



CF/RAI/NYHQ/DPP/RAM/2004-00242

Expanded Number **CF/RAI/NYHQ/DPP/RAM/2004-00242**

External ID

Title

**OLS Operation Lifeline Sudan. A Review. (6/6) . Ataul Karim, Team Leader. July 1996. First comprehensive review of OLS, funded by donor governments and supported by UNDHA, UNICEF as lead agency. 300 plus pages.**

Date Created  
28-Sep-2004 at 4:56 PM

Date Registered  
28-Sep-2004 at 4:56 PM

Date Closed

Primary Contact  
Owner Location  
Home Location  
Current Location/Assignee

**Record & Archive Manage Related Functions=80669443**  
**Record & Archive Manage Related Functions=80669443**  
**At Home Location: Record & Archive Manage Related Functions=80**

F12: Status Certain? **No**  
F13: Record Copy? **No**

d01: In, Out, Internal Rec or Rec Copy

Contained Records  
Container

Date Published      Fd3: Doc Type - Format      Da1:Date First Published      Priority

Record Type **A01 DPP-RAM ITEM**  
Document Details **Record has no document attached.**

Print Name of Person Submit Image

Signature of Person Submit

Number of images  
without cover

Upasana

30

Byline



DEPARTMENT OF HUMANITARIAN AFFAIRS

TERMS OF REFERENCE  
FOR AN  
OPERATION LIFELINE  
SUDAN (OLS)  
REVIEW

18 August 1995

## INTRODUCTION

Operation Lifeline Sudan is a programme of humanitarian assistance implemented by UNICEF, WFP and more than 40 national and international NGOs, and designed to meet the needs of war-affected civilians, particularly women and children.

OLS operates under a unique agreement with the parties to the conflict which establishes the foremost humanitarian principles of OLS: neutrality, transparency and accountability. This enables it to operate in both Government and rebel-controlled areas.

Overall responsibility for the coordination of OLS falls on the UN Department of Humanitarian Affairs. OLS leadership is provided by the UN Resident Coordinator in his DHA capacity as UN Coordinator for Emergency Relief Operations in the Sudan, based in Khartoum. The southern sector programme, which delivers assistance cross-border into Sudan, is headed by the OLS Coordinator-Nairobi. In 1993, the UN Secretary General appointed a Special Envoy for Humanitarian Affairs to the Sudan who reports to DHA and whose primary responsibility is to facilitate negotiations on access for humanitarian assistance.

Since 1989, when OLS began as a short-term programme to deliver food and provide other inputs to save lives, it has developed considerably. While still providing food aid and basic health care to reduce mortality and morbidity amongst affected populations, OLS now implements a much broader programme that extends to household food security, water and sanitation, basic shelter, primary education, support to psychologically traumatized children, capacity building and promotion of humanitarian principles.

With wide access to a war-affected population of approx. 4.25 million and a combined UN agency financial requirement of USD 101 million for 1995 alone (not including an equal or greater sum channelled through international NGOs), OLS now reaches more people than ever before. Originally serving some eight sites in southern Sudan, DHA-led negotiations have expanded access to over 100 locations. Concurrently, during the life of OLS significant changes have taken place within the UN system, e.g. the establishment of DHA, the evolution of greater emphasis on protection issues in the context of civil strife. As a consequence of these changes, the OLS structure and operating mechanisms have expanded enormously, with greater

numbers of field staff and ever-more extensive systems for programme coordination, monitoring, logistics, security and radio communications.

OLS was given a unique mandate when it began: for the first time ever, a sovereign government allowed the delivery of humanitarian assistance to rebel-controlled areas. In recent years, the increasing number of complex emergencies throughout the world has seen the UN intervene in ways which have extended the boundaries of humanitarian assistance. However, within the international community, there is still considerable divergence of opinion on how best to deal with complex emergencies.

The chronic emergency in the Sudan and the UN's unique response, set against the global backdrop of increasing emergencies and dwindling aid budgets, indicate the need to take stock and to review the development of OLS. This idea has been supported by many donors in recent consultations, while the Government and rebel movements have concurred with the proposal. A detailed, critical and analytical review of OLS, its achievements and failures, will therefore take place in 1995. This review of OLS will have its main objectives:

- I. To analyze the OLS mandate, its appropriateness in creating maximum access to populations in need and in ensuring respect for fundamental humanitarian principles.
- II. To assess the effectiveness of OLS' coordination structures, in particular the relationship between the UN, donors, NGO and Sudanese counterparts.
- III. To assess the efficiency of OLS' modus operandi, identifying constraints and achievements of OLS' various activities in:
  - the provision of appropriate, timely and cost-effective relief assistance to populations in need;
  - the provision of programmes contributing to the promotion of self-sufficiency and food security;
  - the efficiency of OLS operational support to programme delivery.

It is expected that the review will refer to previous reviews/evaluations of OLS, including various sectoral analyses, and see to what extent lessons learned have been undertaken and implemented. It will also propose, where applicable, improved strategies for OLS, particularly in the areas of:

- programme design
- coordination mechanisms
- cost-effectiveness
- promotion and protection of humanitarian principles
- systematic monitoring

The review will suggest lessons that might be learned from OLS by other humanitarian assistance programmes in complex emergency situations.

## **TERMS OF REFERENCE (TOR)**

The relationship between the creation of humanitarian space and the flow of assistance to war-affected populations is the basis of OLS and hence the main focus of this review. Therefore the team will not be expected to undertake a detailed analysis of the impact of OLS programmes, but rather to review the effectiveness of its modus operandi in meeting the needs of war-affected civilians.

### **Mandate, Principles and Structure**

#### **Mandate and Principles:**

What are the factors which have contributed to, or impeded, OLS in the fulfilment of its mandate to provide humanitarian assistance to all in need in a neutral, impartial and transparent manner?

Is there a consensus among the following groups regarding OLS's mandate and principles and their translation into operational procedures and modalities?

- Government/SPLM/SSIM
- International NGOs
- Affected populations
- Donors
- Local NGOs and other community groups

How has OLS benefitted from or been restricted by adherence to its mandate and basic principles. Are neutrality and impartiality the most appropriate approaches to working in such situations?

To what extent have OLS and the parties to the conflict respected agreements entered into? How have the modalities of negotiated agreements contributed to the success of the OLS operation? What has been the contribution of the UN Special Envoy?

Is OLS making the best use of all possible channels to increase access to populations in need?

Within its existing mandate, is OLS doing enough to ensure that humanitarian assistance reaches its intended beneficiaries? What strategies has OLS developed to address breaches of humanitarian agreements and ground rules relating to OLS?

What could have been done to increase the effectiveness of the Convention on the Rights of the Child, international humanitarian law and specific resolutions for the protection of war-affected and displaced populations?

What have been the biggest constraints to ensuring accountability to beneficiary communities? How might these constraints be overcome?

### **Structures**

Has the UN's coordination role been defined with sufficient clarity to be accepted and understood by the parties to the conflict, the UN agencies and NGOs?

How has the establishment of DHA and the role of the UN Special Envoy affected coordination and leadership in OLS?

Has the UN provided effective leadership and coordination of OLS through the UNCERO/OLS Coordinator-Nairobi management link?

Has the UN coordinated effectively with NGOs in programme policy-making and implementation?

Have the various coordination mechanisms (letters of understanding, meetings, workshops, field staff) been effectively used for programme implementation and to ensure adherence to the OLS principles?

How could coordination be strengthened/reinforced?

How has OLS been hindered and/or facilitated by: inter UN agency staffing and structures?; by NGO policies and reporting requirements?

Has the mechanism of the consolidated inter-agency appeal proved adequate as a resource mobilisation tool for OLS?



Have donor funding procedures served effectively in responding to OLS programme requirements?

Has the donor community shown a coordinated and effective policy in support of the OLS mandate and fundamental principles?

Has OLS been accountable and transparent in relation to donors?

**Programme Strategy:**

The team will focus on a cross-section of OLS sectoral activities including both conventional relief as well as interventions with a longer-term focus. Within the sectors of household food security, health, education and water, the team will ask whether OLS agencies have succeeded in defining common objectives and achieving them through programmes that most effectively meet the needs of the Sudanese people. Particular attention should be given to the role that these programmes have played in promoting the survival and development of children.

**Identifying Needs:**

Have assessment/monitoring systems contributed to a consensus on the extent and prioritisation of sectoral and geographical needs?

Does OLS have an information collection system adequate to its programme planning needs?

**Coordination Structures and Mechanisms:**

Have the structures and mechanisms created been effective in promoting coordination in programme planning and implementation as well as in making the best use of agencies' comparative advantages? How have these structures responded to rapidly changing field conditions?

**Implementation:**

Has OLS managed to provide levels of assistance, proportioned to need, to war-affected civilians irrespective of their location? To what degree has this

contributed to responding to the total identified needs of all war-affected civilians in the country?

How has OLS responded to the survival needs of accessible populations?

Has OLS achieved a strategic balance of food and non-food assistance with the aim of promoting self-reliance?

What has been achieved in protecting livelihoods and promoting self-sufficiency?

Has OLS sufficiently emphasized capacity building and sustainability in programme planning and implementation?

### **Gender:**

How have OLS programmes reflected the primary role of women in the maintenance and restoration of family and community life?

### **Delivery of Assistance: Strategies and Cost-Effectiveness**

At the outset of OLS, the strategy for the delivery of assistance to serve war-affected civilians was established. With respect to logistics, cost-effectiveness and the practicalities of ensuring neutrality in a conflict, the cross-border operations serve SPLM areas and in-country operations serve GOS locations. In the intervening years, rail and river corridors opened, permitting cross-line deliveries to take place from within the country, while access to GOS areas by cross-border operations also became an accepted option. At the same time, safe and effective road access has declined, forcing continued reliance on expensive but secure air transport services.

Have these changes influenced the original rationale of delivery based on cost-effectiveness and logistical practicality?

Has OLS done everything possible to reduce operational costs by taking advantage of opportunities for new delivery modalities and access routes?

Have the overall operational and overhead costs been reasonable in relation to

the actual delivery of assistance? How might OLS achieve greater cost-efficiency?

Do the existing conditions permit the greater use of in-country logistic bases?

**Food Aid/Food Security:**

Special focus is given to the area of food aid and food security for two main reasons: food aid represents the most significant area of OLS expenditure; OLS has adopted a strategy that seeks to promote household food security through a comprehensive analysis of both available and potential sources of food. Many of the questions that follow apply to other sectors as well as that of food aid/food security.

- I. Are there clear policies and objectives for the promotion of nutritional well-being and food security?
  - To what extent have food aid and the various household food security interventions (seeds and tools, livestock, fishing) improved the nutritional status, household food security and economic well-being of target groups?
  - How can the criteria developed for the identification of food aid beneficiaries be improved?
  
- II. Has OLS been able to identify needs for food aid?
  - Have the methodologies used each year by OLS and by the joint FAO/WFP crop assessment and food supply missions achieved a clear understanding of the level to which populations have access to food sources and resources?
  - To what extent can standardised monitoring and assessment methodologies be applied by OLS throughout Sudan?
  
- III. Has OLS been able to translate information gathered into appropriate decisions/strategies?
  - How has the information gathering in assessments been used in

decision-making on the allocation and timing of food aid and other inputs?

- Has OLS established effective fora that have allowed all agencies working in the area of food aid and food security to come together with the information required to make coherent and consistent decisions?
- Has OLS/WFP explored alternative uses of food aid, such as food for work, market support, monetization, production support, rather than direct food relief? What more might be done in this area? To what extent has food aid assisted beneficiaries toward self-sufficiency? What have been the constraints in using food aid to promote self-sufficiency?
- Is there evidence to suggest that food aid acted as a disincentive to production or interfered with traditional community level self-help mechanisms?

IV. Has OLS been able to deliver food in a timely and appropriate manner once potential beneficiary populations have been identified? What have been the main constraints?

- With regard to the concern of the donor community over the diversion of food aid, has OLS done enough to ensure that food aid reaches its intended beneficiaries?

**Capacity Building and Empowerment:**

How has OLS ensured that humanitarian assistance enhances local capacities, empowers local populations and provides sustainable initiatives? *r*

What have the parties to the conflict done to permit the establishment and functioning of effective and accountable humanitarian counterparts to OLS? *S*

Has OLS done all it could to promote/support these counterparts? *S*

Have counterparts provided adequate service/support to OLS agencies? *r*

Has the support provided by OLS agencies been appropriate to the capacity building needs of local organisations and community groups?

S

What is being done to promote beneficiary participation in planning and implementation of relief and rehabilitation activities?

R

What impact has this had on programme quality?

Blank

**APPENDIX 2:  
TECHNICAL ASSUMPTIONS IN MODELLING COST EFFECTIVENESS**

**1. Quantities**

In 1995, WFP fielded 23,841 Mt of relief commodities to South Sudan. This figure varies slightly from that used in official WFP reports. The variation is explained by revisions done to WFP databases in March 1996.

**2. Support and Monitoring Costs**

As noted in Chapter 8, support and monitoring costs are assumed to be equal to the sum of grants received for each of these costs categories during 1995. Grant information was taken from the DHA database of grants received by the appealing agencies in 1995. These grants are listed in Figure A.1.

**Figure A.1: Grants to WFP in 1995 (US-\$)**

<b>Project Area</b>	<b>Sector</b>	<b>Amount</b>
Food Monitors	Northern	178,571
Food Monitors	Northern	571,430
Food Monitors	Northern	114,570
Logistics	Northern	2,500,000
Support Costs	Northern	553,350
Food Monitors	Southern	404,000
Food Monitors	Southern	119,048
Food Monitors	Southern	402,875
Food Monitors	Southern	969,000
Logistics	Southern	272,532
Logistics	Southern	235,087
Road rehabilitation	Southern	124,000
Support Costs	Southern	531,000
Support Costs	Southern	560,000
Emergency Food Aid		1,232,860
Logistics		5,000,000
<b>Total</b>		<b>13,768,323</b>

From the above, we have calculated USD 1,644,350 for support costs, and USD 2,759,494 for monitoring costs. WFP is unable to desegregate these costs specifically, but notes that our estimate is "quite reasonable" (McMahon, 1996, May 17).

### 3. Fixed and Variable Monitoring Costs

WFP monitors note that approximately three-quarters of field visits were for assessment purposes, and one-quarter related to distribution. Monitoring costs cannot therefore be suspended, even if no deliveries occur. Conversely, doubling relief quantities will not double the amount of monitoring required. We assumed that 60% of monitoring costs were fixed, and 40% variable. Variable monitoring costs were apportioned to sectors and clusters in proportion to the amount of relief commodities received by each. It should be noted also that the variable cost share of monitoring - 40% - is a generous estimate. In practice, a large part of the relevant budget for monitoring was the cost of expatriates, whose number varies little with the amount of relief commodities delivered annually.

### 4. Value of Commodities

WFP supplied cereals, pulses, and cooking oil as the basic components of the emergency food basket. WFP Nairobi calculated that in 1995, the basket comprised 85% cereals, 12% pulses, and 3% oil, based on weight. A similar breakdown has not been calculated for the Northern Sector. For purposes of comparison and substitution between sectors, the commodity shares indicated for the Southern Sector are used for the Northern Sector as well.

Figures A.2 and A.3 below presents commodity values for Northern and Southern Sectors.

Figure A.2: Northern Sector food basket

Commodity	Weight share in food basket	Value per MT, weighted for import and local purchase	Weighted with food basket
Sorghum	85%	\$ 146.80	\$ 124.78
Lentils	12%	\$ 572.25	\$ 68.67
Oil	3%	\$ 962.25	\$ 28.87
<b>Value 1 MT of average food basket</b>			<b>\$ 222.31</b>

Note: For technical reasons, commodity values for the Northern Sector include Port Sudan ancillary costs for imported commodities; no ancillary costs are calculated for locally purchased sorghum.



**Figure A.3: Southern sector food basket**

Commodity	Weight share in food basket	CIF Mombassa	Weighted with food basket
Sorghum	72%	\$ 180.00	\$ 129.60
Maize	13%	\$ 200.00	\$ 26.00
Pulses	12%	\$ 530.00	\$ 63.60
Oil	3%	\$ 930.00	\$ 27.90
<b>Value 1 MT of average food basket</b>			<b>\$ 247.10</b>

Note: For technical reasons, ancillary costs in Mombassa are absorbed into the Mombassa-Lokichokio road transport rate.

#### 5. Ancillary Costs of Food Imports

With regard to transport costs, Figure A.4 indicates costs that apply to food imports to Port Sudan.

**Figure A.4: Ancillary cost**

Operation	Rate (\$/MT)
Landing	9.75
Shunting	2.50
Warehousing	10.00

As can be seen in this table, USD 22.25 is added to the cost of every ton of food imported to Port Sudan. No ancillary cost is calculated for locally purchased food. Also, all food delivered by the Northern Sector is assumed, as far as transport routing is concerned, to have originated in Port Sudan. This tends to inflate the total cost of locally purchased food, but this effect is almost completely cancelled out by the other assumptions. For Mombassa, ancillary costs are absorbed into the USD 115/MT road transport rate to Lokichokio.

#### 6. Delivery Matrix - 1995 Baseline

Figure A.5 below indicates the pattern and mode of transport, including cluster destination and tonnages, for WFP deliveries in 1995.

**Figure A.5: WFP 1995 relief food deliveries (MT) - sectors and transport modes**

Region	Cluster	Northern Sector				Southern S.		Total
		Air	Road	River	Rail	Air	Road	
Bahr El Ghazal	Northern Bahr El Ghazal					3303		3303
Bahr El Ghazal	Wau Town		230					230
Bahr El Ghazal	Lakes			64		43		107
Equatoria	Western Equatoria surplus zone					4		4
Equatoria	W. Equatoria with IDP camps					20		20
Equatoria	Juba Town	470		854				1324
Equatoria	Eastern Equatoria insecurity zone			245		187	583	1014
Equatoria	Eastern Equatoria drought zone						2272	2272
Upper Nile	Jonglei war zone			594		1430		2024
Upper Nile	Pibor Pochalla area					82		82
Upper Nile	Western Upper Nile war zone			497		377		874
Upper Nile	Northern Jonglei factional fighting			430		4296		4725
Upper Nile	Sobat Chotbura war zone					49		49
Upper Nile	Renk Malakal			1050				1050
Transitional Zone	South Darfur		4101					4101
Transitional Zone	Southrn Kordofan		2263					2263
Transitional Zone	Central State		197					197
Khartoum	Khartoum		201					201
<b>Total</b>		<b>470</b>	<b>6992</b>	<b>3733</b>	<b>0</b>	<b>9791</b>	<b>2855</b>	<b>23841</b>

Note: Of the 6992 MT transported overland by the Northern sector, 1,442.6 MT went from Babanussa to Ed Da'ain by train. No cost record was obtained for this operation (The train was to go to Wau and was redirected to Ed Da'ain.). This consignment is treated as road transport as others were to South Darfur, using a end-of-1995 road transport rate.

Note: Of the 6,992 MT transported overland by the Northern Sector, 1,442.6 MT went from Babanussa to Ed Da'ein by train. No cost record was obtained for this, however (the train was destined for Wau but was re-routed to Ed Da'ein). This consignment is thus treated as road transport similar to other consignments in South Darfur, using the end of 1995 road transport rate.

## 7. Transport Substitution Pattern and Overland Transport Rates

Figure A.6 presents the transport substitution pattern used in our optimal-transport model, including calculations for overland transport.

### Substitution table

Figure A.6: Changes of sectoral and transportation modes between the actual 1995 pattern and the optimal-transport model:

Cluster	Substitution	Volume (MT)	Unit Saving (\$/MT)	Savings
Northern Bahr el-Ghazal	Northern Rail for Southern Air	3,303	\$765	\$2,528,027
Lakes	Northern River for Southern Air	43	\$713	\$30,649
Western Upper Nile war zone	Northern River for Southern Air	377	\$652	\$245,830
Sobat Chotbura war zone	Northern River for Southern Air	49	\$533	\$26,256
Juba Town	Northern River for Northern Air	470	\$453	\$212,698
Jonglei war zone	Northern River for Southern Air	1,430	\$434	\$620,926
Northern Jonglei factional fighting zone	Northern Air for Southern Air	4,296	\$338	\$1,453,191
Eastern Equatoria insecurity zone	Southern Road for Southern Air	187	\$209	\$38,931
Wau Town	Northern Rail for Northern Road	230	\$30	\$6,785
Western Equatoria surplus zone	-			
Western Equatoria with IDP camps	-			
Eastern Equatoria drought zone	-			
Pibor Pochalla area	-			
Renk Malakal	-			
South Darfur	-			
South Kordofan	-			
Central State	-			
Khartoum	-			
<b>Total</b>		<b>10,385</b>		<b>\$5,163,293</b>

Note: Ranked by unit savings.

**Cost of overland transport**

**Figure A.6: Overland transport rates**  
 Figures are rates in \$ per metric ton

Region	Cluster	From Port Sudan: Road	From Port Sudan: River	From Port Sudan: Rail	From Mombassa: Road	Remarks
Bahr el-Ghazal	Northern Bahr el-Ghazal			298		"Rail" = Port Sudan - Kosti by road, Kosti - Wau by rail; rate = rate to Wau town. Cost of inland transport from barge drop not included
Bahr el-Ghazal	Wau Town	328		298		Port Sudan - Kosti - Wau; "Rail" = Port Sudan - Kosti by road, Kosti - Wau by rail
Bahr el-Ghazal	Lakes		200			Average of per MT cost of DA2, BZ8 and CL11 barge convoys 1995 incl. primary transport to Kosti. Cost of inland transport from barge drop not included
Equatoria	Western Equatoria surplus zone					No WFP overland deliveries in 1995
Equatoria	Western Equatoria with IDP camps					No WFP overland deliveries in 1995
Equatoria	Juba Town		250			Average of per MT cost of CL11 and BZ8 barge convoys 1995 incl. primary transport to Kosti
Equatoria	Eastern Equatoria insecurity zone		300		205	River = Juba rate plus estimated \$50/MT; Road = \$115/MT from Mombassa to Lokichokkio, plus 150 km x \$0.60/MTkm

**Figure A.6: Overland transport rates (cont.)**  
 Figures are rates in \$ per metric ton

Region	Cluster	From Port Sudan: Road	From Port Sudan: River	From Port Sudan: Rail	From Mombassa: Road	Remarks
Equatoria	Eastern Equatoria drought zone				160	Road = \$115/MT from Mombassa to Lokichokio, plus 75 km x \$0.60/MTkm
Upper Nile	Jonglei war zone		200			As for Lakes
Upper Nile	Pibor Pochalla area					No WFP overland deliveries in 1995
Upper Nile	Western Upper Nile war zone		200			As for Lakes
Upper Nile	Northern Jonglei factional fighting zone		135			Cost per MT of DA2 barge convoy 1995, Tonja - Fanjak. Additional cost to more distant areas not included.
Upper Nile	Sobat Chotbura war zone		169			Cost per MT MN13 barge convoy 1995, Sobat - Chotbura.
Upper Nile	Renk Malakal		110			Cost per MT GR7 barge convoy 1995, Kosti - Malakal
Transitional Zone	South Darfur	88				WFP 1996 estimate, plus \$11/MT NGO tertiary transport
Transitional Zone	South Kordofan	64				Cost per MT to El Obeid, plus \$11/MT NGO tertiary transport
Transitional Zone	Central State	54				To Kosti. Tertiary transport cost not included.
Khartoum	Khartoum	52				

Note: Rates furnished by WFP Khartoum and Nairobi logistics sections, March - April 1996

## 8. Air Transport Distances and Costs

Air distances in nautical miles from Malakal, El Obeid, and Lokichokkio to field destinations were approximated according to the distance between these bases and a central reference location in each relevant cluster, indicated in Figure A.7 below.

Figure A.7: Air distances to a central reference location in each of the WFP delivery cluster areas

Region	Cluster	Reference location	From Lokichokkio	From El Obeid	From Malakal
Bahr El Ghazal	Northern Bahr El Ghazal	Akon	470	296	226
Bahr El Ghazal	Wau Town	Wau	435	352	244
Bahr El Ghazal	Lakes	Thiet	383	339	205
Equatoria	Western Equatoria surplus zone	Nzara	374	522	357
Equatoria	Western Equatoria with IDP camps	Mundri	252	465	261
Equatoria	Juba Town	Juba	170	500	279
Equatoria	Eastern Equatoria insecurity zone	Torit	109	535	309
Equatoria	Eastern Equatoria drought zone	Lolim	31	557	326
Upper Nile	Jonglei war zone	Yomciir	222	396	170
Upper Nile	Pibor Pochalla area	Pibor	166	418	187
Upper Nile	Western Upper Nile war zone	Leer	348	287	118
Upper Nile	Northern Jonglei factional fighting zone	Waat	265	322	87
Upper Nile	Sobat Chotbura war zone	Nazir	261	322	100
Upper Nile	Renk Malakal	Melut	387	200	66
Transitional Zone	South Darfur	Meiram	517	252	239
Transitional Zone	South Kordofan	Abyei	474	239	192
Transitional Zone	Central State	#N/A	#N/A	#N/A	#N/A
Khartoum	Khartoum	#N/A	#N/A	#N/A	#N/A

Note: Distance in. nautical miles Basis: WFP Operation Lifeline Sudan map, measurements and conversion into nautical miles by Review Team

## 8.1 WFP's Estimate of Total Cost of Air Operations

Estimates for the cost of air operations in Sudan in 1995 were provided by WFP Rome (McMahon, 1996, May 21), and are listed in Figure A.8.

**Figure A.8:** Total cost of WFP air operation 1995

	Northern Sector	Southern Sector
Aircraft leases	\$ 715,871	\$ 4,959,568
Support costs	\$ 120,000	\$ 2,902,179
In-kind contribution by ECHO: Begian Air Force C-170 for 7 months		\$ 4,200,000
Sector total	\$ 835,871	\$ 12,061,747

It should be noted that the USD 12.061 million for the Southern Sector does not include indirect support costs. These indirect costs have not been determined.

In 1995, WFP received donor contributions worth USD 8 million for logistics. The shortfall was financed out of "outstanding balances of ITSH (Internal Transport, Storage, and Handling) for 1993/94" (McMahon, 1996, May 21).

## 8.2 Cost Per Mile and Ton

WFP Nairobi provided cost data for "secondary transport" (i.e. by air from Lokichokio) to various destinations in South Sudan. Payload capacity was given as 16.2 MT for C-130 aircraft, regardless of distance. For Buffalo aircraft, payload capacity varied from 6.2 MT to 8.5 MT depending on distance. Using regression techniques, we calculated rates per mile and ton. Because of reduced payload on longer distances, and because of time spent in the drop zone (uniformly 20 minutes per drop), fixed rates had to be replaced by linear equations, as follows:

C-130: Cost (distance;per MT)= USD 1.42/MT \* distance + USD 68/MT

Buffalo: Cost (distance;per MT)= USD 3.39/MT \* distance - USD 61/MT

The intercept is positive for C-130 aircraft because of the drop zone time. It is negative for Buffalo aircraft because of the distance-payload tradeoff.



### 8.3 Calculation of Block Hour Cost

Using the above equations, and inserting the values for a calculation point (for example, for Akon in northern Bahr El Ghazal, distance from Lokichokkio equals 470 nautical miles, payload is 16.2 MT for the C-130 aircraft, and 6.5 MT for the Buffalo aircraft, round-trip time equals 3.9 hours for the C-130 including drop zone, and 4.8 hours for the Buffalo), we calculated the following block hour cost values:

C-130: USD 3,868 per hour  
Buffalo: USD 1,759 per hour

The values we have calculated here roughly agree with those calculated by WFP for secondary transport rates, cited in a recent study (WFP, 1995, August 30), as follows:

"C-130: USD 3,500 - 3,900 per hour, depending on distance (this is because a support charge of USD 1,620 is charged uniformly per flight)".

However, our value for Buffalo aircraft differ considerably from a calculation made by WFP in the same document, as follows:

"Buffalo: USD 2,345 - 2,355 per hour. The variation with distance is slight because a support cost of only USD 50 is charged per flight".

This seems inadequate to us, but we have no other data. We have therefore adjusted our model uses for Buffalo aircraft, by multiplying slope and intercept with the factor USD 2,350/USD 1,759. The resulting equation is thus:

Buffalo: Cost (distance;per MT)= USD 4.53/MT \* distance - USD 82/MT

### 8.4 Cost of Food Transport By Air

Using these cost equations, and assuming 60% of relief commodities were transported by C-130 aircraft, the cost of transporting 10,261 MT is estimated to be USD 10,650,248 or USD 1,038/MT. This is higher than the USD 690/MT for the Northern Sector air transport, and the USD 745/MT for the Southern Sector air transport calculated in the 1995 Consolidated Appeal.

### 8.5 Apportioning the Balance of Air Operation Costs

The total cost of air operations exceeded the cost of airlifting and airdropping by some USD 2.2 million (USD 12.9 million minus USD 10.7 million). Determining the nature and use of this difference is difficult:

\* The value of in-kind services by the Belgian C-130 was estimated by the donor at USD 5 million (Project SUD-95-1/N14), and was re-estimated by WFP as USD 4.2 million. Since the use of this aircraft was affected by the flight ban, it is difficult to determine a commercial value for the same amount of services.

\* UNICEF and NGO air service consumption may have impacted on the WFP cost structure. Although UNICEF called forward USD 7.7 million to support logistics and air transport (from Project N11-B, "Logistic Backstop for all Non-Food Relief Activities from Lokichokio"), cost allocation between UNICEF - which operates the Lokichokio base camp - and WFP - which is responsible for air operations - may not perfectly mirror the cost of all non-WFP versus WFP cargo and passenger movements. The magnitude can be seen by the fact that WFP flew 1,340 MT of non-food commodities out of Lokichokio in 1995.

\* A part of the USD 2.8 million estimated monitoring cost was used for monitoring movements by air. The USD 7.9 million original budget for operational and support monitoring (Projects N16, N17, N18, 1995 Consolidated Appeal, pages 99 and 101) included USD 1.6 million for aircraft lease for monitoring purposes.

We have no data on how to re-evaluate the Belgian C-130 in-kind contribution, or to charge part or all of the USD 2.2. million difference to WFP monitoring, or to services for UNICEF and NGOs. The USD 2.2. million must therefore be seen as an unexplained error term.

## **9. WFP Calculations of Total Operational Cost**

Figure A.9 below presents WFP's own calculation of total operational costs for deliveries in 1995.

### **Figure A 9: WFP's own calculation total operation cost**

WFP Khartoum 3/3/96

as at 31/12/1995

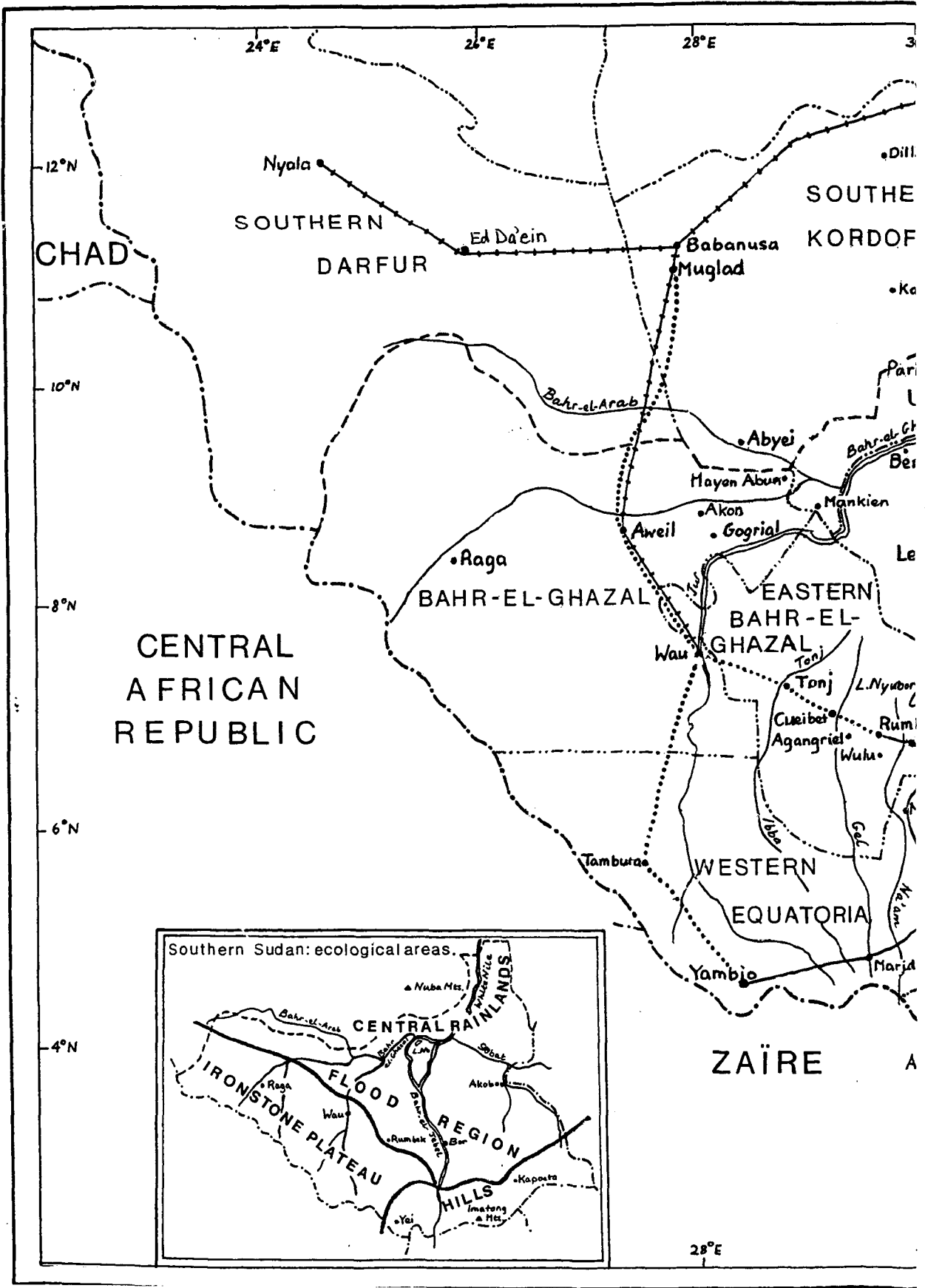
<b>GOS</b>	<b>MODE</b>	<b>TOTAL</b>	<b>C.I.F.</b>	<b>TRANSPORT</b>	<b>TOTAL COST *</b>
		<b>MT</b>	<b>Value \$</b>	<b>Cost in \$</b>	<b>in \$</b>
SUB TOTAL WFP (from Loki)	AIR	273	81,900	218,400	300,300
SUB TOTAL WFP (from Khartoum)	AIR	470	94,000	211,500	305,500
SUB TOTAL NGOS	AIR	2,312	462,382	1,040,360	1,502,742
SUB TOTAL WFP	RIVER	2,151	430,206	537,758	967,964
SUB TOTAL WFP	LAND	6,996	1,399,154	1,049,366	2,448,520
SUB TOTAL NGOS	LAND	37,107	7,421,320	5,565,990	12,987,310
<b>TOTAL WFP</b>		<b>9,420</b>	<b>2,005,260</b>	<b>2,017,023</b>	<b>4,022,283</b>
<b>TOTAL NGOS</b>		<b>39,419</b>	<b>7,883,702</b>	<b>6,606,350</b>	<b>14,490,052</b>
<b>TOTAL DELIVERIES</b>		<b>48,838</b>	<b>9,888,962</b>	<b>8,623,373</b>	<b>18,512,335</b>

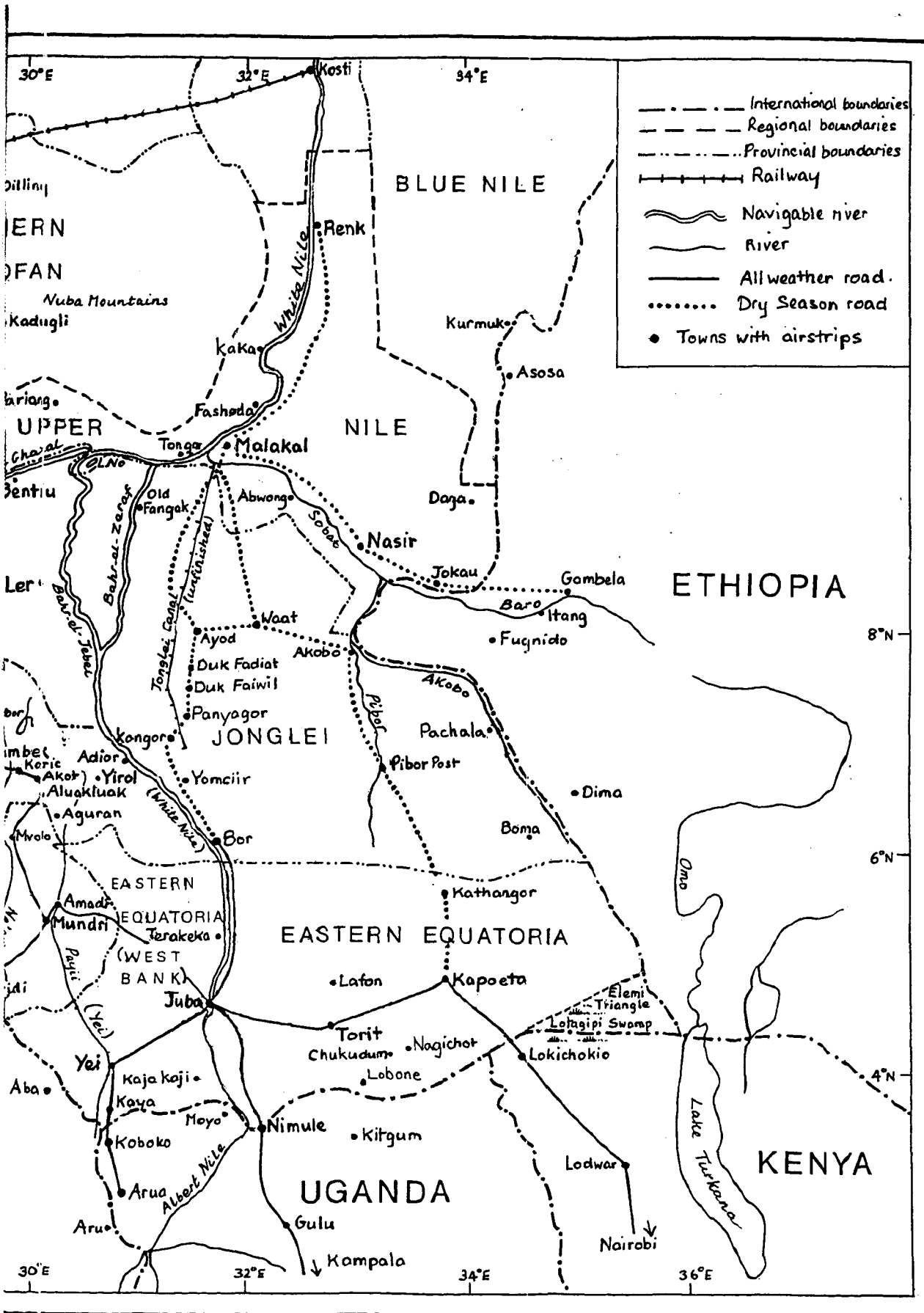
<b>SPLA</b>	<b>MODE</b>	<b>TOTAL</b>	<b>C.I.F.</b>	<b>TRANSPORT</b>	<b>TOTAL COST *</b>
		<b>MT</b>	<b>Value \$</b>	<b>Cost in \$</b>	<b>in \$</b>
SUB-TOTAL WFP	AIR	9,580	2,873,970	7,663,920	10,537,890
SUB TOTAL NGOS	AIR	3,064	919,200	2,451,200	3,370,400
SUB TOTAL WFP	LAND	2,833	849,948	424,974	1,274,922
SUB TOTAL NGOS	LAND	27,962	8,388,600	4,194,300	12,582,900
SUB TOTAL WFP	RIVER	1,625	324,924	406,155	731,079
<b>SUB TOTAL WFP</b>		<b>14,038</b>	<b>4,048,842</b>	<b>8,495,049</b>	<b>12,543,891</b>
<b>SUB TOTAL NGOS</b>		<b>31,026</b>	<b>9,307,800</b>	<b>6,645,500</b>	<b>15,953,300</b>
<b>TOTAL DELIVERIES</b>		<b>45,064</b>	<b>13,356,642</b>	<b>15,140,549</b>	<b>28,497,191</b>

\* Approximate based on average transport rates by various modes

BLACK



BLANK



BLANK