw would require the establishment of a nine tonne per day glass factory (capable of producing 13 million drinking glasses annually) or a galvanising plant capable of producing around 1 million buckets annually. The Upper Talanga Tea Project, costing well over £520 million, requires less than 200 kw.

The Consultants are firmly of the opinion that the investment in Phase II cannot be justified and alternative uses of funds should be considered (eg re-establishing the cotton industry).

(b) Small-scale hydro-power

Apart from the above mentioned proposal, there are several small-scale hydro-power possibilities.

There are a number of rapids along the River Kinyeti (Reference 17) which could provide a useful power source if coupled to a water wheel or turbine. In Kenya a large number of traditional vertical-axis water wheels are used for maize grinding. Similarly, in Nepal - where research work has been progressing well over recent years - simple water wheels have been used to good effect for the last three decades (Reference 31).

NCA should survey the Kinyeti for suitable sites, as well as other perennial rivers in the Study Area, and evaluate their potential for commercial exploitation. A number of agro-processing devices such as mills and expellers are being introduced into the area and they all need a power source.

The minimum head of water required to drive a water wheel or turbine (a propeller turbine being most suited to low heads) is 2.5 - 3.0 metres. Normally, only 10 HP (7.5 kw) at most is required to drive the agro-processing equipment, so at heads of between 2.5 - 3.0 metres a flow in the order of 300-350 litre/sec, depending on the efficiency of the turbine/water wheel chosen,is adequate. Higher heads would require proportionally less flow.

Table 10.2 shows the power requirements needed for typical end use requirements of small hydro-schemes. To obtain the various speeds required simple belt/pulley arrangements can be made. Depending on the power available, a number of units could be operated simultaneously during the day and electric lighting could be provided at night when the other appliances would not be working.

10.4.2 Mechanical workshops and repair services

LIS experience with these facilities has not been very encouraging and, at the present state of development, the opportunities in these fields are very limited. They are, nevertheless, vital services and,if the need for further facilities becomes apparent, any proposal should be carefully considered. Loans should be kept to a minimum,to allow such businesses to grow at a pace which the owners can keep up with.

TABLE 10.2 POWER AND SPEED REQUIREMENTS FOR TYPICAL MACHINES

Machine Type	Speed of Rotation Preferred r.p.m.	Typical Power Required HP (kw)
Grinding Machine (12-16 kg/hr)	100 - 150	1 - 2 (0.75 - 1.5)
(75 kg/hr)	200 - 500	2.5 - 5 (2.00 - 3.75)
Oil Expeller (15 kg/hr)	400	3 - 5 (2.25 - 3.75)
(40 kg/hr)	175	5 (3.75)
Threshing Machine (100 kg/hr)	400	1 - 2.5. (0.75 - 2)
Circular Saw (350 mm Ø) (maximum thickness of wood 125 mm)	1500 - 2000	2 (1.50)
Wood Turning Lathe	100 - 300	1 (0.75)
D.C. Dynamo[1] (12v, 400w)	1000 - 1200	0.8 (0.60)
A.C. Alternator[2] (220v, 1 kw)	2800	1.5 (1.20)

Source: New Himalayan Water Sheds; Consultants' data.

1 Equivalent to 20 x 20w automobile head lights.

2 Equivalent to 25 x 40w incandescent lamps.

10.4.3 Retailing

Despite the difficult economic conditions the retailing sector is surprisingly dynamic. Southerners have managed to take over from outsiders in several areas without any external assistance. Cooperative Societies have emerged in numerous locations, providing alternative sources of some essential commodities to consumers, possibly assisting in keeping prices stable in certain instances and giving local people the opportunity to acquire retailing skills. Their influence on the retailing scene is, however, generally considered to be fairly insignificant, and nowhere did the Consultants find that local retailers considered them as a threat.

Although there are numerous problems facing retailers and business, in general, in the areas where southerners already control much of the business, none appears to be very serious or insurmountable. Where non-southerners dominated, the main problem is that the generated profits immediately leave the area. It was generally accepted that in these areas, the local people were not interested to participate in retail or other business. It is likely that such resistance will take some time to break down, and a logical transitional step would be for other southerners to move in and take over the business there. Although this is already happening to a limited extent, there are several reasons why this is likely to be a slow process. The non-southerners are well established in the main centres of Torit and Kapoeta and show little sign of wishing to leave. Witness, for example, the construction of a large mosque in Torit. Furthermore it is often easier for a complete outsider to operate in the somewhat hostile conditions of the centre and east than it is for people from neighbouring areas. Northern Sudanese traders are found, for example, buying gold in the lawless gold mining areas and yet a doctor from the west of the Study Area was unable to take up a post in Torit, because of local resentment. It is believed that there is little NCA can do to overcome these problems in the short term, beyond that which it is already doing.

Of the general problems, it is unlikely that NCA can do much about the security problem, unofficial and official harassment and bureaucracy, or discrimination by wholesalers and central Government against Southerners (if this, in fact, exists). Regarding problems of inadequate and expensive transport, the unavailability of credit, the low levels of business skills and the shortage of storage facilities, there is the possibility that NCA can assist.

10.4.4 Transport

The shortage and high cost of transport in the Study Area for passengers and freight is seen as one of the major bottlenecks to development. Virtually no new vehicles are coming into the area, except those purchased by agencies, and the army is requisitioning some of the trucks which are operating. Charges are high but not unreasonably so, taking account of the costs involved, but they must, nevertheless, have a dampening effect on the local economy. Few opportunities to reduce costs are likely to arise except with regard to the improvement of Government-maintained roads and the Magwi to Upper Talanga section. NCA has made big efforts in this field, providing a comprehensive system of reasonable feeder roads, extending loans, through LIS, for the repair and purchase of vehicles and providing cheap transport facilities to TDM. The ox-cart programme is having a growing impact on localised transportation problems, but does not solve the major problem of long-distance freight movement.

In an ideal situation, a range of vehicle capacities is available, suiting the varying needs of the community. In the Study Area the range is very limited and contrasts sharply with conditions in more favoured, but rurally based, economies such as in Kenya. There appears to be a place for pickups of around 1½ tonnes and more trucks of 3-4 tonnes capacity. Many of the potential users of transport do not wish to move large quantities, and furthermore the costs of purchasing and operating the smaller vehicles are more likely to be within the grasp of the type of traders found in the Study Area.

It appears that there are several traders, or groups of traders, who have sufficient capital to purchase vehicles, but are unable to do so because of supply problems. Vehicles are available in Khartoum, if buyers are prepared to wait. They are imported through Port Sudan and for the larger vehicles bodies are built on in Sudan. With the closing of the Nile, vehicles cannot be brought to the south, and at the present time, imports from Kenya are not allowed. Both in the short and longer terms there would seem to be a good case for allowing vehicles to enter in this way. Body building in Juba should not present major problems. Whether or not NCA can help in furthering this proposal is another matter.

There would be great advantage if agencies could standardise as far as possible on the models of vehicles imported and encourage the private sector to do the same. Simplification of spare part supplies and service facilities

could lead to substantial reductions in costs and freight rates.

10.5 EDUCATION AND TRAINING

The Study Area and Equatoria in general suffers from the shortage of people with reasonable levels of education and with training in practical and professional skills. The situation is, thus, very different from Kenya, for example, where there are large numbers of well-trained people unable to find appropriate employment.

This is a fundamental constraint to economic development, and it is clear from the data presented in Table 2.7 that the Study Area has a long way to go before education levels can be considered adequate. The Consultants are somewhat unclear why so little emphasis has been placed on education, except in the refugee areas, and believe that serious consideration should be given by NCA to a rapid expansion of the Education Project. It is appreciated that it is unlikely that Government would be capable of paying the salaries of large numbers of new staff and that trained staff are in short supply. Such constraints apply to the Agricultural Project, but this has not prevented the recruitment of large numbers of field staff.

The Catholic Church has put high priority on education and within its limited capacity is making significant progress in this field.

Specialist training in practical and professional skills is a more complex problem. A wide range of skills, at various levels, are required and in planning what facilities are required it is necessary to have a knowledge of the numbers of people already with the required skills and the number of new vacancies which are likely to be forthcoming in the future. Such a manpower survey would normally be made at the regional level; no such information exists for Equatoria.

There are a considerable number of training institutes in Equatoria covering most of the important disciplines. Discussions with staff responsible for choosing what courses should be provided and the number of places which would be made available, generally agreed that it was difficult to make logical decisions without a proper understanding of the manpower situation. The Consultants believe that present facilities in Equatoria are adequate to provide trained people, in the disciplines and at the levels required, in sufficient numbers to meet most of the future requirements of the Study Area, given the

limited prospects for economic growth. There will, naturally, be specialised fields where no training facilities exist, and here as in many places, trainees will need to be sent further afield.

Regarding NCA involvement in artisanal training, the Consultants have recommended that present training activities are, if necessary, modified to allow participants to be formally trade tested, at the MTC for example. It appears that the carpentry workshop is already moving in this direction.

There would also be some merit in making a clearer distinction between training and production work and placing the responsibility for training under the Training Office, rather than with the workshops. The two aspects do not mix well and trainees tend to be used for dirty and simple, repetitive work of little or no training value and, as a consequence, they become disillusioned and less motivated.

Ideally training facilities should be separate from the workshops. It is also suggested that NCA consider the possibility of providing limited quantities of raw materials to the Torit Secondary Technical School. Whilst it is quite clear that this is Government's responsibility, the reality is that it is highly unlikely that adequate funds will be forthcoming and as a consequence large numbers of students fail to make full use of the excellent facilities and the training provided by a group of well-trained and highly motivated staff. It might be possible, for example, for the school to repay, to some extent, by giving back to NCA finished articles made by students during their training. A closer liaison between the school and NCA might also allow NCA to identify likely future vacancies in particular fields and the school to modify its training pattern accordingly. If NCA wished to identify promising students during their course, it could organise a sponsorship scheme.

Another possibility is that in return for NCA assistance, the School could make its facilities available for the training of NCA's trainees.

Closer liaison with several of the institutes is highly recommended, particularly with the MTC, the RATC, the Afoye Technical Training School and the Catholic sponsored Multipurpose Centre in Kapoeta.

The problem of inappropriate curricula, at schools and at institutes, is a serious one and there are some signs that conditions will improve. NCA can assist by making itself and its requirements known to the institutes.

The Cooperative Training Centre at Torit has filled an important gap in the overall training scenario and will, hopefully, be of significance beyond the cooperative movement.

10.6 NCA'S VILLAGE TECHNOLOGY UNIT

The original objectives of the VTU were to develop and apply intermediate technologies based on local resources available to the rural people, to assist them in their day to day lives, to make their tasks easier and to help increase productivity. Whilst these objectives are fundamental to intermediate technology the Consultants feel that they are rather general and give little guidance for the identification, development, testing and dissemination of intermediate technologies. To illustrate this point the Consultants would like to develop the intermediate/appropriate technology philosophy and explain how the technologies introduced by the VTU fit into that philosophy.

To promote a technology and identify if it is, indeed, appropriate, it is important to proceed along the following steps:

(a) Identification of the original need or problem, and define that need in terms of the local resources and skills (to operate and maintain technology) available to meet that need. This requires an assessment of the local resources, their exploitability, processability and suitability; and an evaluation of skills, how they can be developed and upgraded.

(b) This needs to be understood in the context of the culture and society in which the technology will be introduced; the ecological constraints and infrastructural implications.

(c) With the knowledge gained from (a) and (b) the technology or package of technologies can be researched or developed, to provide a choice of technologies to evaluate, and for acceptability tests. There are three, or a combination of three, possible routes.

- Assessment of a traditional technology to see how it can be upgraded to satisfy the requirements of (a) and (b). This is more likely to be accepted as it requires only a change in a familiar technology.

- Adaptation of a conventional technology - used and proven elsewhere - to meet the requirements of (a) and (b). This may involve a de-scaling of technologies used in Western countries or slight design changes of technologies tried and tested in other developing countries to suit local materials or preferences.
- Development of completely new technologies to satisfy the requirements of (a) and (b). The capacity or capability of a unit - such as VTU - to do this would be dependent on the extent to which the VTU is developed, because at present it has a limited ability.

(d) An evaluation then has to be done on the financial viability of the technology proposed. It must be affordable by the people it is intended to help, or generate sufficient cash advantage to repay and service loans. Therefore, a cost-benefit analysis must be conducted. The user of the technology must see a clear advantage in using it such that it will be a net gain rather than a burden. Coupled to this is an economic and social evaluation; is the technology going to disadvantage others or will it destroy more jobs than it creates, for example.

(e) A pilot project can now be devised to introduce the technology or choice of technologies, and test them practically against all the variables identified. The pilot stage will probably involve training - both technical and managerial - further technology adaptation and organisational changes.

(f) The project should be monitored to check that it satisfies the original need, does not create further problems or disturbances, does create net benefits and to whom.

(g) Once all these points are satisfied then a scheme for the dissemination of the idea to other communities needs to be developed and instigated.

Invariably, there will be backtracking as obstacles are approached and rethinking is necessary. But in order to ascertain that a technology is truly appropriate this general approach must be adopted. It is recognised that it

is not always practical or logistically possible to adhere rigidly to these steps, but the promoter of the technology must be, at least, aware of the potential pitfalls which could be encountered. It should also be pointed out that rarely is the technology the element which makes it appropriate, it is the socio-economic factors surrounding the technology which matter. A recent survey (Reference 33) identified "14 factors influencing the success or failure rate - only one of which was technology itself. Other factors included raw material supplies, markets, time constraints, socio-cultural constraints, organisations, economic viability, availability of credit and loans, and extent and quality of training, extension and monitoring inputs". Other factors beyond the control of NCA such as rising fuel costs, Government policy changes and political instability must also be considered.

It is within this context - and that technology promotion is difficult - that the Consultants evaluate what the VTU has done, and will illustrate why it has succeeded or failed. There is little data available about their technologies or why they were chosen, so it would be unfair to say their successes were more luck than judgement - especially as luck is an important ingredient - but it is fair to say the Village Workshop project was successful because it contained important elements of training, raw material supply, credit for tools and two years of monitoring, follow-up and extension. Similarly, the ox-cart project is now becoming a success because of good extension - by the Agricultural Project - training in operation and maintenance, credit facilities and a good design. It is important to note that their original design of ox-cart, using locally available materials, was inefficient because it used local materials. Design/philosophy compromises were necessary to overcome this: axles were imported for the cart. This also illustrates another point, that without good management, training and extension a good technology still will not work. It was not until the VTU came under the Agriculture Project that the ox-cart/plough technology became used.

The failures are sad, because they easily could have been avoided at an early stage. Table 10.3 highlights the major reason for failure (but there are many other reasons as well). It shows that in seven cases there was no need for the technology or an end use for it; in four cases the technology was socially or culturally unacceptable; in six cases - even if there was a need - the technology was inappropriate and provided no significant improvement over that already used; and in one case the technology was simply too expensive. The technology development/promotion in these cases never entered the extension phase, but it is fairly sure that they would have all subsequently

TABLE 10.3 VTU INNOVATIONS: REASONS FOR FAILURE

Technology	Not required	Not accepted culturally	Technology inadequate	Not viable
Solar heater	X			
Waterwheel	X			
Biogas	X			
Mud stove		X		
Barrel stove		X		
Rope and washer pump	X	X		
Shallow well pump	X			
Groundnut shellers			X	
Maize shellers			X	
Winnowers			X	
Cassava rasper			X	
Blacksmith bellows	X	X	X	
Wheelbarrows			X	
Brick bakery	X			X

Source: ITDG

failed at this stage because the VTU had no real extension of its own - relying on the RDCs for this. Not surprisingly the RDCs were reluctant to support these technologies - but they failed in their duty to feedback to the VTUs their findings.

When technologies are 'pushed' like this, and are obvious non-starters, the unit will inevitably lose credibility and will give intermediate technology a bad name. It is felt that many of the designs were extracted from literature published by reputable organisations such as ITDG, TDRI and VITA without checking on past experience by other users or if there was indeed a problem for them to solve in the Equatoria region. It is true that in some cases careful and sensitive introduction of a technology to test its acceptability is often the best way but this requires an inquisitive, innovative and experienced person who can appreciate all the multi-disciplinary inputs necessary for successful technology adoption by the people it is trying to help. Experience will help assess the reality of the perceived need that the technology is meant to meet, and innovation is required to choose the best way to introduce the technology and adapt as necessary. Simply presenting people with a piece of hardware hoping they will appreciate the benefits it might bring will not yield positive results. There are many discarded technologies at the VTU and RDCs to prove that.

Despite all this, it is felt that the VTU has a serious and real role to play in the evaluation, development and promotion of appropriate technologies in the home, on the land or in business promotion. But the mechanisms needed to achieve this must be developed within the NCA/SP structure. The Consultants' recommendations are given in Section 10.12.

10.7 THE APPROPRIATE BUILDING TECHNOLOGY PROGRAMME (ABTP)

It has already been appreciated by NCA/SP that its building programme was not appropriate - using almost entirely imported raw materials and western designs. Therefore it is developing an Appropriate Building Technology Programme (ABTP). The same basic steps as discussed in the previous section should be followed, in particular a study of the views of the people as to what type of improvements they want, the problems they face with their present buildings and raw materials, before detailed analysis is made of other possible raw materials, designs or improvements. Whilst in the early stages of developing a plan and strategy for this programme, it is strongly recommended that a study tour is undertaken to gain ideas and learn from other people's experiences.

Such a tour should encompass visits to the IT Building Material Workshops in Birmingham, UK; the Appropriate Building Technology course at Birmingham Polytechnic; the Intermediate Technology Development Group's Building Materials Programme; UN Habitat in Nairobi; and the Rural Low Cost Housing Project in Malawi.

Based on the Consultants' experience of using the improved tukul built at Palotaka RDC it would question the improvements: the thatched roof was not pitched correctly and thus the rain soaked through rather than ran off, causing it to leak in several places; the pit latrine was not ventilated to remove smells and resulted in swarms of flies occuping the latrine, making it extremely uncomfortable to use. A simple black vent - facing south - would greatly improve this. If improvements are made to existing designs, they must be significant, otherwise the project will fail.

10.8 THE LOCAL INITIATIVE SUPPORT PROGRAMME

Having, coincidentally, been in the Study Area at the time when this programme was in its infancy and having had reservations about the programme at that time, the Consultants were not surprised to find that LIS has not been a great success. Whilst there are a number of very good reasons, some of which were outside the control of NCA, why this should be, the Consultants have reluctantly formed the opinion that this programme has not been given the required attention. It is appreciated that a large amount of money was made available for disbursement over a short period, that refugees are difficult people to lend to, and that, because of the security situation in 1985, there was a complete turnover in staff and the economic position of many of the LIS recipients was upset.

These, however, do not really explain why so many loans were granted without adequate assessment of the proposed project or without proper checking of the recipients' business expertise. Many of the loans were, in the Consultants' opinion, far too large for first-time borrowers with no previous credit rating, no security and little personal capital being contributed. A number of the contracts signed by LIS officers and the recipients were very sloppy, in some cases not even indicating the exact date by when instalments should be paid. The administration and accountancy aspects were not being handled properly and there was a general feeling of disorganisation. It was evident that follow-up in the field, in terms of providing practical advice on business and technical aspects and of chasing up late repayments, was inadequate. There has been virtually no monitoring or evaluation of ongoing

projects. With the ox-cultivation loans there has been adequate opportunity to follow up the original loans. Nothing has been done and yet, meanwhile, loans for the same purpose are being extended.

Unfortunately the damage done by allowing this programme to develop the way it has is not limited to the £S25,000 already or about to be written off, or the £S64,000 which is tied up in projects with a questionable future. A number of people with whom LIS was discussed indicated that they considered the programme to be a source of easy money. Few believed they would really be expected to repay the loan in full. In the Consultants' view, sufficient damage has been done to warrant the closing down of this programme, i.e. no more LIS loans should be made. Any future loan system should be renamed and run on far more rigorous lines.

Despite the disappointing experience with LIS, the Consultants believe there is a place for a credit scheme within NCA's overall programme. There are very few alternative sources, and until such time that these and others become available, NCA should be there to fill the gap.

Whilst credit is an important component of many developing businesses it should be appreciated that many, including some of those operating in the Study Area, were established and developed using privately generated capital and without credit. In struggling to get established, the businessman actually gains invaluable experience, teaching himself the skill of watching his money very carefully, costing his inputs, pricing his outputs and monitoring his profits. Providing credit can be of a real disadvantage for the recipient, as it may deprive him of the learning process described above and shoulder him with a debt which he would never have had if he had been building up his own capital. If the loan launches the recipient into a scale of business for which he is totally unprepared, the situation is further aggravated. Even where the potential borrower is credit-worthy, care must be taken not to extend credit unnecessarily. Providing interest-free credit is not generally recommended as it places the recipient in an artificial atmosphere which does not reflect the conditions which apply in the real business world. It also reduces part of the incentive to make the investment work to pay off the interest and removes the deterrent of accumulated interest charges to delaying repayment. Most credit schemes work on the basis of a limited initial lump sum which is loaned out to a number of people, with further loans being extended as and when repayments are made. Charging interest helps to keep the lump sum intact and make good the losses resulting from bad debts, administration costs and inflation.

First-time borrowers should not be encouraged to embark on large scale ventures but should, if the conditions are right, be provided with a loan of sufficient size to enable them to make a first step. If they succeed in achieving this and repaying the loan, they are then in a position to apply for a second, and probably larger loan. It is also important that the borrower has some of his own money invested in a venture; he is likely to be much more careful if this is the case.

The question of security or collateral is a complex one as it is often difficult for small-scale borrowers to provide this and furthermore it is very unlikely that an agency such as NCA would, if the situation arose, actually become involved in calling in the security. A compromise solution is to require that the borrower's application is supported by guarantors, but here again it is often difficult to collect if the borrower defaults. In many cases, small-scale loans are provided without security, whilst any large loans must provide security.

It is virtually impossible to draw up a strict set of guidelines as there are so many factors to take into account.

It can be argued, for example, that it is not a good practice to give loans to NCA staff. They are already fortunate in having a job; they should be giving most of their attention to their work rather than on other ventures. If they leave NCA under circumstances which are not amicable, it may be difficult to recover unpaid debts and, being part of NCA, LIS officials may find it difficult to reject proposals from friends, colleagues or even superiors. On the other hand, being an NCA employee enables LIS officials and others to gain first-hand knowledge of an individual's character and capabilities. It is evident that for many on lower salary scales it is imperative that the employee or his or her family engage in other income-generating activities and it is easier for NCA to supervise its own staff's activities and to use them for demonstration purposes. It is suggested that loans to NCA staff should be vetted by a number of people to avoid the possibility of favouritism, that only projects which can proceed successfully whilst the employee is putting in a full working week are considered and that loans should generally be small ones to assist the lower paid staff to achieve a reasonable standard of living.

Another problem arises when a decision has to be made between lending to people who are already successful and those who are the most needy and to whom a marginal increase in income would be so much more valuable than it would

be to the successful man. The risks and administration involved are likely to be substantially greater in the latter case. Whilst every case must be treated on its merits, the important issue here is the overall impact of the loan, and as a general rule, it is likely that the better choice is to assist the successful man, as long as the benefits stay in the area.

It is encouraging in the Study Area to notice how successful southern businessmen are in diversifying into agriculture, agro-forestry, ox-plough contracting, truck owning and agro-processing, and in so doing are creating employment and demanding services.

With regard to refugees, it is recommended that any future funding does not specify that a given proportion be allocated to refugees. The experience so far has been generally bad and, except where the character of a particular individual is well-known and his or her intentions regarding staying in Sudan are clear, loans should not be extended. Once it is evident from the investment which has been made in land development and establishing a home that a refugee is intending to stay then, of course,he or she should be treated the same as a Sudanese.

With regard to the type of ventures which NCA should be encouraging, the Consultants have made their comments on the various on-going projects in Chapter 7.

The LIS programme appears to be used to some extent as a useful way of channelling funds for a number of purposes (e.g. self-help schemes, NCA staff house loans, cooperative society loans). Whilst the advantages of this are clear in terms of administrative tidiness, it is suggested that if a new credit scheme is instituted, it should not confuse its activities by taking on these other responsibilities.

Whilst other credit agencies operating in the south are not well developed NCA is urged to meet with them. In this way fields of responsibility can be defined and attempts made to standardise, as far as possible, the format of any loan agreement contracts. It is also important to ensure that such contracts comply with Sudanese law and are valid in a court of law.

10.9 COOPERATIVES

The development of the cooperative movement has been a success in the Study Area, resulting from the massive injection of capital and manpower by NCA.

Past investment is now of little relevance however and the important issue is whether or not the TDCU is on the road to self-reliance and prosperity. Despite the apparent partial chaos in TDCU's accounts, and an outstanding debt to NCA of around £S2.0 million, the Consultants were happy to learn that TDCU's trading accounts over the past few years have been consistently positive and the indications are that the debt will be paid off over the next few years. The somewhat artificial position of the TDCU vis-a-vis the cooperative societies is understandable, bearing in mind the extent and the speed of NCA'S involvement. With hindsight it is easy to be critical of the way NCA has, it might appear, imposed development on the TDCU, instead of concentrating on strengthening the societies and allowing them to decide what they wanted the TDCU to do. Whatever the past history has been, the Consultants believe the present structure of the TDCU is appropriate to the needs of the cooperative movement within the Study Area and that there is nothing substantial which cannot be modified as and when the societies become more fully involved in the running of their own union.

The Consultants applaud the success the cooperatives have had in supplying basic food commodities at reasonable prices (and, in so doing, stabilising prices charged by private traders), supplying agricultural inputs and tools in large quantities, and providing a market for surplus agricultural production, which not only has provided farmers with reasonable returns but has assisted in the distribution of food to deficit areas. Additional benefits have been to enable society members to accumulate and save funds, in secure circumstances, to establish a network of grinding mills and to provide society staff with the opportunity to acquire entrepreneurial skills.

The cooperatives have played an important role in development of the Study Area and indications are that their impact should grow as the organisation stabilises and acquires greater expertise. The new Cooperative Training College should provide invaluable assistance to society members. The main clouds on the horizon are the state of the TDCU's accounts and accounting system, the lack of business expertise at the TDCU level which is reflected through to the branches and the societies, the growing unease of some of the Madi (and possibly Acholi) societies at the dictatorial role played by TDCU, the limited availability of foreign exchange which NCA can make available for TDCU purchases of imported items, the low levels of benefits (in terms of dividends and interest on deposits) accruing to society members and the problems of finding credit sources, outside NCA, to enable the TDCU to on-lend to societies.

NCA could assist by giving the TDCU the opportunity of being assisted by an expatriate accountant and possibly a business adviser to assist both TDCU and the societies. In many ways it would be better if these people were not NCA employees, but were recruited through another agency. In this way these staff would be seen as being independent and representing the interests of the TDCU and not NCA. In many people's minds there is little distinction between the TDCU and NCA and this is unfortunate. As an aid agency NCA should not be involved in commercial activity; with TDCU, on the other hand, this should be one of their main functions. More positive steps should be taken to distinguish between the two; taking a simple example, when TDCU hires trucks from NCA, it would make good sense if the trucks were labelled 'on hire to TDCU'.

It is understood that a cooperative adviser is currently being recruited; it is essential that the successful candidate is fully experienced in cooperative philosophy and practice. It is understood that, in the past, several of the coordinators have not been specialists and, in certain respects, this is evident in the field. The Consultants were informed, for example, that many societies had not prepared constitutions,which are an essential part of cooperative procedure.

Other specific points include the following:

- TDCU are asked to look again at their policy of operating branch retail outlets and consider the views of local societies.
- TDCU appear to have got themselves and the societies in a difficult position over the setting of fixed prices when buying farmers' surplus produce and the rigid calculation of margins as the crop moves from the society to the TDCU store and possibly back again, when the same product is sold a few months later at vastly increased prices. Means have to be found whereby societies keep a proportion of their surplus in their own stores or at TDCU branch stores until the hungry period, to be sold to members at prices which merely reflect the original cost plus the additional real costs incurred. Society members need to be aware of alternative courses of action than simply selling all procurements directly to the TDCU. If, for example, traders offer higher prices, it could be in the societies' interest to sell to the trader.

- The TDCU should encourage local initiative at primary society level by negotiating local contracts for work to be done on behalf of the Union. For example, if the TDCU wants to arrange for the distribution of commodities from a regional store to one or more local societies, this could be done by local people, preferably those belonging to a society, who have an ox- or donkey-drawn cart.

- The current arrangement for primary society elections is that they are held every two years, when there is a ballot for all the seats on the committee. It is recommended that this system should change to annual elections for half the seats on the committee. Such a strategy would provide a degree of continuity of expertise and experience because there would always be some committee members with at least one year's service. It would also ensure that where a committee was inactive and stifling the society's activities, the members would have a chance to change some of the members much earlier than is currently possible.

- On a number of occasions the proposal for a Cooperative Bank was mentioned, both in the context of TDCU and as a Regional entity. Whilst the absence of banking facilities is a real drawback, the Consultants do not believe TDCU is capable of handling any more responsibilities at present. There is, however, no reason why TDCU should not improve its present handling of societies' deposits, and develop a system whereby interest is made payable. As TDCU matures, such a system could, in the future, form the basis for a bank.

- Societies do not appear to have come up with many new ideas for generating business, relying heavily on retailing, marketing of farmers' produce and milling, with a few ventures into carpentry, a bus company and ox-cultivation. New ideas are needed and if the proposed Technology and Business Development Unit does materialise close links should be formed between societies and potential societies and the unit. Several groups of shopkeepers, for example, expressed interest in the cooperative ownership of a vehicle, mention was made of a gold-mining cooperative at Kit, and of another in Acholi to produce vegetables for transport and sale in Juba. Societies with stores could, during times of spare capacity, hire out storage space to shopkeepers.

10.10 REFUGEE INTEGRATION

The Consultants were informed at the outset of their study that NCA policy was to encourage the Ugandan refugees to stay in Sudan, on the grounds that their presence was likely to have a beneficial impact on the local economy. This conflicts somewhat with the general UNHCR policy that the long term objective is that refugees should return to their homes when conditions are suitable and when the refugees want to move.

With the political situations in Uganda and Sudan being so volatile, it is impossible to predict what the likely future situation will be. The Consultants are convinced that if peace were to prevail, many of the refugees would return. Most of them believe they could return to their traditional homelands. The general opinion is that, despite the turmoil over the past decade and more, there are many advantages of living in Uganda rather than in Southern Sudan. People still, for example, travel from Sudan to Uganda for hospital treatment. Although many would return, given that a high percentage of the refugees are Madis and that the national boundary is of little significance in many minds, it is quite likely that others would stay, if their future prospects looked bright. The factors which would be uppermost in their minds would be the availability of good land, a good market for agricultural produce, employment and business opportunities, availability and quality of education and health facilities, their acceptability by the local people and by Equatorians generally and the overall security situation.

Regarding the availability of land and their acceptability, there are likely to be few problems. The long term prospects of good markets for agricultural produce are not too good, unless diversification into other crops, such as cotton, takes place. Outside agriculture, prospects for employment and business are somewhat limited. Concerning health and education services, the outlook is rather bleak; although present conditions are poor the area is already very significantly better served than elsewhere in the Study Area. When UNHCR and other agencies withdraw from the area, it is unlikely that Government will maintain present standards; it would be unacceptable, politically, to perpetuate the wide disparities between areas.

From an economic viewpoint, the continued presence of refugees who are able to make a net positive contribution to the local economy by producing agricultural surpluses should be encouraged. There are unutilised land resources and their presence should not conflict with the interests of the

indigenous people. There is little evidence, however, that the refugees can contribute anything in terms of skills, expertise or capital to the economy that is not already available; the record of skills collected during the NCA census is, in fact, rather disappointing, and apart from a few vehicles it is thought that few refugees arrived with any significant amounts of capital assets or money. The Sudanese Madi have themselves been refugees in the recent past, have been exposed to similar economic conditions and education facilities as the refugees and are already proving themselves capable of making a positive contribution to the development of the Study Area. Whilst in no way discouraging refugees from staying in Sudan, the Consultants do not believe that special efforts should be made to attract them to stay, on the grounds that they will provide a catalyst for economic development.

NCA should continue to provide the general support to refugees which it extends to local people (e.g. agricultural and cooperative extension) and when a refugee has indicated, clearly, his or her intention of staying, more individually focussed benefits such as loan facilities can be provided.

10.11 WOMEN'S PARTICIPATION

Whilst for some time NCA has expressed its desire to increase the numbers of female staff and to pay particular attention to the needs of women in the Study Area, progress has been slow and low-key. Very recently, more positive demands for action have been made, coinciding with increased emphasis being placed by NORAD on the same issue. During the Consultants' visit, a Women's Development Office was created within the NCA structure, to monitor and promote women's participation and interests.

Whilst it is outside the Consultants' experience to analyse the background to this issue, it is evident in NCA and the Study Area that the role of women in major decision-making is generally insignificant and that an unfair share of the labour burden falls on women's shoulders. This is not very surprising in a society which purchases wives and where education levels are very low generally and are particularly so for girls.

Improved education for all, and particularly for girls, is clearly the main solution to the problem in the long term, and NCA should constantly bear this in mind when making decisions about education (e.g. as it is when allocating places at the Arapi Teachers Training Centre). In the shorter term the solutions are not so easy to find. With the Agricultural Project, for

example, no suitable female candidate has been refused employment during the past few years, and yet because so few women have the appropriate qualifications, total female employment is very small. NCA is then faced with the option of taking on male staff or of reducing entry requirements for females. The latter option is not generally recommended as such staff are often incapable of carrying out their duties properly and, thus, do not command the respect which a competent person would. This does little to enhance the status of women and, to some extent, this may be happening in NCA at the present time. It would seem to be a better approach to discriminate positively towards women by giving them priority when selecting candidates for training.

Concerning the betterment of women in the rural areas, past attempts do not appear to have been very fruitful, although there are some positive signs. In terms of assisting women to gain a little economic independence, the weaving programme has been rather successful, although it appears that few people are aware of this. Other attempts through the Family Life programme have been made, but success has been limited. The Consultants believe, as they mentioned in their last report, that this unit is not being given sufficient emphasis within NCA's overall programme. It still lacks properly qualified leadership and is not enjoying a stable or effective position within NCA's structure. If women's development is to make any progress it is imperative that this unit is thoroughly reviewed and given substantially more support.

Regarding the reduction of women's labour burden there are some beneficial things happening; ox-carts are reducing labour input in firewood, water and agricultural produce transport; wells have also eased the water collection burden and grinding mills are reducing the effort expended on hand-grinding. On the other hand, the introduction of ox-ploughs has increased farm sizes and, as a consequence, has increased the weeding burden falling on the women. The introduction of ox-drawn weeders is thus very important. Such a move not only has the benefit of reducing the labour required but can break traditional customs by shifting the weeding responsibility from the women to the men. Further attempts should be made to identify where a change in technology might assist in breaking the traditional sex-related labour patterns. One possible example might be the construction of improved houses, using bricks or blocks rather than mud.

The Consultants are somewhat surprised that nothing is being done about adult literacy, and indeed there are no data on the subject. The Catholic Church is introducing such a programme into the activities of the Multipurpose

Centre at Kapoeta. NCA should discuss this with them and consider the possibility of introducing an adult literacy programme.

10.12 TECHNOLOGY DEVELOPMENT AND SMALL-SCALE BUSINESS PROMOTION

10.12.1 Introduction

The Consultants are of the opinion that NCA should either take on technology development and business promotion as a fully integrated and properly staffed venture or leave it alone. Assistance in such fields is only effective if all aspects are professionally catered for. Unfortunately, many organisations and individuals believe that they can handle such activities and the developing world is littered with failed enterprises of this nature. Equatoria is no exception.

If NCA were to embark on such a venture, and this is by no means certain in the present political climate, it is possible it would be found that the organisation so created would, in the early years, be somewhat under-utilised, if it were to confine its interests to the Study Area alone. It is suggested, therefore, that NCA should consider the possibilities of taking on interests outside the Study Area in order to make full use of the organisation's capacity. By so doing, the organisation would benefit through being exposed to the development requirements outside the Study Area, where the local economies are generally more advanced.

For purposes of preparing this report the Consultants have named the proposed organisation the Technology and Business Unit (TABU). Its proposed location within NCA's administrative structure is shown in Figure 10.2, whilst its own structure is presented in Figure 10.1.

10.12.2 Aims

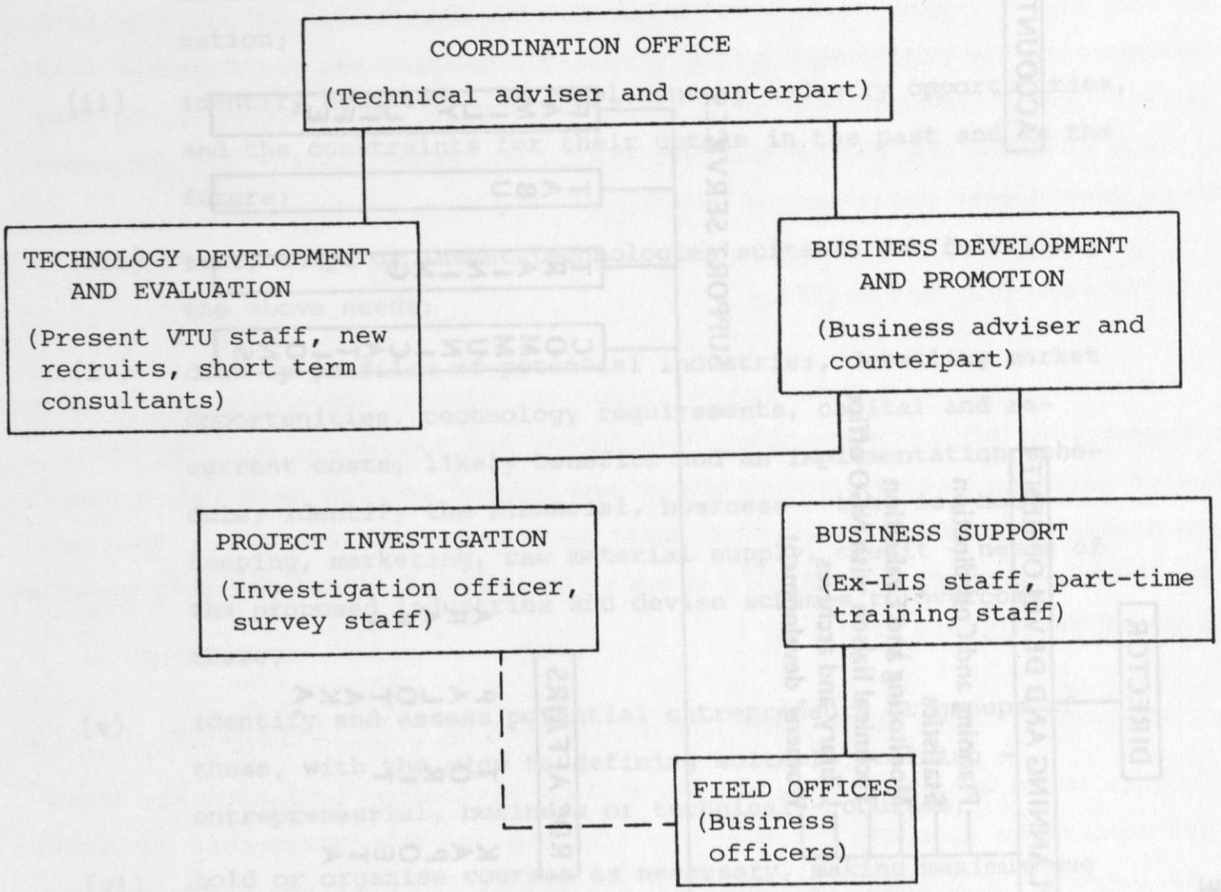
(a) Primary aim

The Technology and Business Unit (TABU) should initially develop a strategy for the promotion of local enterprises which will help stimulate economic activity in the area. Since agriculture is the key sector, the order of priority for TABU's activities should be assistance to promote:

(i) an increase in agricultural production;

(ii) agricultural processing to increase the value added to agricultural produce; and

FIGURE 10.1 PROPOSED STRUCTURE FOR THE TECHNOLOGY AND BUSINESS UNIT



(iii) efficient marketing activities (retail shops, transport) to sell these products.

(b) Secondary aim

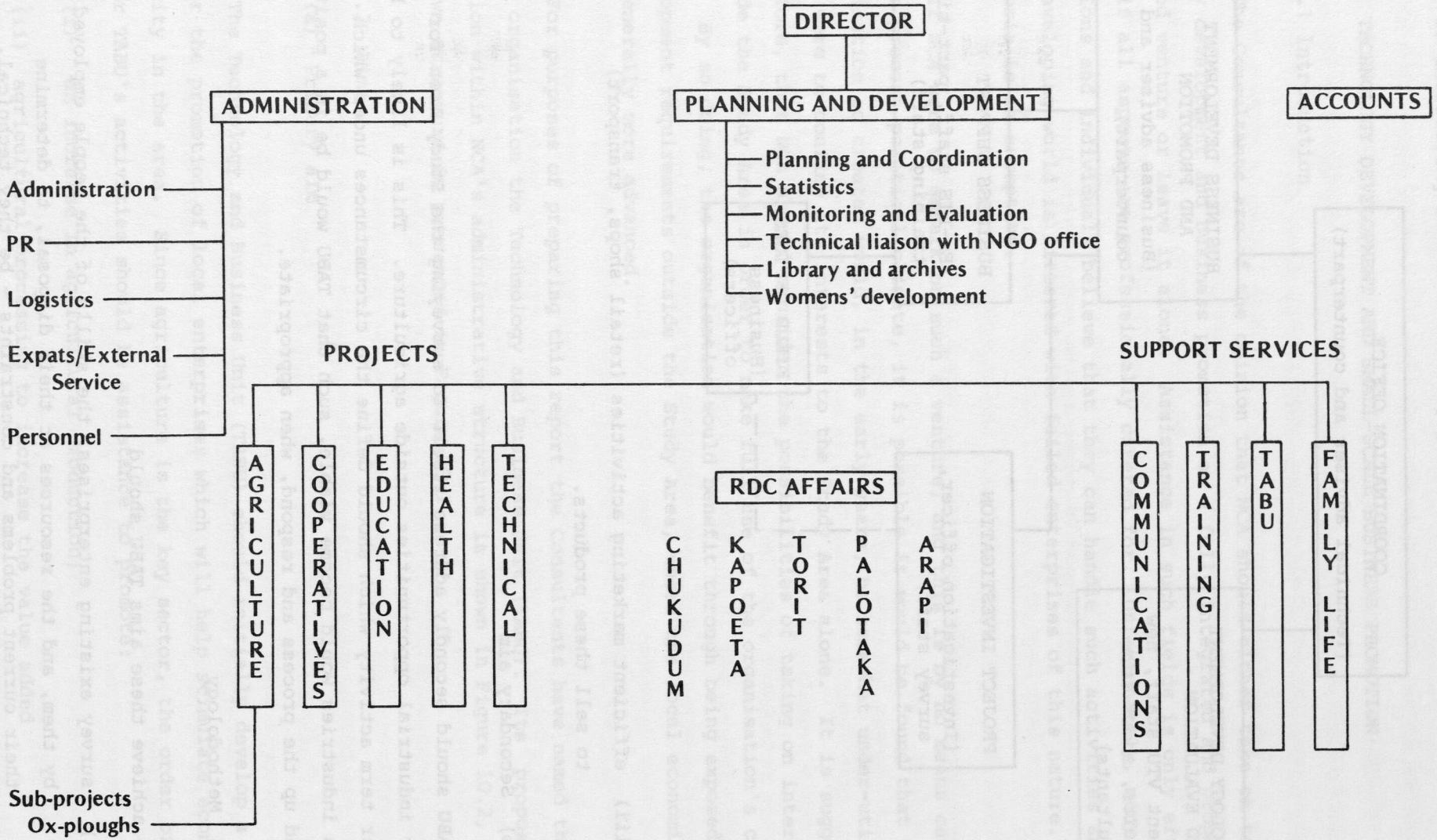
TABU should secondly address itself to surveying the Study Area for further industrial opportunities outside agriculture. This is likely to be a longer term activity which should define the circumstances under which certain industries would become viable, such that TABU would be in a position to speed up the process and respond, when appropriate.

10.12.3 Methodology

To achieve these aims TABU should

(i) survey existing enterprises, the skills of the people employed by them, and the resources at their disposal, to determine their current problems and constraints - be they technical,

FIGURE 10.2 PROPOSED NCA ADMINISTRATIVE STRUCTURE



Source: Consultants HTS.

business, managerial, financial, infrastructural - and determine the potential for future development or replication;

(ii) identify additional or complementary industry opportunities, and the constraints for their uptake in the past and in the future;

(iii) test, adapt or invent technologies suitable for fulfilling the above needs;

(iv) draw up profiles of potential industries, detailing market opportunities, technology requirements, capital and recurrent costs, likely benefits and an implementation schedule; identify the financial, business - that is, bookkeeping, marketing, raw material supply, credit - needs of the proposed industries and devise schemes to overcome these;

(v) identify and assess potential entrepreneurs or groups of these, with the view to defining suitable training - entrepreneurial, business or technical - courses;

(vi) hold or organise courses as necessary, making maximum use of facilities available within NCA and locally;

(vii) monitor similar activities in the Study Area, outside the Study Area in the Sudan and relevant similar institutions in other developing countries;

(viii) further develop the library and liaise closely with other libraries e.g. at the University of Juba and at the Department of Community Development's Support Unit.

10.12.4 Liaison

TABU should liaise with other units in NCA/SP, on a technical level with the projects - Agriculture, Cooperatives and Technical; on a sociological level with the Communication section; on Women's Affairs with the Women's section; on training with the Training Department; and with the RDCs for extension and feedback.

It should develop links with other technology development initiatives in Southern Sudan for mutual assistance and sharing of ideas; as well as internationally with similar institutions.

The Department of Community Development is responsible for appropriate technology development in Equatoria and, as such, should be intimately linked with the Unit. Senior staff were in general agreement that it would be advantageous if key positions, in the proposed organisation, for Sudanese staff should be filled by Community Development appointees on secondment. To make full use of TABU, NCA should consider taking on responsibility for the technology development requirements in areas to the west of the Nile.

10.12.5 Structure and Staffing

The Unit should be headed by a Technology Adviser who would also be directly responsible for the Technology Development and Evaluation section with a team of artisans; and for the Business Development section headed by a Business Adviser. Within this section would be a Project Investigation Team and a Business Support Team leading a group of Regional Business Officers based at the Rural Development Centres.

(a) Technology, Development and Evaluation Section

This would encompass the present Village Technology Unit, but its staff would need to be upgraded by selective training and new appropriate equipment installed for the design, building and evaluation of prototype technologies. These may be existing technologies which require adaptation for the Sudanese conditions, or new developments. The unit should evaluate them for suitability and acceptability to ascertain if they are a significant improvement over the present methods or provide a significant advantage. This should be initially at Hilieu, then through the RDCs for wider acceptability tests. The technical team should be mobile to assist with extension and field trials.

For successful technologies and the upgrading of skills, this section should devise and implement (if necessary through the training department) training courses to assist the production, operation and/or maintenance of the technology.

It is envisaged that short-term consultancy visits will be necessary to inject new skills, attitudes and ideas into this section for wider dissemination.

Table 10.4 gives an indication of the fields of investigation which the Consultants consider to be of particular significance.

TABLE 10.4 RECOMMENDED ACTIVITIES FOR TABU

	Blacksmithing	Carpentry	Tinsmithing	Tanning	Brickmaking	Sugar processing	Tile-making	Block-making	Oil-expelling	Charcoal production	Gold mining	Net making	Lime production	Hydropower	Soap making	Shoe making	Agricultural tool production	Agro-processing Equipment	Cotton processing
Initial approach through:																			
(i) Literature review				X	X			X	X		X		X	X	X	X	X	X	
(ii) Short term consultancy	X		X		X		X				X		X		X	X			X
(iii) Study visit	X			X		X							X		X		X	X	
(iv) Local survey						X					X		X	X					
Likely technology development scenario																			
(i) Upgrading existing activity	X	X	X	X	X	X				X									
(ii) Evaluation of known technology			X		X	X			X	X		X					X	X	X
(iii) Development of known technology								X							X				
(iv) Experimentation				X			X	X	X		X		X		X				
(v) Artisanal training	X	X	X	X											X				
Likely important business aspects																			
(i) Raw materials supply	X	X	X	X		X			X			X	X		X	X	X	X	X
(ii) Market assessment		X		X	X	X	X	X	X			X		X	X	X	X	X	X
(iii) Above-average risk						X	X		X					X		X	X	X	X
Priority																			
Short term (1)	1	1	1	1	1	1	1		1										
Medium term (2) 2 - 5 years						2	2	2		2	2	2	2	2	2				2
Long term (3) 5 - 10 years											3				3	3	3	3	3

Source *HTS/ITDG.*

(b) Business Development Section

This section will be under the Technical Adviser, but headed by a Business Adviser. It will have two sub-sections: a Project Investigation Team to identify and evaluate business potential; a Business Support Team to assist existing businesses and those identified by the Project Investigation Team. This latter sub-section will encompass the present Local Initiative Support scheme (suitably renamed) and administer the loans through a team of regional business officers at the RDCs who will monitor the business, provide advice and collect loan repayments. This will help identify ailing businesses at an early stage and provide assistance as necessary.

It would organise training in all aspects of business management and should work, in this respect, closely with the Cooperative Training Centre and the RATC.

(c) Staffing and skills

The following staff and required backgrounds are suggested:

Technical Adviser - expatriate with appropriate technology and small-scale industries experience in developing countries, with a proven record of competence;
- counterpart, ideally with an engineering qualification.

Business Adviser - expatriate with small-scale enterprise development and evaluation experience in developing countries;
- counterpart, ideally with an accountancy or economics qualification.

Technology Development and Evaluation Head - present Head of VTU.

Blacksmiths, Carpenters, Saddlers - existing sheet metal worker, tanner, technology evaluator - new, with basic artisanal training/experience.

Project Investigation Team - one with accountancy/economic training and experience with survey assistants.

Business Support Team - one or two at Hilieu with accountancy/economic/credit training and experience;
- one at each of Arapi/Palotaka, Torit, Kapoeta/Chukudu with accountancy/economic/credit training.

On the job training will be provided by short-term consultancy visits in the various disciplines mentioned above, with additional entrepreneurship development for the Business Support Team.

(d) Staff development

The success of TABU will depend on the ability of the Technical Adviser and the Business Adviser. Both positions will require imagination, innovation and a multidisciplined approach to put the Unit on to a firm footing and to give guidance and inspiration to the workforce within it.

Depending on the experience and qualifications of the people chosen it is recommended that these two people with their counterparts conduct a study tour of similar institutions within Africa to obtain first-hand knowledge of their activities and problems, but also to develop contacts which may prove useful in the future operation of TABU.

The recommended institutions are as below:

Rural Industries Innovation Centre (RIIC)
P/Bag 11, Kanye
Botswana
has a village industry programme giving support to blacksmiths, carpenters, tanners and bakers, plus numerous other activities.

Development of Malawi Traders' Trust (DeMaTT)
PO Box , Blantyre
Malawi
has a business extension service and more recently technical advice service to small-scale businesses in retailing, service and manufacturing.

Technology Consultancy Centre (TCC)
University of Kumasi
Ghana
has a technology development and service support to urban and rural enterprises.

If suitable organisations exists there, Kenya would be a natural choice for study visits. Unfortunately, despite, or perhaps because of, the vast number of organisations operating there, in the Consultants' opinion, few stand out as being very impressive. Organisations which might be of some relevance include the following:-

World Education Rural Enterprise Program,
PO Box 39312, Nairobi. Phone 720156 x 51.

Friedrich Elbert Foundation,
PO Box 59947, Nairobi. Phone 748338/9.

Technoserve Inc.,
PO Box 14821, Westlands. Phone 743628/9.
Nairobi.

10.13 NCA STRUCTURE

The new structure, presented in Figure 7.1, is, in the Consultants' view, not entirely appropriate and requires modification. This suggestion is made reluctantly as the NCA Programme has already been subject to more than enough disruption and any additional changes will only further confuse, in the short term. The Consultants' proposed structure is given in Figure 10.2. The essential difference between the existing and proposed structure is that a planning, monitoring and evaluation function has been placed between the Director's office and the five Project Coordinators and the Assistant Director for Field Implementation's offices. The Consultants believe that planning requires more emphasis than is currently the case.

It is appreciated that during the time of the Consultants' visit, the situation was somewhat abnormal, with senior Sudanese staff having only recently been appointed and expatriate staff not able to give their full attention to their work because families were living in Nairobi. Notwithstanding these peculiar circumstances, the Consultants believe that the programme lacked cohesion, particularly with regard to its development function. With a programme of this size it is impossible for a director to handle all the responsibilities expected of him and to give sufficient attention to development planning, even though he is supported by coordinators' meetings or the establishment of temporary planning groups as is the case with the formulation of the 1987-1990 plan.

The formation of this new office does not imply that planning functions should be taken away from the individual projects. The purpose of the office is to coordinate the activities of the various projects and support services, to assist where necessary and to keep a careful watch on them.

Planning is not a strong feature of Regional Government and NCA have the responsibility of giving a good example in this respect.

Liaison with Government departments and the activities of other agencies is another important aspect which has not been particularly well covered in the past; this should be another function of this office.

An essential element of planning is data availability. This element is sadly lacking in the Programme and requires urgent attention. There is a substantial amount of information available on many aspects of NCA's past activities, but it is generally rather difficult to obtain this. Furthermore, there are some vital aspects where data are unavailable (for example, present areas of agriculture). One function of the planning section must be the organisation of statistical information.

NCA already has some experience of evaluation, with teams of observers and consultants visiting the Programme from time to time. These activities were supplemented in mid-1985 by a self-evaluation exercise. It is suggested that the time has now come for the Programme to institute its own monitoring and evaluation activities.

If the principle of a planning section is acceptable it is suggested that slight changes are made to the role of the Assistant Director for Field Administration. It is recommended that the present four non-RDC activities are removed and that full attention be placed on RDC affairs. Because of their geographic remoteness, there is a real danger than RDC administrators would be partially excluded from the decision-making.

With regard to the four non-RDC activities currently under the responsibility of the Assistant Director for Field Administration, it is recommended that Personnel be placed under Administration, Communications, Training and Family Life retain their separate identities and fall under Planning and Development, LIS becomes part of the Technology and Business Unit (TABU) and the Women's Development Office becomes an integral part of Planning and Development.

Appendices

APPENDIX A

TERMS OF REFERENCE

The NCA/SP has completed two years of its third four-year programme in Eastern Equatoria and is preparing a fourth four-year programme from 1.1.87.

The localisation process of services rendered by NCA/SP is hampered by the slow economic growth of the area. Also the agriculture development has still not reached self sufficiency.

The consultant is asked to:

1. Evaluate the present economic status in the private and public sector of the area.
2. Identify social and economic bottlenecks hindering economic growth.
3. Propose a plan of action within the possibilities of NCA/SP to attack these bottlenecks.
4. Consider special aspects as to the integration of refugees into the development of the area with the aim of termination of special support by 1.1.87. and integration into the general development programme of the area.
5. Work in close contact with NCA/SP staff as to disseminate the information and ideas of the study to the people directly concerned.

The Agency will:

1. Support the consultant with transport, housing and food.
2. Make available all relevant information within NCA/SP.
3. Provide counterpart Sudanese staff to follow the consultant in the field.

Suggested time of completion of draft 1.6.85, final report 15.7.85.

(Note: Due to security problems the study was delayed by around eight months).

APPENDIX B

PERSONS CONTACTED (outside NCA)

Regional and Local Government

Mr R. Romano	-	Director of Roads
Mr Santo Olaa	-	Inspector for Community Development
Dr Mark Zangabeyo	-	Director of Labour
Mr W.J. House	-	ILO Population and Labour Adviser, Director of Labour
Mr Reme Oler	-	Commissioner for Finance and Economic Planning
Mr Duku H. Loreden	-	Director of Planning, Dept. of Finance Directorate
Mr M. John L. Kuron	-	Deputy Director (Geology), Directorate of Industry and Mining
Mr Omer Pitia	-	Acting Head, Dept. of Industry, Directorate of Industry and Mining
Dr Henry Waure	-	Inspector of Industries, Directorate of Industry and Mining
Mr Raphael L. Davidson	-	Inspector for Commerce, Directorate of Commerce and Supply
Mr Samson Kwaje	-	Director-General of Agriculture
Mr Stephen Gaga	-	Asst. Director-Statistics, Directorate of Agriculture
Mr Caesar Mori	-	Deputy Director of Agriculture
Mr Peter Nelson	-	ODA Extension Advisor, Directorate of Agriculture
Mr Augustino Aremo	-	Director-General of Cooperatives
Mr Michael K. Androgo	-	Asst. Director-Planning Budget, Directorate of Cooperatives
Mr B. Yanga	-	Director, Population Census Office
Mr Anania L. Murra	-	Acting Director, Housing and Construction
Dr Levi Sebit	-	Deputy Director for Animal Health
Mr Patrick Madi	-	Deputy Director for Animal Production
Mr Emmanuel Lita	-	Senior Hides and Skins Officer
Mr Gabriel K. Bassa	-	Director of Fisheries
Mr Sawala Laki	-	Deputy Director of Fisheries
Mr Justin Latio	-	Acting Director of Forestry
Dr Stanley Ambanjaro	-	Director General of Health
Mr Marko Nono	-	Establishment Officer, Directorate of Health
Fr Augustino Oboma	-	Director, Senior and Intermediate School, Directorate of Education
Brig. Charles Acire	-	Director-General of Wildlife
Brig. Edward Eyobo	-	Administrator, Directorate of National Parks and Wildlife
Dr S. Jambo	-	Chairman, NGO Coordinating Committee
Mr Escarino Asai	-	Chief Executive Office, Torit Area Council
Mr Charles O. Augustino	-	Asst. Price Control Officer, Torit
Mr Caesario Oduro	-	Fisheries Extension Officer, Nimule
Dr Isaac Alcardo	-	Veterinary Officer, Torit
Mr Luka Bento	-	Chairman, Kerepi I Settlement Committee
Mr Nicholas O. Kofu	-	Chairman, Ame West Settlement Committee
Mr Bantel Mori	-	Director of Community Development

Other Government Offices and Parastatals

Mr Oboy O. Itorono	- Asst. Director of Training, Regional Accountancy Training Centre, Juba
Mr M. Manseguiao	- Univ. Lecturer, Regional Accountancy Training Centre, Juba
Mr Emphraim L. Piya	- Financial Controller, Imatong Forestry Co.
Mr Stewart M. Togo	- Personnel Manager, Imatong Forestry Co.
Mr Angelo Dayu	- Acting Manager, Agricultural Bank of Sudan
Dr Amin Julla	- Chairman, Equatoria Development Corporation
Mr Aggry Tisa	- Director, Research and Development, Equatoria Development Corporation
Mr Ejidio	- Foreman, Parajok Farm, Equatoria Development Corporation
Mr Dan E. Kure	- General Manager, Equatoria Materials and Construction Company
Mr Henry Ojinga	- Acting Director, Multipurpose Training Centre
Mr A. Gurung	- ILO ADVISER, Multipurpose Training Centre
Mr Trevor Walker	- Manager, Upper Talanga Tea Project
Dr Venusto Wani	- Deputy Manager, Upper Talanga Tea Project
Mr Mateh Mori	- Asst. Mill Manager, Kalisoni Sawmill
Mr Ezekiel Owale	- Asst. Proj. Manager, Project Management of Refugee Affairs
Mr Mohammed Abdul Noor	- Sub-Manager, Unity Bank, Juba
Mr Dominic K. Lado	- Principal, Torit Secondary Technical School
Mr Pascal P. Apiko	- Principal, Afoye Technical Training School

Agencies

Miss Margaret O'Keefe	- UNHCR
Mr Terje Tvedt	- UNHCR
Mrs Anita Suleiman	- Director, Euro-action Accord
Mr Peter Waters	- Technical Office, Euro-action Accord
Mr Nicholas Hall	- Consultant, Euro-action Accord
Mr Martin Myhren	- Project Manager, Norwegian Association for the Disabled
Mr M. James	- Teacher, Juba Day Secondary School (TISG)
Mr Wani Sule	- Principal, Amadi Community Development Institute
Mr E. Sutton	- Deputy Res. Rep., UNDP
Mr T. Howick-Smith	- Deputy Res. Rep., UNDP
Mr Shun-Ichi Murata	- Asst. Res. Rep., UNDP
Mr Peter Burgess	- Consultant, UNDP/UNHCR
Mr B. Haines	- British Council
Dr Stafford Head	- TDRI Oil Processing Specialist (Yei)
Mr Thomas P. Kedini	- Principal, Lainya Vocational Training Centre
Mr David H. Seager	- Advisor, Lainya Vocational Training Centre
Mr R. Bielen	- Rural Credit Consultant, USAID
Prof. F.A. Rhodes	- Department of Economics and Administration, University of Juba
Dr K.H. Philips	- Lecturer, University of Juba
Miss D. Rosenberg	- Librarian, University of Juba
Bishop Paride Taban	- RC Bishop, Torit Diocese
Father Tom McDonnell	- Administrator, Torit Diocese
Father John Garry	- Palotaka Mission and Farm

Businessmen/Cooperatives

Mr Mohammed El Haj	- Businessman, Juba
Mr Kishor P. Sheth	- Proprietor, Nilestar Trading Agency
Mr Michael Greany	- Manager, Interfreight (Sudan) Ltd
Mr Shyam Kumar	- Manager, Amit Drinks and Ice Factory
Mr Mathew O. Ajak	- General Manager, Haggar Group of Companies
Mr Venusto O. Zira	- Businessman, Nimule
Mr Rufino Golebe	- Businessman, Pageri
Mr Paulino Ngijock	- Businessman, Obbo
Mr Roman Ali	- Businessman, Opari I
Mr Joseph Okech	- Businessman, Parajock
Mr Martin Botel	- Chairman, Opari III Cooperative Society
Mr Carlo Patricio	- Businessman, Ikotos
Mr George	- Businessman, Ikotos
Mr Salah Lokuk	- Businessman, Ikotos

APPENDIX C

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