PN-AAL-091
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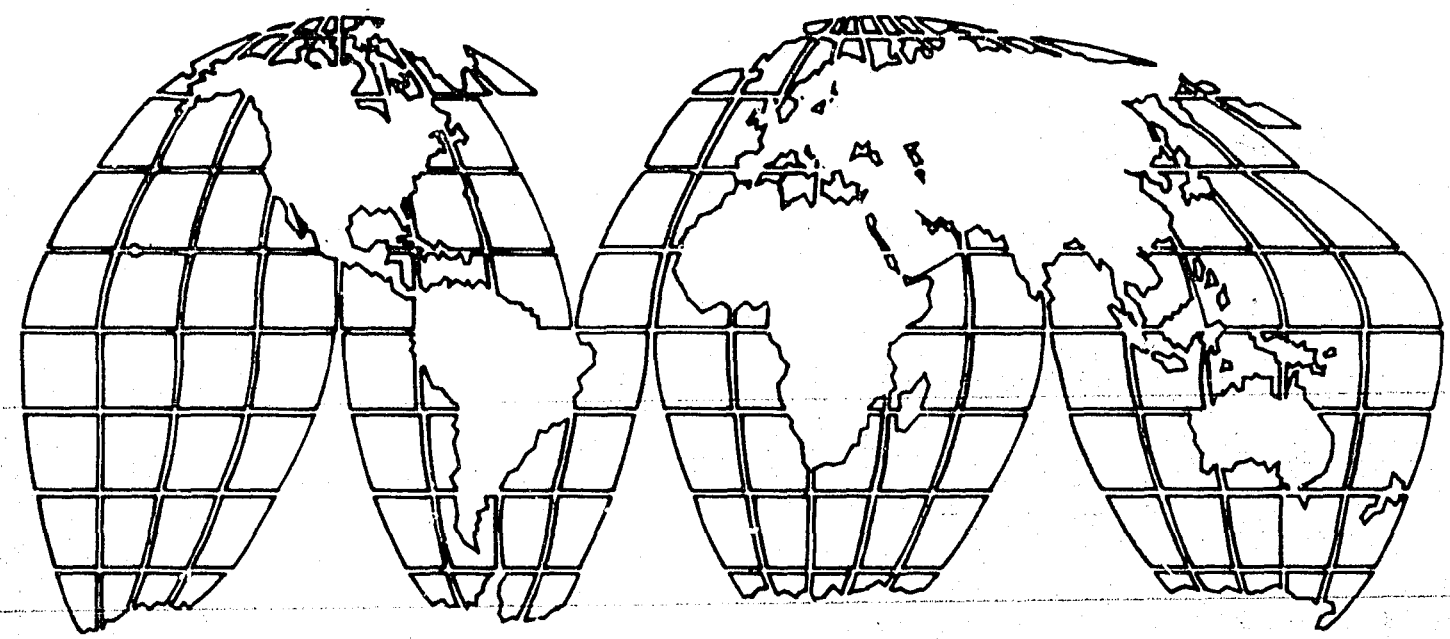
An Evaluation of the African Emergency Food Assistance Program in Chad, 1984-1985



June 1987

Agency for International Development (A.I.D.)

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AN EVALUATION OF THE AFRICAN EMERGENCY FOOD ASSISTANCE PROGRAM IN CHAD, 1984-1985

A.I.D. EVALUATION SPECIAL STUDY NO. 48

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June 1987

The views and interpretations expressed in this report are those of the authors and should not be attributed to the Agency for International Development.

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FOREWORD

The 1984-1986 drought in Africa resulted in the continent's most severe famine in recorded history. Countless lives were saved by the massive outpouring of assistance from around the world. The U.S. response to this crisis was larger than that of any other donor nation as a result of the concerted efforts of numerous Government agencies, private voluntary organizations, businesses, and U.S. citizens.

To reflect on and record the lessons learned from our response to the emergency, the Agency for International Development commissioned assessments of the U.S.-financed emergency activities. This report presents the findings concerning the U.S. effort in Chad; separate reports have also been published for Mali and Sudan. The findings of these three studies were consolidated in another report, The U.S. Response to the African Famine, 1984-1986, Vol. I, An Evaluation of the Emergency Food Assistance Program: Synthesis Report. A companion report, Vol. II, An Analysis of Policy Formation and Program Management, focuses on policy and management issues, including legislation and funding, early warning systems, donor relations, the role of the commercial sector, public and congressional relations, and the transition to development.

The lessons learned from this emergency should guide us in responding to such disasters and provide insights for determining the actions necessary to abate the ravages of future droughts.

Haven W. North
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Agency for International Development

ACKNOWLEDGMENTS

The evaluation team would like to express its sincere gratitude to the many persons who gave their time, experience, and know-how in helping it conduct this evaluation of the 1984-1985 Emergency Food Assistance Program in Chad, both in Washington, D.C. and in the field. Their frank assessments of their work and the problems encountered have been most valuable in enabling the team to make practical, positive recommendations for the future.

The Government of Chad, the USAID Mission in Chad, the U.S. Embassy, private voluntary organizations, and U.N. organizations all gave generously of their time, despite their heavy work loads.

USAID/Chad, the United Nations, private voluntary organizations, the prefectures, and other groups who hosted the team during its field trips rendered an invaluable service to the team and enabled team members to have a good look at the field situation in the regional centers and to visit such sites as feeding centers, wadi development and food-for-work sites, and impacted villages.

Without the help of the responsible Government of Chad officials, USAID/Chad, the United Nations, and private voluntary organization headquarters and field staff, it would have been impossible to cover the ground necessary in the 2 1/2 weeks spent in Chad.

A special thanks goes to USAID Representative John B. Woods, and the USAID Food for Peace/Private Voluntary Organizations Liaison Officer, Leslie McBride, who were instrumental in explaining the past, present, and 1986 plans for Chad.

SUMMARY

PURPOSE, SCOPE, AND METHODOLOGY OF THE EVALUATION

The principal purposes of this evaluation were to assess the timeliness, appropriateness, and impact of the 1984-1985 food emergency assistance efforts in Chad; to recommend measures to improve future U.S. emergency food assistance and disaster relief programs in Chad; and to consider measures for improving the design of emergency food programs in Africa to relate them more closely to national food strategies, including rehabilitation and longer term development.

The generic scope of the evaluation (see Appendix A) illustrates the many issues considered during the course of the preparation, fieldwork, and writing of the evaluation report.

For its evaluation methodology, the evaluation team depended on reviews of secondary sources, interviews, and observations in Washington, D.C. and Chad.

THE 1984-1985 FOOD EMERGENCY: SETTING AND CONSTRAINTS

Chad is a large, landlocked, and underdeveloped country that was not equipped to respond to a serious food emergency on its own. Communications were a major problem, and the transport network was extremely weak. Both constituted important barriers to Chad's development and food emergency responses. Chad's financial and economic situation was very difficult, leaving little capacity to meet emergency requirements. Although the political situation had improved in 1984-1985 compared with earlier years, substantial uncertainty remained.

The 1984-1985 Drought

The Food and Agriculture Organization/World Food Program (FAO/WFP) assessment mission in late 1984 (FAO 1985c) estimated that about 1.5 million people in Chad were seriously suffering from lack of food, and 500,000 people were also displaced. The rural population had experienced four seasons of insufficient rain and, by late 1984, four inadequate harvests.

Cereal production in the Sahelien zone of Chad dropped steadily from an average of 220,000 metric tons (MT) for 1976-1978 to a record low of 82,000 MT in 1984, or 37 percent of the 1976-1978 average. Production in 1984 in the Sudanian zone was somewhat better, but reached only 86 percent of the 1976-1978

average. Civil strife and a scorched-earth policy also left many homeless, hungry, and unable to benefit from their land.

The 1984-1985 Famine-Relief Effort

The United States and other donors undertook a massive effort to feed those affected by famine in 1984-1985. Emergency food aid pledged by donors for 1984-1985 in Chad amounted to 210,000 MT. This was more than the emergency food aid from all sources for the 3 previous years. Food aid achieved by October 1985 totaled 178,000 MT. The value of food and other emergency assistance actually provided totaled US$113 million. By comparison, total development assistance from all donors was US$90 million, with France providing 37 percent.

Emergency food aid distributed during 1984-1985 was 126,828 MT (60 percent of the amount pledged). This was more than double the total distributed for the 2 previous years combined. Of the total 210,000 MT pledged, some 75,000 MT, or 36 percent, was of U.S. origin. Other major donors were France, the European Economic Community, Italy, Germany, Switzerland, and Saudi Arabia. About 75 percent of total emergency food aid was delivered to the North and 25 percent to the South.

In the fall of 1985, there were 104 expatriates and 535 Chadians working directly on emergency assistance programs supported by international organizations, bilateral donors, and private voluntary organizations (PVOs).

The Agency for International Development (A.I.D.) emergency food sales program in N'Djamena and later in some of the provincial cities via Chad's National Cereals Office provided funds (some 2.0 billion CFA francs [FCFA] or US$5.7 million equivalent) to help run the emergency food assistance program.

Relief Effort Coordination

External assistance to Chad was more effective because of the success of the coordinating mechanism used. An effective operational-level coordination mechanism was implemented by the Government of Chad with the strong support of the WFP and the United Nations Disaster Relief Office (UNDRO). It provided for action committees at the national and prefecture levels chaired by the Central Government, with full membership of donors and PVOs active in the emergency food assistance program. Distribution committees were also set up at the subprefecture and the canton levels, where major distributions were to take place. These committees, using mobile evaluation teams, determined priorities and worked out problems that arose concerning food distribution.

The important problem of coordinating food aid shipments to the ports and from the ports to Chad was effectively addressed by the WFP, which acted as the lead donor agency. A special ministry was established in 1983 to oversee the operation of the emergency food programs. This Ministry for Control of Natural Disasters chaired the National Action Committee in N'Djamena. Thus, the Government of Chad maintained policy control of the emergency food assistance effort.

EVALUATION RESULTS

Overall, the 1984-1985 emergency food assistance program was carried out effectively, but there were shortcomings that reduced the impact and cost-effectiveness of the effort. A.I.D.'s emergency food assistance effort in Chad was critical to hundreds of thousands of Chadians who did not have enough food. The efforts of those in the Government of Chad, A.I.D., and other organizations in initiating and implementing the emergency program were, in many ways, extraordinary and are to be commended. However, this evaluation is intended to identify both achievements and shortcomings so that the latter can be corrected and future food emergencies can be dealt with even more successfully.

Timing

During late 1984 and early 1985, there was insufficient food in Chad to meet the requirements of needy families and individuals. The failure to have sufficient food in the right place at the right time diluted the effectiveness of the generally successful emergency food aid effort.

The timing problems experienced by the Government of Chad, A.I.D., and other donors are attributable to several factors. First, almost no early warning or emergency preparedness planning capability existed, even though 1984 followed 3 earlier drought years. Second, no one prepared contingency plans for a worst case scenario of another bad harvest year. Third, when the 1984 rains did fail, donors followed their customary practice (given the lack of early warning and pre-agreed emergency preparedness actions) of waiting until harvest data were in hand in October/November before declaring an emergency. Fourth, once a major emergency was declared, there were few organizations (e.g., PVOs) sufficiently committed and prepared to distribute the amount of food needed. Thus, responses to the food emergency were slow. However, despite these problems, a substantial portion of the estimated emergency food required in 1985 was distributed prior to the 1985 rainy season.

The severe food shortages and lack of rain in mid-1984 triggered substantial migration of rural Chadians in search of food by October/November 1984. When the Government realized the magnitude of the migration, it initiated policies and actions, assisted by PVOs, WFP, USAID/Chad, and other donors, to curb it. These efforts included evacuation of people from the environs of N'Djamena, the establishment of interim food distribution points on main routes to the capital, and the initiation of resettlement efforts and more in situ feeding. By December 1984, these efforts had eliminated most of the makeshift camps, but continued food shortages resulted in still more people migrating to resettlement areas.

The early warning system and emergency preparedness planning in Chad should be strengthened to help avoid the problems that occurred during 1984-1985. The Mission's planned financing of a food early warning system should be supported and an early warning system manager should be appointed by the Government of Chad.

To alleviate the problem of late arrival of food when successive drought years occur, the Government of Chad and donors should agree on at-risk criteria that would trigger food movements prior to or when the rains fail, rather than when the size of the harvest is known with substantial certainty.

WFP and CARE headquarters should review their procedures together with A.I.D./Washington to identify ways of shortening the time needed to respond to requests from their field offices.

Management

The Government of Chad, USAID/Chad, other donors, and PVOs managed their portions of the emergency food assistance effort well under difficult circumstances, but problems did arise that reduced the effectiveness of their efforts. As the 1984-1985 crisis emerged, USAID and other donors realized that the Government of Chad would need help in dealing effectively with the emergency. The Government and the donors agreed to use the WFP and PVOs to implement the emergency food program. The Government, with the strong support of the WFP, established and controlled a network of action committees in which donors and PVOs were full members at the national, prefecture (state), and local levels. These committees were effective in resolving issues, organizing in-country food distribution, and generally ensuring better management of emergency food assistance activities. The Government's involvement in food emergencies should be expanded by building on its role in managing these committees.

The WFP had the lead donor agency role for overall logistics coordination and management during the emergency. Effective measures were implemented to establish an efficient logistical

infrastructure system to deal with emergency food aid. These measures included such key actions as increasing and expediting food arrivals from Douala when Nigeria closed its borders, increasing ferrying capacity at the Chari/Logone and Mayo-Kebbi River crossings, and constructing the Bailey bridge at the Lere crossing of the Mayo-Kebbi River. The regional logistics bases also were important to the success of the effort. The operation of these bases should continue, and their services should be enhanced to cover recurrent costs. Expansion of the truck fleet was achieved, but not all the trucks brought into Chad served well over its rough terrain. Also, some delays in ordering trucks and lack of spare parts created extra expenses and diminished the timeliness of logistics support.

The provision of personnel and transport by A.I.D. in support of emergency activities was slowed by headquarters deliberations. More authority should be delegated to USAID/Chad to reduce this delay.

The U.S. emergency food sales program succeeded in Chad and led other donors to use the same mechanism in support of the overall effort. These programs, or a Title II Section 206 program, should be used to provide needed local currency for food-for-work and other development efforts in 1986.

Impact

Emergency food assistance, although insufficient in late 1984 and early 1985, was targeted successfully to needy regions and to needy individuals and families and saved many lives. Where food was delivered through PVO or WFP programs directly to individuals and families, the recipients received larger quantities of food more regularly than those reached through general distributions. Thus, where possible, emergency food assistance should be provided through programs targeted to individuals and families. Where general distribution is used, it should include substantial monitoring and transport capacity at the local level.

Despite emergency food shipments, mortality increased significantly in Chad during 1984-1985. Emergency food, sharing of food, and a large yield of famine foods helped to reduce famine-related mortality. However, it was impossible to determine the extent of the crisis or evaluate rigorously the impact of emergency food assistance because adequate baseline data were not available.

The 1981-1985 Chad famine occurred in stages, and people responded differently to each stage. These stages and the people's responses to them are important elements of famine relief planning and execution and should be taken into account by

the Government of Chad and others in dealing with future food emergencies.

Resettlement programs were used successfully to keep people from creating makeshift camps. Such programs also had a major impact on farmers and nomads, some of whom appear to have adopted a new way of life. For example, new agricultural techniques taught during the relief effort helped beneficiaries adopt more productive practices. These programs were a resourceful way of limiting the formation of camps and of caring for displaced persons. They should be used in the short run to assist families who continue to be displaced in Chad.

Health and Nutrition

The Government of Chad depended on PVOs and donors to assess the health and nutrition needs resulting from the food emergency in Chad and to monitor changes in status during the relief effort. PVOs did an excellent job identifying priority geographical areas for emergency food distribution. Technical assistance and donor coordination helped mitigate some of the detrimental health aspects of the famine. However, lack of infrastructure greatly inhibited health assistance efforts. For example, vitamin A deficiency was neither assessed nor treated, and oral rehydration therapy was not used extensively. Measures to deal with vitamin A deficiency should be implemented if it is determined to be a problem in future food emergencies. Likewise, child survival services such as vaccinations and oral rehydration therapy should be supported. Supplemental rations were sometimes the only food available. They should be distributed with a general ration.

Rapid nutritional surveillance results played a central role in determining the extent and severity of the Chadian famine and the need for emergency assistance. These techniques should be institutionalized as part of a national surveillance system.

Transition to Development

The shift from emergency relief to development was facilitated by mechanisms such as food for work and resettlement. This transition needs to account for persons still at risk and the possibility of drought recurring in 1986. Pre-positioning of food will help protect against such an occurrence. If the rains fail again, a call forward of food may be necessary before complete harvest information becomes available. Donors should agree on criteria to trigger calls forward of food in such situations.

Special programs such as food for work and wadi resettlement are needed to facilitate the transition to development. These

efforts should be encouraged, but their particular problems should be recognized and remedied. Thus, food-for-work programs should receive not only food, but also complementary resources for supervision, technical assistance, and equipment. Questions related to the longer term viability of wadi resettlement efforts, such as salinity, irrigation techniques, and market access, also should be studied carefully.

The Government of Chad and donors lacked a strategy for moving from the food emergency to development and for using food aid to facilitate that transition. Such a strategy should be developed and implemented, using Title II Section 206 and other planned and ongoing projects to support it.

GENERIC PRINCIPLES AND RECOMMENDATIONS

1. The host government has a critical role to play; be sure to involve it.

The host government should play a pivotal role in managing and coordinating the emergency effort. Even if the government has limited resources at its disposal, it should not be bypassed in the decision-making process. Such an involvement is especially important in chronic-deficit countries in order to build an institutional emergency preparedness capacity to respond to future disasters.

2. An emergency situation provides opportunities for innovation and rebuilding; take advantage of them.

The pressures of an emergency situation can galvanize the energies of donors and governments alike to work together in imaginative and highly constructive ways that are not always possible under normal circumstances. This innovation should be encouraged. As the emergency situation abates, efforts should be made to ensure that these initiatives are solidified and carried over into the longer term development efforts.

3. Intervene early to keep people at home.

An early warning system should be sensitive to socioeconomic indicators, such as migration patterns, changes in livestock and cereal prices, and herd movements. On-the-ground monitoring of this information can supplement remote-sensing technologies, crop assessment methods, and nutritional surveillance techniques to help predict disasters early enough to take preventive action.

4. There are many ways to distribute food; choose them wisely.

The type of intervention will vary depending on the stage of the famine, the timing of food and transport, the availability of nonfood inputs, the type of implementing organizations, and the level of monitoring required. All of these considerations need to be carefully analyzed in designing the most appropriate mix of assistance. Although logistical constraints are important, they alone should not determine the nature of the delivery mechanism. With sufficient advance planning, all of the critical factors can be adequately taken into account.

5. Food alone is not enough; get adequate funding.

The timing and appropriateness of complementary resources are as important as the arrival of the food component and should be given adequate planning. Despite the different funding sources and organizational structures, better coordination between food and cash resources is imperative.

6. Development and emergencies move at different speeds; remember to switch gears.

For emergency programs to respond quickly and efficiently, normal bureaucratic requirements designed for longer term development activities must be expedited or adapted. Special procedures, such as delegations of authority to Missions in the field, need to be considered to allow for the immediate mobilization of resources and appropriate delivery mechanisms.

7. Transition from emergency relief to development is complex; do not rush it.

In making the transition from emergency to development, it is essential to take into account the cumulative effect of several years of disaster, to understand the coping mechanisms individuals have used to deal with severe deprivation, and to assess adequately the possibilities for future self-sufficiency. Food and other assistance should not be withdrawn too quickly but should be organized in ways that are appropriate to the evolving situation. In this context, food for work can provide a necessary cushion while ensuring important linkages with longer term development objectives and avoiding unwanted disincentive effects of food aid.

8. Emergencies tend to build up a large infrastructure; take advantage of it.

When investing in substantial infrastructure, the recurrent costs of these operations should be planned for during the design phase, and alternate uses of these facilities during normal peri-

ods should be clearly defined. Food-for-work infrastructure, if properly planned and financed, can be used to provide supplementary income to the unemployed or underemployed; to create valuable long-term assets for the country, such as wells or roads; and most important, to serve in future emergency situations as a way of channeling food aid quickly and effectively at the village level.

9. Impact is elusive; try to capture it.

Mechanisms for monitoring and evaluating impact should be made a part of emergency food assistance efforts. Additional data should be collected to determine the impact of emergency food programs. Preplanning should include data collection for baseline purposes.

10. There is no substitute for experience.

Managing food emergencies efficiently increases the potential for impact and reduces costs. A.I.D. should assess the management of each food emergency situation as it is declared and provide additional experienced personnel if needed to improve management. If adequate staff and financial resources are not available, alternative strategies should be explored.

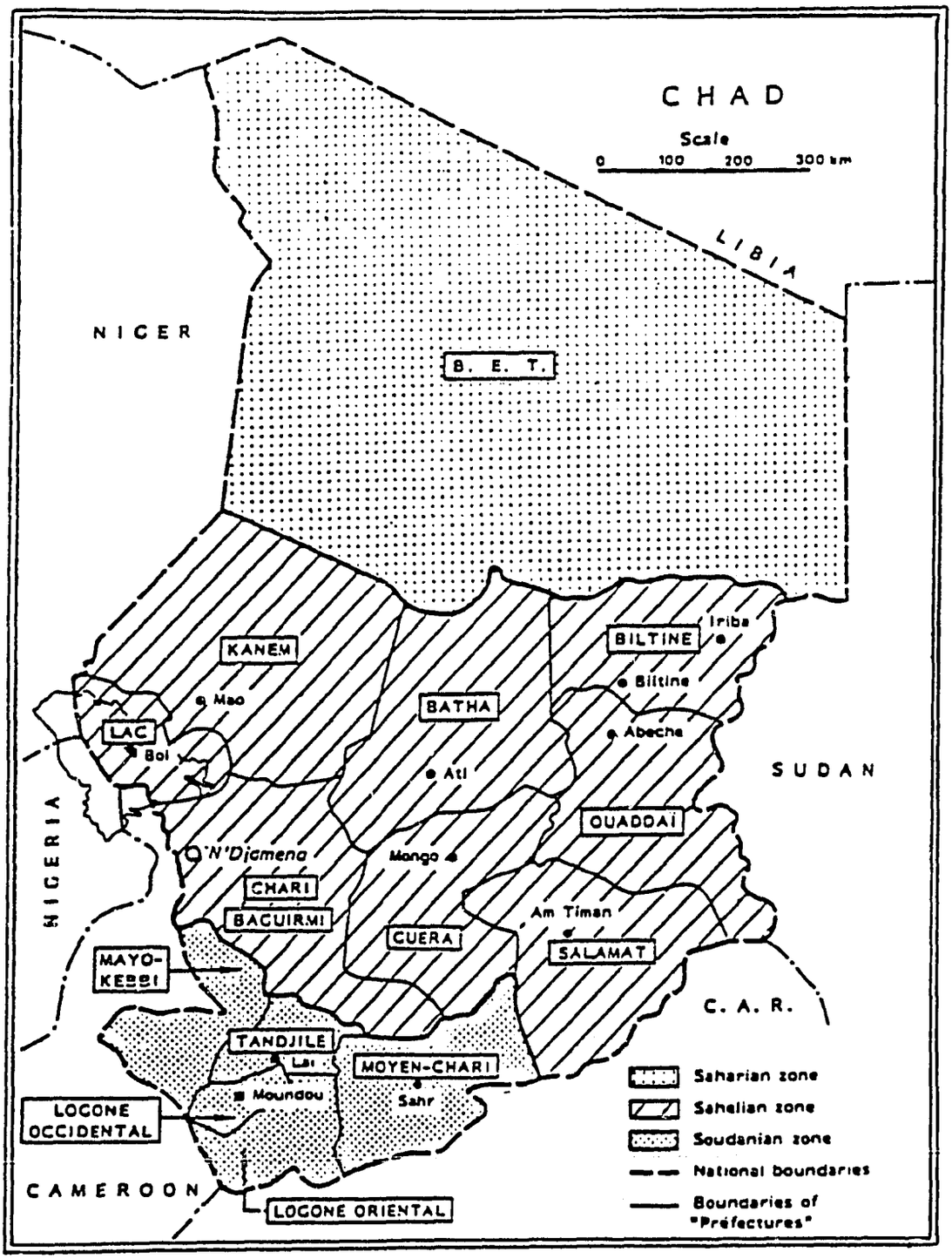
GLOSSARY

ACRA	-	Association for Rural Cooperation in Africa (Italian private voluntary organization)
Africare	-	U.S. private voluntary organization
AICF	-	Action Internationale Contre la Faim
A.I.D.	-	U.S. Agency for International Development
BET	-	Bourkou-Ennedi-Tibesti region
CARE	-	A U.S. private voluntary organization
CDC	-	Centers for Disease Control
CONCASED	-	National Coordinating Committee for Drought and Desertification Control
CTT	-	Chadian Truckers Cooperative
FAC	-	Fonds d'Aide a la Cooperation (Cooperation Francaise)
FAO	-	Food and Agriculture Organization
FCFA	-	currency used in Chad (also called CFA franc); US$1.00 = FCFA 365 in February 1986
FFP/PVO	-	Food for Peace/Private Voluntary Organization
IHAP	-	International Human Assistance Programs
INSEE	-	Institut National de la Statistique et des Etudes Economiques
kram-kram	-	Thorn tree found in Chad and used as a famine food
LICROSS	-	International League of Red Cross Societies
MLCCN	-	Chadian Ministry for the Control of Natural Disasters
MSF	-	Medecins sans Frontieres, a private voluntary organization
MT	-	metric tons
OFDA	-	Office of U.S. Foreign Disaster Assistance

GLOSSARY (cont.)

ONC	-	National Cereals Office, Chad
OXFAM	-	Oxford Committee for Famine Relief, a private voluntary organization
PVO	-	private voluntary organization
REGIFERCAM	-	La Regie Nationale des Chemins de Fer du Cameroun (railroad agency of Cameroon Government)
SNTRC	-	National Union of Cameroonian Truckers
SECADEV	-	Secours Catholique et Developpement
shadouf	-	irrigation system using counter-poised water buckets
Swissaid	-	Swiss nongovernmental organization
t/K	-	tons per kilometer basis for estimating freight rates
UNDP	-	United Nations Development Program
UNDRO	-	United Nations Disaster Relief Office
UNICEF	-	United Nations Children's Fund
USAID/Chad	-	U.S. Agency for International Development field Mission in Chad
Wadi	-	dry lake or river bed
WFP	-	World Food Program
WHO	-	World Health Organization
WVI	-	World Vision International
zaka	-	Islamic tradition of making charitable donations to strangers

Map of Chad



Source: FAO (1984).

1. INTRODUCTION

1.1 Purpose, Scope, and Methodology

The evaluation was designed to bring out practical suggestions for future action. The principal purposes of the evaluation were to assess the timeliness, appropriateness, and impact of the 1984-1985 food emergency assistance efforts in Chad; to recommend measures to improve future U.S. emergency food assistance and disaster relief programs in Chad; and to consider measures to improve the design of emergency food programs in Africa to relate them more closely to national food strategies, including rehabilitation and longer term development.

The generic scope of the evaluation (see Appendix A) illustrates the many issues addressed during the preparation, fieldwork, and writing of this evaluation report.

1.2 Methodology

Methodologically, the team depended on secondary source review, interviews, and observations conducted in Washington, D.C. and Chad. The five-person team comprised a team leader, a social anthropologist, a health/nutrition adviser, a logistics specialist, and an evaluation adviser and was in Chad from January 13 to February 1, 1986 (see Appendix H).

In performing its work, the team analyzed the food emergency situation in Chad, as well as the Agency for International Development (A.I.D.) and other donor responses to it; assessed the timeliness, appropriateness, and impact of A.I.D. and other donor responses; and distilled the lessons learned or that should have been learned by A.I.D. and other donors.

1.3 Setting and Constraints of the 1984-1985 Food Emergency in Chad

The 1984-1985 food emergency took place in a challenging setting of physical, logistical, and economic constraints.

1.3.1 Chad's Inability To Respond to the Famine

Chad is a large, landlocked, underdeveloped country that was badly equipped to respond to major food emergencies on its own. The victim of civil war, invasion by Libya, 4 years of drought, nonexistent or grossly inadequate revenues, and inadequate infra-

structure and administrative capability, Chad basically started its reconstruction and development in 1983 from nothing. Chad's area is 496,000 square miles, the size of the states of Texas, New Mexico, and Colorado combined (see map of Chad, p. xix). It has a population of 4-5 million people (with an error factor of plus or minus 1 million). Its adult literacy rate is only 15 percent. These circumstances made it hard for Chad to respond effectively to the serious food emergency of 1984-1985 without substantial donor help.

1.3.2 Communications and Logistics

Communications were a major problem and the transport network was extremely weak; formidable logistical constraints faced Chad in establishing an efficient emergency food distribution program. The constraints facing Chad are described in the following paragraphs (see also Appendix E).

Chad is landlocked; the ports of Apapa in Nigeria and Douala in Cameroon are respectively 2,200 and 1,800 kilometers from Chad's capital, N'Djamena. The port-inland supply lines never did function efficiently, and up to 1982, the country was solely dependent upon the Douala-N'Gaoundere route, with a monthly offtake capacity of less than 5,000 metric tons (MT).

N'Djamena is probably the only West African landlocked capital without (until recently) a bridge access link. The Bamako and Niamey bridges over the Niger River were constructed in the 1950s and 1960s. For years a single, antiquated river crossing/ferry, poorly managed by the Chamber of Commerce, served as the only means of delivering all goods and supplies, including food aid, overland into N'Djamena--at the pitiful rate of not more than 300 MT per day.

In addition, 17 years of constant civil war had destroyed the country's basic physical infrastructure and more specifically the warehouse storage facilities and Government/private trucking fleets in N'Djamena.

Further, much of Chad's system of unpaved roads and marked and unmarked tracks (an estimated 25,000 kilometers or 15,500 miles) are difficult to use in the dry season, and many of them are impossible to get through in the rainy season (June through September). The 160 miles of paved roads exist solely in the southern Sudanian zone of the country, whereas only sandy "tracks" can be used in the Sahelian zone.

Little or no logistical infrastructure existed at the regional level (i.e., necessary transport, storage, and garage/workshop facilities). Those points highlight the difficulties confronting the Government of Chad, donors, and private voluntary organizations (PVOs) in successfully overcoming major logistical constraints and bottlenecks in the 1984-1985 emergency food aid program for the country.

To these constraints were added the political problems of moving food aid through Nigeria to Chad.

1.3.3 The Financial and Economic Situation

Chad's financial and economic situation was very difficult, leaving little capacity to meet emergency requirements. Civil servants and teachers have been on 50 percent of the 1978 pay scale since 1982 (raised to 60 percent in late 1985). Those in the interior get paid only two to three times a year. Furthermore, the 1986 outlook for Chad's major export, cotton, is very grim. China is reported to be planning to export millions of bales of cotton to Chad in 1986; the current international price per bale is lower than that for which Chad can produce its own cotton.

1.3.4 Climate and Rainfall

The climate in Chad was austere, and lack of rain reduced food production in 1984-1985. Rainfall for the last 3 years (1983-1985) had been well below the 10-year rainfall averages for the 1960s and 1970s (see Table 1). For the last several years, this rainfall deficit has led directly to lack of adequate food supplies in many regions of the country. Since 1977 Chad has been a food deficit country. This situation changed in late 1985, when less rain fell than in the 1960s and 1970s but at exactly the correct time, leading to a large 1985 crop.

Grain production in 1985 was estimated at 690,000 MT, the largest crop in recent history (FAO 1985c). The Food and Agricultural Organization/World Food Program (FAO/WFP) cereal balance sheet for 1985-1986 shows a production surplus of 13,200 MT, about 2 percent over consumption needs (see Table 2). The last grain production figure of this magnitude in Chad was in 1971. The 1971 crop of 690,000 MT produced a 132,000 MT surplus that exceeded demand by 24 percent (see Table 3). The difference in percentages of the amount of surplus in 1985 and 1971 is due principally to the growth in population in Chad during the last 14 years.

Despite this very good 1985 crop, many pockets of need still exist in Chad, where either the rainfall was inadequate, farmers were unable to plant their crops, or where early flooding destroyed much of the rice crop. If the rains do not come in 1986, Chad will again be in serious trouble because farmers have not been able to reconstitute their reserves. As it is, many farm families will have difficulty getting through the "hungry season" (periode de soudure) between the time when the food left over from the harvest (after debts are paid and basic necessities purchased) runs out and the next crops are harvested.

Table 1. Rainfall Patterns, 1960-1985
(in millimeters)

Site	1960[a]	1970	1980	1981	1982	1983	1984	1985
N'Djamena	559	555	-	441	382	376	262	341
Mongo	810	683	-	-	-	439	338	565
Bongor	874	783	782	853	543	439	506	637
Moundou	1,176	1,114	-	-	947	968	852	942
Sarh	1,078	976	-	-	1,257	880	550	901

[a]Average.
Source: USAID/Agricultural Development Officer (based on Government of Chad Meteorological Services/Agrymet data), January 1984.

1.3.5 The Political Situation in Chad

The political situation improved in 1984-1985, but substantial uncertainty remained. Since 1982 when the present Government took power, it has been slowly consolidating its position. Many of the opposition groups in the South have joined the Government in recent months as part of a reconciliation program. However, there are still some cantons (counties) where travel is not safe without a military escort. Libyan troops, tanks, and airplanes still occupy the northern third of the country and are mobilized along the 16th parallel. This threat and continuing civil disorder have hindered Chad's ability to respond to development and emergency needs.

Table 2. 1985-1986 Grain Balance Sheet for Chad
(metric tons)

Item	Sahelian Zone	Sudanian Zone	Total
A. Availability			
Cereal Production	+269,250	+420,730	+690,000
Deduction for Losses and Seed Requirements (15%)	-40,387	-63,113	-103,500
Food Aid Stocks of Cereals on October 31, 1985	+29,120	+5,500	+34,620
Total	+257,983	+363,117	+621,120
B. Consumption Requirements			
Total Requirements[a]	-313,155	-317,247	-630,402
Minimum Carryover Stocks	-10,000		-10,000
Total	-323,155	-317,247	-640,402
C. Import Requirements(-)/ Surplus (+) (A - B)	-65,172	+45,890	-19,282
D. Anticipated Imports and Exports			
Expected Arrivals of Grain Aid in November/December 1985	+17,465	-	+17,465
Commercial Grain Imports for 1985/1986	+50,000	+25,000	+75,000
Grain Exports From the South to Cameroon and Nigeria	-	-60,000	-60,000
Total	+67,465	-35,000	+32,465
E. Net Food Surplus (D - C)	+2,293	+10,800	+13,183

Note: Based on available or estimated data, the FAO/WFP mission assessed a cereal surplus in Chad in 1985/1986 of about 13,200 tons. The estimated surplus is largely theoretical, however, and its main value is to determine possible food aid requirements. The estimate does not take account of the considerable local and regional deficits and surpluses, which required special attention. The FAO/WFP mission therefore recommends that great care be taken when drawing conclusions from this balance sheet.

[a]The estimate of total requirements is based on a 1986 population of 4,448,060 people and on average annual intake of 141 kilograms (kg)/person. The intake is derived from the following consumption patterns by zone: Sahara: 80 kg/person; Sahelian: 135 kg/person; and Sudanian: 150 kg/person.

Source: FAO (1985b).

Table 3. Estimated Cereal Grain Self-Sufficiency in Chad

Year	Production (000 MT)	Population[a] (millions)	Requirements[b] (000 MT)	Self-Sufficiency (percent)
1965	460[c]	3.32	498	92
1966	658	3.38	507	130
1967	675	3.45	517	131
1968	692	3.51	526	132
1969	687	3.57	536	128
1970	650	3.64	546	119
1971	690	3.72	558	124
1972	532	3.80	570	93
1973	460	3.87	580	79
1974	520	3.95	592	88
1975	666	4.03	604	104
1976	619	4.05	608	102
1977	565	4.08	612	92
1978	NA	4.12	618	-
1979	NA	4.13	620	-
1980	561[d]	4.16	624	90
1981	522	4.19	628	83
1982	450	4.24	633	71
1983	500	4.24	636	79
1984	370	4.34	651	58
1985	690	4.45	668	103

[a]Geographie du Tchad for 1965 and 1975 estimates; others calculated.
[b]Based on 150 kg/person.
[c]Grain Marketing in Chad, MASI, 1977 (years 1965-1975).
[d]FAO Food Assessment Mission estimates 1980-1985).

Source: USAID/Agricultural Development Officer, November 1985.

1.4 The Severity of the 1984-1985 Drought

The 1984-1985 drought was very severe. In the 1984-1985 period, the FAO/WFP assessment mission (FAO 1985c, 4) estimated that 1.5 million people were seriously suffering from lack of food, and 500,000 people were also displaced. The rural population was particularly vulnerable to food shortages going into the fourth year of the drought (Appendix D).

Cereal production in the Sahelian zone of Chad dropped steadily from an average for 1976-1978 of 220,000 MT to a record low in 1984 of 82,000 MT, or 37 percent of the 1976-1978 average. The agricultural production situation in the Sudanian zone was somewhat better: in 1984 production was 300,000 MT or 86 percent of the 1976-1978 average production levels. However, certain prefectures in the Sudanian zone, such as Tandjile and Logone Orientale, did less well in 1984 with production at 53 percent and 73 percent, respectively, of 1976-1978 average production (Figure 1).

Crop production data do not tell the whole story. Civil strife and a scorched-earth policy left many homeless and hungry, unable to benefit from their land. For example, even though the Moyen Chari prefecture's food production in 1984 was 10 percent over 1976-1978 levels, it was one of the severely affected areas in terms of persons needing emergency food assistance.

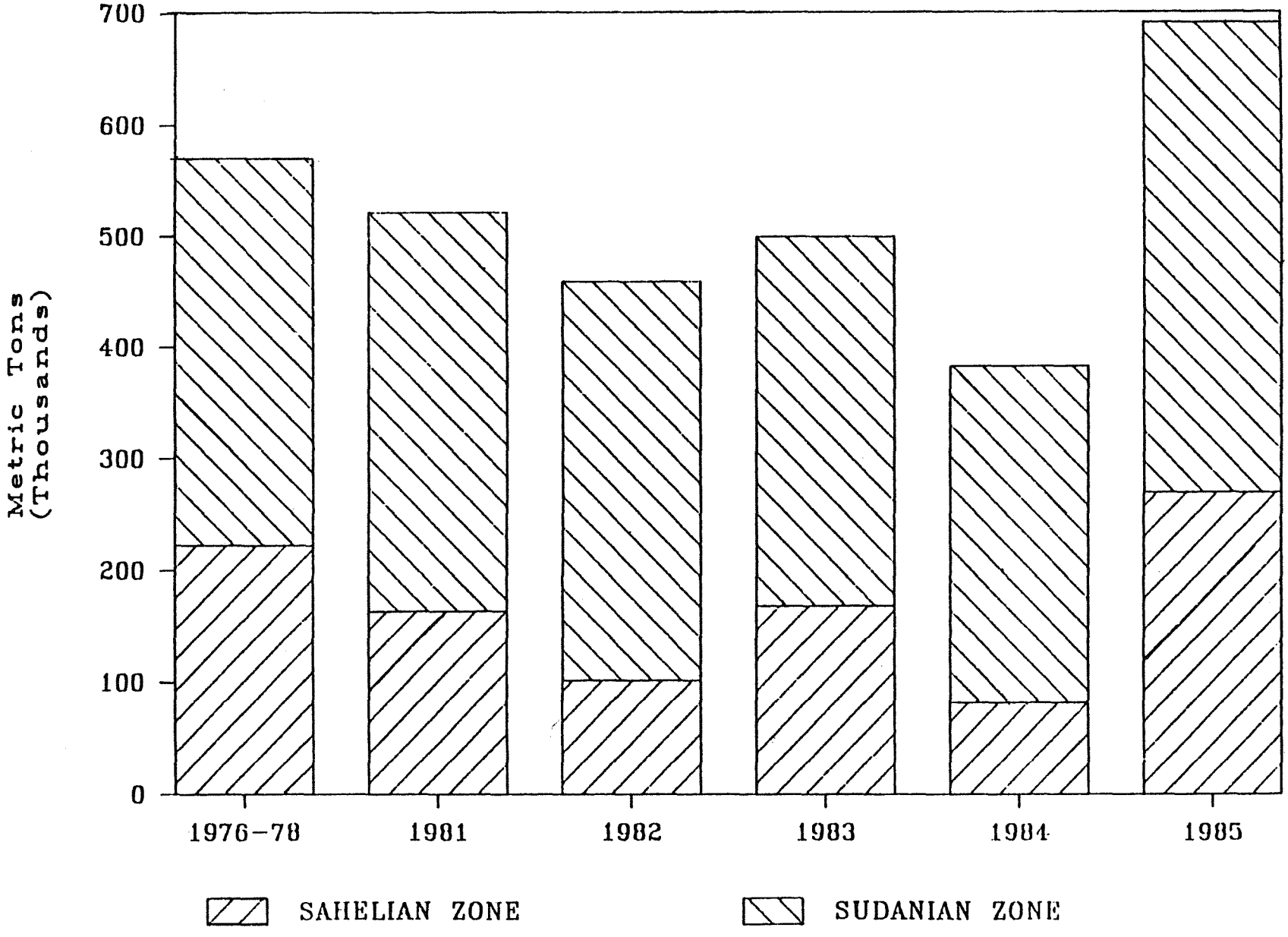
2. THE FOOD EMERGENCY RESPONSE OF THE UNITED STATES AND OTHER DONORS

The United States and other donors undertook a massive response to feed those affected by the drought in 1984-1985.

2.1 Amount of Food and Nonfood Aid

Emergency food aid pledged by all donors for 1984-1985 amounted to 210,000 MT. This was more than emergency food aid from all sources for the 3 previous years. Food and other emergency assistance actually provided totaled US$113 million; assistance via U.N. organizations accounted for 45 percent; the U.S. share was 42 percent. Total development assistance for all donors was an additional US$90 million, with France providing 37 percent. (Table 4 shows emergency food and development assistance by donor in 1985.)

Figure 1. Chadian Grain Production by Zone, 1976-1978 and 1981 to 1985



Source: USAID/Agricultural Development Officer; FAO (1985a,b,c).

Emergency food aid distributed during 1984-1985 was 126,828 MT (60 percent of the amount pledged). This was more than double the total distributed for the 2 previous years combined (Appendix B). The 1984-1985 emergency food program was a combined effort. Of the total 210,000 MT pledged, some 75,000 MT, or 36 percent, was of U.S. origin. Other major donors were France, the European Economic Community, Italy, Germany, Switzerland, and Saudi Arabia. Some assistance was given bilaterally to the Government of Chad, but most was funneled through WFP and PVOs with the agreement of the Chadian Government.

U.S. nonfood emergency assistance in FY 1985 totaled US$4.1 million. This was for such expenditures as transportation of plastic sheeting, airlift of trucks and seeds, grants to PVOs for operating costs (direct and indirect) and for supplemental feeding programs, grants to the Centers for Disease Control (CDC) for immunization planning and vehicle purchase for immunizations, grants to CARE for operating costs and purchase of vehicles, and grants to Africare.

Table 4. Donor Contributions for 1985
(thousands of U.S. dollars)

Donor	Budgetary Aid	Food Aid Disaster Assistance	Development Aid	Total
U.N. Agencies		51,200	16,900	68,100
United States		47,200	16,200	63,400
France	8,750	7,000	33,150[a]	48,900
European Economic Community		5,000	17,000	22,000
Germany		1,400	3,100	4,500
Saudi Arabia			3,300	3,300
Italy			10,000	10,000
Switzerland		1,400	800	2,200
Total	8,750	113,200	90,450	222,400

[a]Of which US$12.2 million was a loan to COTTONCHAD.

Source: A.I.D./Washington, Chad Desk.

The WFP played a major role in the Chadian drought. Serving as the lead donor logistics coordinator in Chad, the WFP worked to identify the principal logistical bottlenecks and, with the Government of Chad and other donor support, to reduce them. In

1984-1985, 54 percent of total food aid was distributed through the WFP. The balance was handled as follows: 6 percent by CARE, 8 percent by LICROSS, 15 percent by Chad's National Cereals Office (ONC), and 17 percent by the Chadian Ministry for the Control of Natural Disasters (MLCCN). U.S. food assistance was distributed as follows: WFP, 60 percent; CARE, 16 percent; LICROSS, 13 percent; and ONC, 10 percent.

Some 75 percent of the food was delivered to the North and 25 percent to the South. The low percentage for the South (Sudanian zone) was in part due to lack of information about the food crisis and to civil strife in the area, which made it difficult to operate there during 1984-1985.

The A.I.D. emergency food sales program in N'Djamena and later in some of the provincial cities disposed of 5,000 MT of monetized rice in FY 1984 and 5,000 MT of rice and 2,500 MT of sorghum in FY 1985 via ONC. These sales provided funds (about FCFA 2.0 billion, or US$5.7 million equivalent) to help run the emergency food assistance program. The emergency sales program also increased food availability in the capital and may have made a modest contribution to price stabilization. Ten percent of the local currency generated by sales was earmarked for the operation of ONC.

Available price data indicate that rice prices in 1985 were not much higher than in 1984. This suggests that rice imports kept prices from rising even further.

In the fall of 1985 there were 104 expatriates and 535 Chadians working directly on emergency assistance programs supported by international organizations, bilateral donors, and PVOs. This number did not include Chadian Government employees or PVO personnel working on regular food aid activities. These figures are not highly accurate, but they do give a rough idea of the magnitudes involved. Appendix G indicates the number of employees by sponsoring agency and the field staff in some of the prefectures.

2.2 Coordination of External Assistance

External assistance was well used because of the effectiveness of a coordinating mechanism under which the Government, donors, and PVOs worked together in national and Regional Action Committees. This strong, effective, operational-level coordination mechanism was put in place by the Government of Chad with the support of the WFP, USAID, and the U.N. Disaster Relief Office (UNDRO). It provided for action committees at the national and prefecture levels, which were chaired by the Government with full membership of donors and PVOs active in the emergency

food assistance program (the WFP, CARE, LICROSS, Medecins sans Frontieres [MSF], UNICEF, World Vision, German Action, Secours Catholique et Developpement [SECADEV], and Swissaid, to name a few). Distribution committees were also set up at the subprefecture and the canton levels where major distributions were to take place. Using mobile evaluation teams, these committees determined priorities for food distribution and resolved problems with food distribution at the national and regional levels.

The Ministry for the Control of Natural Disasters (MLCCN)[1], established in 1983 to oversee the operation of the emergency food programs, chaired the National Emergency Food Assistance Action Committee[2] in N'Djamena. The prefects and subprefects chaired the regional action committees at their respective levels of government. All donors and PVOs actively participating in the emergency food assistance program were invited to be full members of the committees both at the national level and in the regions where they were working.

The Government of Chad maintained policy control. All basic policy decisions were made by the National Coordinating Committee for Drought and Desertification Control (CONCASED), chaired by the President or his representative. CONCASED meets at the ministerial level and is composed of the principal ministries concerned with an emergency, with no outside participation. CONCASED, for example, decided in late 1984 and early 1985 to carry out in situ feeding, to discourage camps for displaced persons, and to work out resettlement plans for those who had set up spontaneous camps. Operational arrangements were determined by the National Action Committee under the chairmanship of the MLCCN Minister, with the full participation of the WFP, PVOs, and donors.

3. EVALUATION RESULTS: FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Overall, the 1984-1985 emergency food assistance program--now going into its fourth drought year--was carried out effectively. Nothing in the following suggestions for future action is intended to take away from the value of the joint effort in 1984-1985 or its significant impact. All of the participants in the effort are to be congratulated. However, the role of the

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[1]As of March 24, 1985, the name of the Ministry was changed to the Ministry for Food Security and Disaster Victims (MSAPS).

[2]The formal decree, which was to be signed soon after the time of this evaluation, changes the name of this committee to the Action Committee for Food Security and Support for Development (CASAD).

evaluation team, with the clarity of hindsight, is to identify and assess the successes and the past difficulties in providing emergency food assistance and make suggestions for improving performance in the future. Our evaluation results are organized in five major categories: timing, management, impact--social and economic--on beneficiaries, health and nutrition, and transition from emergency relief to development.

3.1 Timing

In 1984-1985, sufficient emergency food, plus a substantial carryover, was brought in to meet the needs of Chad. However, the failure to have enough food in the right place at the right time diluted the effectiveness of the generally successful effort. No emergency preparedness plan was in place to prevent this from happening.

3.1.1 Findings

1. Lack of a functioning early warning system and emergency preparedness planning, especially within the Chadian Government, led to serious timing problems when the harvest failed for the fourth consecutive year in the fall of 1984. Even though 1984 was potentially the fourth year of drought, there was no planning by the Government, WFP, or USAID/Chad for a "worst case" scenario under which Chad would have another bad harvest year. In fact, the 1984 harvest did fail.

In the absence of an early warning system, even though the drought had been underway since 1981, it was not possible to make a credible declaration of disaster prior to November 1984. This was true even though informal alerts had been sent by USAID/Chad beginning in April 1984. The Government of Chad requested help from the international community twice, on September 7 and September 24, 1984. The FAO/WFP drought assessment mission began in October 1984, and the preliminary results were known in late October/early November. The U.S. Ambassador's declaration of emergency did not occur until November 5, 1984.

Donor countries and international organizations did not commit emergency food assistance until the amount of cereals harvested was known in October/November 1984, which in turn meant that deliveries would not begin until April/May 1985. However, an early warning system could have indicated as early as August whether there had been sufficient and seasonable rainfall. Had a call forward been placed at that time, food would have arrived in January/February. In the early years of a famine, such timing would be satisfactory because people still would have reserves.

If the drought were to continue, with people already suffering considerably, the action plan would have to change. People no longer would have reserves of food or money to carry them through the year until the next harvest--should there be one. They would need food in the rainy season, considerably earlier than an August call forward, based on amount of rainfall, could get food into the country. Thus, in such situations the government and donors must decide whether or not to gamble on calling forward food aid several months before the rains and harvest are known.

Some work is being done or planned to strengthen the early warning system in Chad. USAID/Chad is financing a famine early warning system. The planned system will use such tools as satellite imagery (to produce information on yields and area cultivated by crop), ground truth surveys, price data, and nutritional surveillance. The U.N. Development Program (UNDP) is planning to field an expert on "rapid warning systems," and the European Economic Community is expected to support an MSF nutrition surveillance activity. Agrymet, which is an organization of the Interstate Committee for the Fight Against Drought (CILSS) dealing with rainfall in the Sahel, also has a role to play.

2. Insufficient food was in-country to meet the need for food in late 1984 and early 1985. November-to-March distributions fell short of estimated needs. However, a substantial proportion (71 percent) of the estimated amount of emergency food required by July 1985 was distributed prior to the beginning of the rainy season. The bad harvest in 1984 (due to the worst drought since 1913) increased the need for substantial food emergency assistance beginning in September/October 1984. However, there were no food security stocks in Chad and only a few thousand metric tons of commercial carryover stocks. Arrivals in November/December 1984 were minor compared to the need, and they represented food coming in under the regular WFP and PVO programs. Limited amounts of emergency food arrived in January-March 1985. A major causal factor in these slow arrivals was the limited offtake capacity (5,000 MT per month) in Douala. Even though the Chadian Government's distribution channels had limited capacity, they could have handled more food than was available during this period.

The FAO/WFP estimate of 13,333 MT per month was raised initially to 17,000 MT per month by the Centers for Disease Control (CDC). Later CDC calculations used various assumptions about the size of the population, the percentage of the population at risk, and the number of children in need. These calculations resulted in a range of monthly distribution requirements starting at less than 14,000 MT per month and ranging upward (Binkin et al. 1985, 26). Other CDC experts put the minimum requirement at 16,000 MT per month (Remington 1985). USAID/Chad considered 14,000-15,000 MT per month to be the most appropriate

estimate of need. The Devres-A.I.D. evaluation team accepted the level of 14,000 MT per month over the 1984-1985 period as a reasonable estimate of the amount required.

The official data available show that from November through March about 35,000 MT of emergency food was distributed, or 7,000 MT per month (see Table 5 and Figure 2). This amount was only 50 percent of the estimated amount required to meet the food needs of the at-risk population.[3] However, the monthly arrival and distribution data available are not considered to be accurate for the late 1984-early 1985 period. According to the WFP, more food was delivered and distributed in that period than is indicated in Table 5. Thus, more than 50 percent of the amount of food required during November 1984 to March 1985 was distributed, but the actual percentage is unknown. The total food arrivals and distributions shown in Table 5 for November 1984 through December 1985 are accurate.

Adequate amounts of food became available for distribution beginning in April (see Figure 2), but the WFP data seem to indicate that the 14,000 MT per month rate was not sustained during the rainy season and tapered off during the harvest. However, due to weaknesses in WFP bookkeeping, not all kinds of food assistance were recorded consistently (e.g., food sales, regular food-for-work programs, assistance to vulnerable groups). The evaluation team estimates that at least another 14,000 MT was actually distributed by July 1985, bringing the total distributed to 90,000 MT, or 71 percent of the amount required by that date based on a food requirement of 14,000 MT per month (i.e., 9 months x 14,000 MT = 126,000 MT).[4] By July 1985, arrivals in-country were 140,000 MT, or 83 percent of the

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[3]The FAO/WFP mission charged with the assessment of the food, agriculture, and livestock situation following the 1984 drought showed a shortfall of 300,000 MT of cereals for 1984-1985. It recommended that 100,000 MT be supplied beginning in early 1985, (about 10,000 MT per month). This recommendation was based primarily on the perceived logistic possibilities of getting the cereals into Chad. The 10,000 MT per month represented only 62 percent of the base minimum requirement of 1,062 calories per day from grain that the FAO thought should be provided. This 1,062 calories per day translates into 140 kg per person per year, or 160,000 MT for the year--an equivalent of 13,333 MT per month. The mission also recommended 15,000 MT of high protein value supplemental feeding foods (FAO 1984, 13, 23).

[4]This distribution estimate of 90,000 MT is based on the official WFP data in Table 6 of 76,000 MT distributed through July 1985 plus 14,000 MT added by the evaluation team to compensate for WFP data recording problems that led to under-reporting of certain types of food distribution (see Table 5 footnote a).

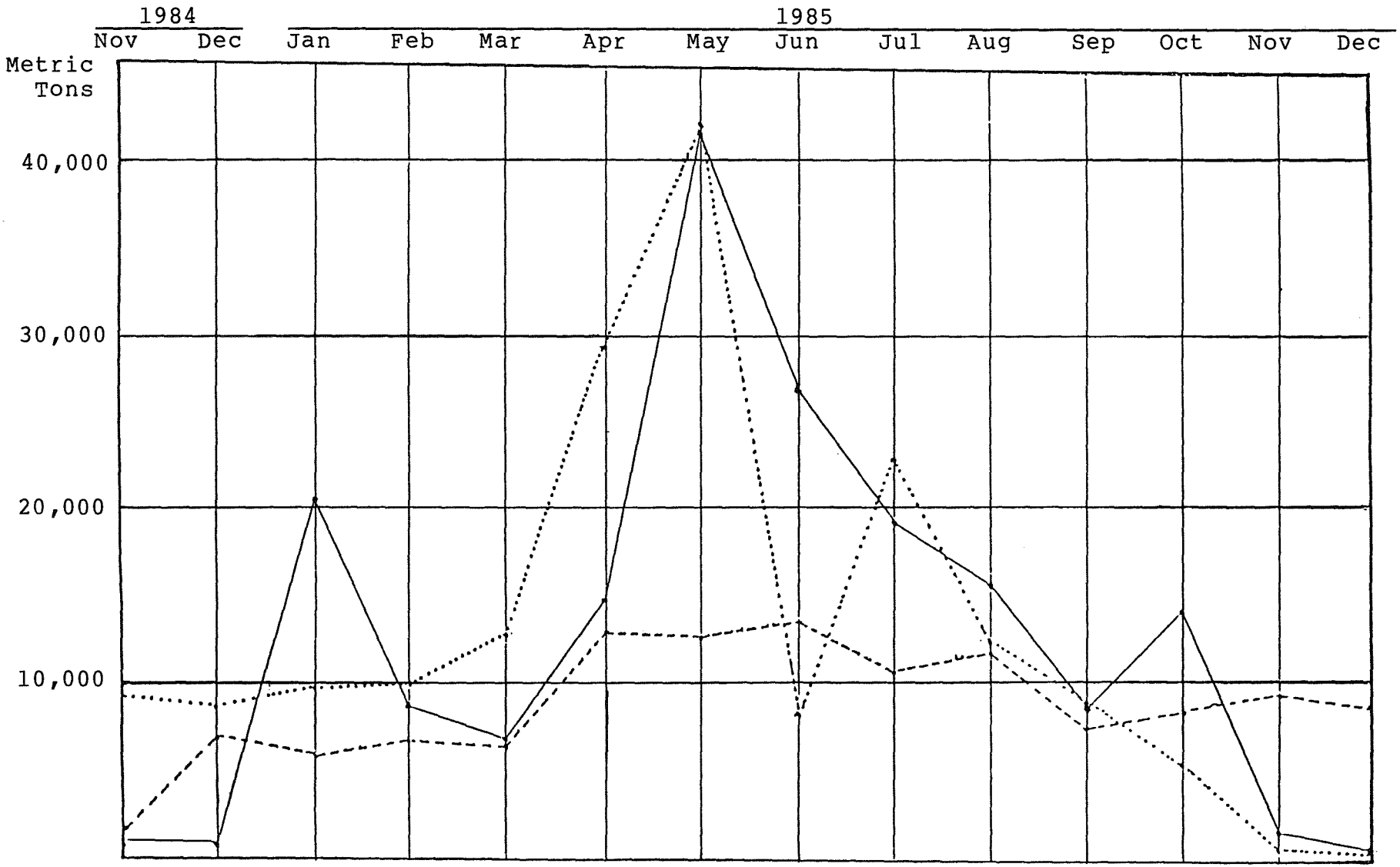
Table 5. Food Arrivals and Distributions by Sponsor, November 1, 1984 to December 31, 1985
(metric tons)

Item	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Opening Balance	4,462	3,475	(2,885)	12,770	14,728	15,591	17,175	46,266	59,972	68,520	72,280	73,385	79,145	71,792
Arrivals														
PL 480														
CARE	-	-	2,280	-	-	-	4,819	-	-	2,869	-	-	-	-
LICROSS	-	-	-	-	-	2,406	-	2,420	-	3,458	-	300	-	222
ONC (sales)	-	-	-	-	3,978	-	3,150	-	-	-	-	-	-	-
WFP	-	-	-	-	-	75	11,003	8,245	8,221	-	3,579	1,280	-	-
Total PL 480	-	-	2,280	-	3,978	2,481	18,972	10,665	8,221	6,327	3,579	1,580	-	222
Other Donors	405	432	19,006	8,658	2,812	12,049	22,808	16,414	10,936	9,309	5,044	12,571	1,813	439
Total Arrivals	405	432	21,286	8,658	6,790	14,530	41,780	27,079	19,157	15,636	8,623	14,151	1,813	661
Total Available for Distribution[a]	4,867	3,907	18,401	21,428	21,518	30,121	58,955	73,345	79,129	84,156	80,903	87,536	80,958	72,453
Total WFP Project Distribution[b]	1,392	6,702	5,631	6,640	5,987	12,946	12,689	13,373	10,609	11,976	7,518	8,391	9,199	8,610
Balance Remaining	3,475	(2,795)	12,770	14,788	15,531	17,175	46,266	59,972	68,520	72,180	73,385	79,145	71,792	63,843
Cumulative Amounts														
PL 480 Arrivals	-	-	2,280	2,280	6,258	8,739	27,711	38,376	46,597	52,924	56,503	58,083	58,083	58,305
All Donor Arrivals	405	837	22,123	30,781	37,571	52,101	93,881	120,960	140,117	155,753	164,376	178,527	180,340	181,001
Distributions	1,392	8,094	13,725	20,365	26,352	39,298	51,987	65,360	75,969	87,945	95,463	103,854	113,020	121,630

[a]Distribution amounts may be as much as 23,000 MT higher than indicated by the figures above according to WFP N'Djamena, because in the early months from November 1984 to March 1985, approximately, the WFP did not count food for work, supplemental feeding, and emergency sales food in its distribution tally. Arrivals, on the other hand, are for all activities. WFP notes that both arrivals and distributions in the period November 1984 through March 1985 are higher than indicated in this table, but actual numbers are unknown.
[b]Although 210,000 MT were pledged by all donors, as of December 31, 1985 only 181,014 MT had arrived.

Source: Based on reports provided by the WFP to the USAID Mission in N'Djamena.

Figure 2. Comparison of Food Shipment Arrivals in Port, in N'Djamena, and Distributions, 1984-1985



Arrivals in port ..... Arrivals in N'Djamena_____ Distributions - - - -

Source: Evaluation team, February 1986.

estimated annual requirement of 168,000 MT (see Figure 3). The FAO/WFP 1985 assessment mission estimated actual food distribution for November 1, 1984 through October 31, 1985 at 126,828MT.[5]

Total donor pledges of food for 1984-1985 were 210,000 MT. By October 31, 1985, 178,000 MT had been received and 126,828 MT distributed. Carryover stocks were 51,000 MT as of October 31, 1985. By the end of December 1985, estimated carryover stocks were 35,000 MT.

3. Formal requests to provide emergency assistance to Chad (food and nonfood) via WFP and CARE were agreed on by USAID/Chad and local representatives of the WFP and CARE. Requests were submitted in November 1984 to Rome, New York, and Washington. They were approved by Washington in early December. CARE did not call forward any food until January 1985; WFP approved the emergency request on December 28, 1984 and called forward all 21,700 MT approved at that time. It later gave shipping instructions for more food and was issuing call forwards as late as April 1985. The U.N. procedures involving UNDP/WFP in N'Djamena, FAO/WFP in Rome, and the United Nations in New York were long and time consuming. There was some initial reluctance on the part of CARE to expand its existing emergency feeding programs.

4. By September/October 1984, substantial numbers of rural families had left their villages in search of food. The FAO/WFP assessment team and SECADEV put the number of displaced persons at 500,000 and the number of additional people requiring help at 1 million for a total of 1.5 million people needing assistance. Many farmers who knew they would have no 1985 harvest began to move in September 1984. There were 50,000 displaced persons in the N'Djamena area as of the end of that month.

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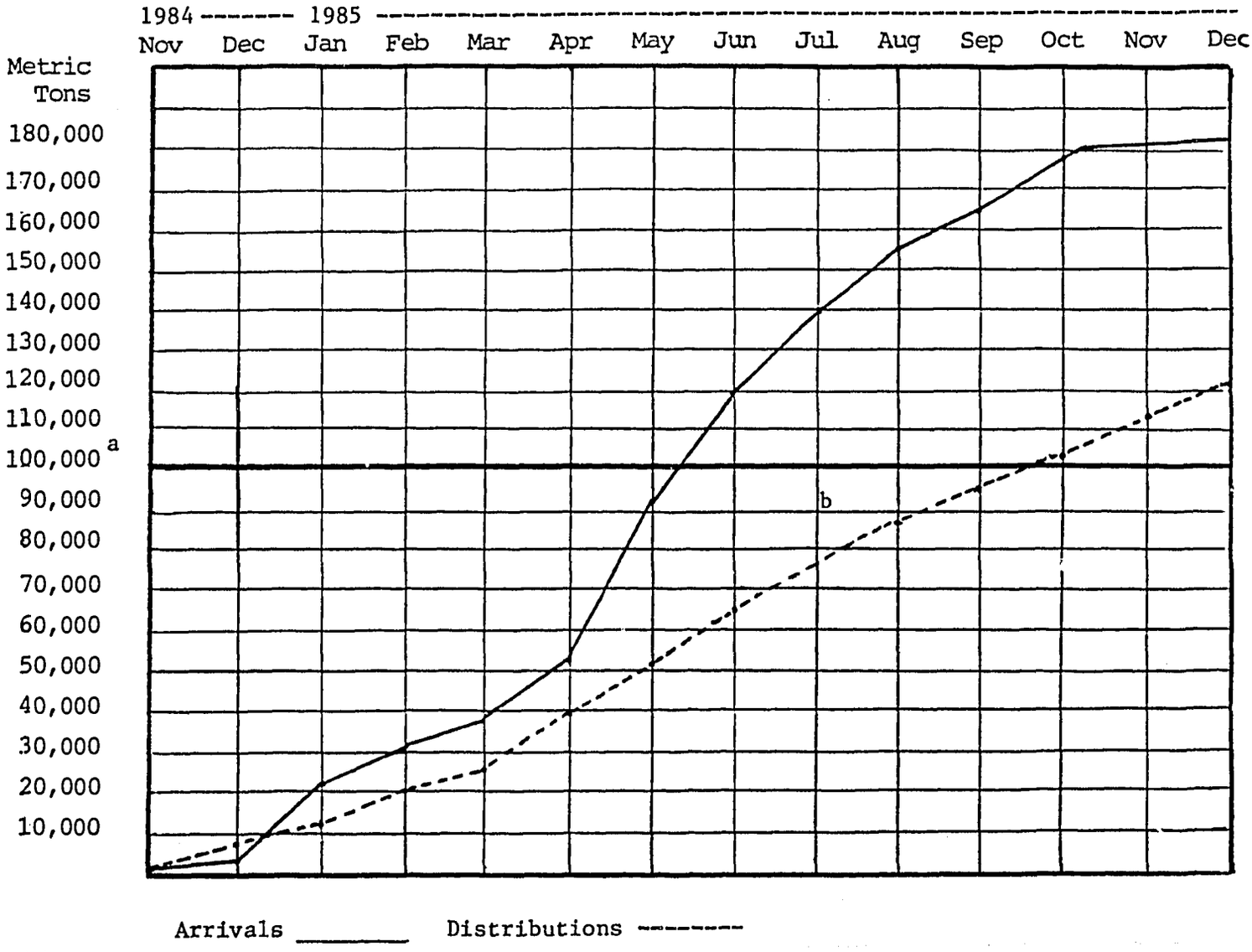
[5]This is the amount of food that the FAO/WFP 1985 assessment mission of October/November 1985 estimated had been distributed in Chad from November 1, 1984 through October 31, 1985. The 126,828 MT is 23,000 MT more than the 104,000 MT shown as distributed on the WFP books--see Table 6. The AID/Devres evaluation team believes that this FAO/WFP estimate of 126,828 MT is more accurate because the WFP bookkeeping system was changed in 1985, and the WFP had some uncertainty during the year regarding posting of other categories such as sales via ONC, regular food-for-work projects, vulnerable groups, and so forth. (See also Appendix B for food distribution in Chad for November 1984 to October 1985.)

Figure 3. Comparison of Cumulative Arrivals and Distributions of Emergency Food Assistance From All Sources, November 1, 1984 to October 31, 1985



[a]The Government of Chad had requested 100,000 MT of food assistance.

[b]The evaluation team believes that the actual distribution was about 90,000 MT by July 1985. WFP accounting records did not include all types of distribution (see text footnotes 4 and 5).

Source: Evaluation team, from WFP/USAID data (Table 5), February 1986.

3.1.2 Conclusions

1. The Government of Chad and donors had no early warning system that would have allowed them to decide on a formal call for emergency food in time to meet the country's need.

2. The problems Chad faced in the fourth year of drought, problems faced by most of the Sahelian countries in 1984, could have been dealt with by a protocol or by using standard at-risk criteria agreed on by major donors. Such criteria would have provided in the fourth year of the drought for an automatic call forward of 25,000 to 35,000 MT of food in the early summer of 1984 without waiting for the results of the summer rains or harvest.[6]

3. Given the urgent need, CARE and WFP were very slow in acting on their agreements with A.I.D. and in calling food forward. Although the field personnel in these organizations were very attuned to the urgency of the situation, there was slowness on the organizational level in responding to the food needs.

4. The substantial April/May deliveries arrived too late for pre-positioning in areas that would be cut off by the rains. Therefore, food needs in many places were not adequately met.

3.1.3 Recommendations

1. Plans to strengthen Chad's early warning system with the A.I.D.-financed famine early warning system should be supported.

2. A Chadian Government early warning system manager should be appointed to coordinate donor efforts and avoid duplication.

3. To help deal with the problem caused by late arrivals of food during the prolonged periods of drought, the donors and Government of Chad should agree on at-risk criteria under which food would be called forward early. This would take place automatically during the summer months without waiting for the results of the rains or harvest.

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[6]Even if the rains had turned out to be good and the harvest satisfactory in 1984, experience has shown there are always carryover requirements for pockets of need and food requirements for new and ongoing development-oriented food-for-work programs.

4. Headquarter organizations for CARE and the WFP should meet with A.I.D./Washington and agree on procedures to shorten the time required to process requests from the field.

3.2 Management

The Government of Chad, USAID/Chad, and other donor strategy of using United Nations WFP and PVOs as principal implementing agents supported by a network of Action Committees chaired by the Government of Chad was very successful. More ample and earlier delegation of responsibility by A.I.D./Washington to USAID/Chad for contracting with PVOs and other resources would have helped reduce delays.

3.2.1 Findings

1. USAID/Chad and other donors realized that the Government of Chad had little capacity to deal with the food emergency because it was just beginning to recover from a devastating civil war, a recent invasion by Libya, and a disrupted economy. The Government had little administrative capacity and few funds to operate the emergency food assistance program, identify the segments of the population most in need, receive and store the food required, transport it to at-risk groups, and monitor its distribution. Therefore, other mechanisms had to be established to perform these functions.

2. A major step in eliminating these constraints in Chad was the decision by the donors, in agreement with the Government, to use the United Nations/WFP and PVOs to implement the emergency food assistance program. The WFP, UNICEF, and PVOs such as CARE, MSF, LICROSS, Africare joined with the Government and other donors to identify target groups most in need, provide logistic support, transport food to the delivery sites, and monitor food distribution down to the village level. (Appendix B shows the amounts of aid channeled through these groups.)

3. The Chadian Government's active participation and involvement in the emergency food assistance effort was ensured by a network of action committees, established and controlled by the Government and strongly supported by the WFP, in which donors and PVOs were full members. The Emergency Food Assistance Action Committees were mixed committees chaired by the Ministry for the Control of Natural Disasters (MLCCN) at the national level, prefects at the prefecture (state) level, and distribution committees at the canton (county) level. The WFP, USAID/Chad, and UNDRO played a prominent role in developing and supporting this coordinating committee structure and making it successful. All

donors and PVOs involved in the emergency effort were invited to participate as members. The principal role of these committees at each level was to establish priorities for food distribution and ensure the delivery of the food. This coordinating activity at all levels overcame many obstacles, assisted in identifying the target groups most in need, and saved many lives. (Appendix F includes examples of how the committee structure worked at regional and subregional levels.)

4. An overlap of jurisdiction between the MLCCN and the Ministry of Planning existed, especially with the food-for-work program. The MLCCN had responsibility for emergency food and its use in resettlement and emergency food-for-work efforts. However, the Ministry of Planning was responsible for food-for-work efforts for regular development projects that use such programs. At the same time, the MLCCN was moving more heavily into food-for-work programs as a means for meeting food emergency needs and as a part of the transition from emergency relief to development, and the Ministry of Planning was expanding its coordinating role with PVOs and its food-for-work project activity. This increasing overlap could create coordination difficulties in the future, especially during the rehabilitation and recovery stages--a grey area between emergency relief and development status.

5. A rapid expansion of logistic capacity via Douala and N'Gaoundere in the Cameroon to Southern Chad and N'Djamena from a monthly offtake of 5,000 MT to 30,000 MT took place and was a major achievement of the Government of Chad/WFP/donor effort. In addition, in-country distribution was greatly facilitated by the establishment of regional logistical bases in the Kanem (Mao), Ouaddai (Abeche), Guera (Mongo), and Logone Oriental (Moundou) Prefectures by the WFP (with donor help, including USAID/Chad).

The logistical infrastructure developed covered the following:

-- The Cameroon supply line: Douala-N'Gaoundere-N'Djamena/Moundou/Sarh

-- The Chari/Logone and Mayo-Kebbi River crossings in N'Djamena and Lore, including construction of the Logone River and Lore bridges

-- The central storage/logistical complex in Chagoua (20,000 MT capacity)

-- The U.N. Agency Transport Services (WFP, UNDP, and FAO/Italy)--300 trucks

-- WFP (and other) regional logistical bases, including Abeche, Mongo, Mao, and Moundou.

The maintenance and use of this infrastructure in 1985-1986 and after is a major concern.

The regional logistical bases had storage space, fuel depots, and repair facilities. Representing a multimillion dollar effort, they served and are serving a very useful purpose in providing support to food distribution in the interior. Training programs were started to prepare the Chadians to take over and run the logistical bases in the next few years. Some of the recurrent costs of these logistical bases are being covered by PVOs and other donors utilizing the services, but these are currently insufficient to defray total operating costs. UNDP financing for these bases expires on December 31, 1986.

A semipermanent Bailey bridge was constructed over the Logone river by UNDP with donor help. This bridge made it possible to dramatically increase the tonnage of food that could be transported to N'Djamena. A ferry was moved to Lere in the Mayo-Kebbi Prefecture to provide access to Southern Chad. Displaced persons also were transported back to their villages where they could receive emergency food assistance.

With the Government of Cameroon's full cooperation, the carrying capacity of food assistance by train and truck from Douala to N'Djamena quadrupled. This increase was critical because Nigeria, Chad's other neighbor, refused to permit emergency food to cross its borders in April 1985. At this point, two WFP logistics advisers stationed in Cameroon helped the Cameroon Government establish block trains, facilitate port operations, and move food out of the port promptly.

6. <u>There were serious logistic problems arising from inadequate truck capacity, particularly of 4-by-4 off-the-road trucks</u>. Lack of off-the-road trucks (four-wheel drive and high carriage) capable of moving on difficult, unsurfaced roads and tracks was a problem throughout 1984-1985. The Chadian private sector truck fleet was inadequate to meet the surge of demand caused by the food emergency. Donors were asked to finance additional trucking capacity via the United Nations and PVOs. Their efforts resulted in a measurable increase in road transport capacity in 1985. Several problems arose in achieving this progress, and more remains to be done in rebuilding Chad's transport capability for food distribution.

The WFP brought in 21 MAN trucks rehabilitated and donated by the Federal Republic of Germany. These trucks arrived without spares or repair manuals, so many of them were cannibalized for parts. However, they amounted to only a small fraction of the total emergency fleet of 297 trucks.

In March 1985, A.I.D./Washington agreed to purchase 15 trucks in Europe, using CARE as the purchasing agent, which would bolster CARE's distribution capacity. CARE had requested the trucks in late February, but the contract with CARE was not signed until 4 months later. The administrative delays in negotiating the truck purchase agreement between A.I.D./Washington and CARE led to the decision to air freight 10 of the trucks from Europe to N'Djamena rather than ship them by sea. The air freight cost for the trucks was about 20 times that of sea freight, and the trucks still did not arrive until August 1985.

7. CARE requests to USAID/Chad for additional monitors required more than 4 months for approval and implementation. Efforts to get International Human Assistance Programs (IHAP) staff signed up with A.I.D./Washington and sent to Chad took almost 6 months. In 1982, USAID/Chad had authority to sign contracts for similar kinds of services in the field and was able to do so in 2 months. This was attributed to USAID/Chad's knowledge of field conditions. The abbreviated grant language was cabled to USAID/Chad by the Office of U.S. Foreign Disaster Assistance (OFDA), and the grants were locally executed. As a result, the 1982 grant agreements did not require specialized legal and contracting staff in Chad.

USAID/Chad approval of the request for IHAP services came quickly, but it took 5 more months for OFDA in A.I.D./Washington to sign the agreement with IHAP permitting it to send its personnel to Chad.

8. The FY 1984 and FY 1985 emergency food sales program utilized Chad's National Cereals Office (ONC) to market the grain and generated about FCFA 2.0 billion (US$5.7 million equivalent) in local currency, which was used to support the emergency food assistance program. If continued, these food sales could provide resources to support the transition from emergency to development-oriented programs (see Table 6).

Numerous logistics items were financed from these local currency funds. These included the transfer and repair of the ferry from N'Djamena to Lere (Mayo Kebbi Prefecture), transport of displaced persons to their villages, and construction of the logistical base at Mao (Kanem Prefecture). In addition, a resettlement project in Kanem was assisted, and sorghum seed was purchased to increase post-rainy-season sorghum production.

3.2.2 Conclusions

1. Generally, the Government of Chad, USAID/Chad, the United Nations/WFP, and PVOs managed their portions of the 1984-1985 emergency food assistance program well under difficult

Table 6. Status of Funds Generated by the Emergency Sales Program as of December 1985

	Funds Committed	Funds Disbursed	Funds Remaining
1st Transfer Agreement, FY 1984			
ONC	80,000,000	80,000,000	-
Pharmacy Supplies	360,000,000	360,000,000	-
Dandi Rock Crusher	360,000,000	360,000,000	-
Kanem	129,951,901	129,951,901	
Total	929,951,901	929,951,901	
2nd Transfer Agreement, FY 1985 (FCFA 969,907,150 generated[a])			
ONC	125,000,000	60,000,000	65,000,000
Mao Logistical Base	250,000,000	250,000,000	-
Kanem Resettlement	165,040,099	19,423,099	145,625,000
Lere Ferry	3,632,000	3,632,000	
Transport of Displaced Persons	40,000,000	12,750,000	27,250,000
Berbere Seed Purchase	25,000,000	25,000,000	-
VITA Private Enterprise	168,500,000	-	168,500,000
Africare Resettlement	5,075,000	-	5,045,000
Total[a]	782,255,099	370,805,099	411,450,000
Total Anticipated FCFA To Be Generated Under 2nd Agreement			1,057,655,300
Funds Committed			782,255,099
Balance Remaining to Program			275,400,201

[a]As of December 11, 1985.
Source: USAID/Office of Food for Peace Report, January 1986.

circumstances. The Emergency Food Assistance Action Committees were effective in resolving issues and in ensuring active participation in and better management of the emergency food assistance effort by all involved parties. Better coordination between MLCCN and the Ministry of Planning would reduce jurisdictional uncertainty and further strengthen the Government's capability to deal with the food emergency and the transition to development.

2. Logistics management was generally good, especially key actions such as construction of the Bailey bridge and sharply increasing food shipments from Douala to N'Djamena. The regional logistical bases in place were important to the 1984-1985 emergency effort, and their continued existence will assist greatly in meeting food emergency assistance needs in 1985-1986 and beyond.

3. Donor efforts to increase the truck fleet in Chad were successful. However, not all of the trucks were well adapted for the rough off-the-road conditions found in Chad. A.I.D./Washington's decision in March to airfreight 10 CARE trucks, which arrived in late July/early August 1985 could have been avoided. Had A.I.D./Washington and CARE/New York moved more rapidly, the trucks could have been ordered and sent by sea to Douala much more cheaply.

4. A.I.D./Washington approval of additional monitors for CARE (which took 4 months), and its efforts to get IHAP personnel signed up and out to the field (which took almost 6 months), could have been done more expeditiously by USAID/Chad given proper delegation of authority and staff support.

5. The emergency sales program was very successful and well executed by ONC. The U.S. effort generated US$5.7 million equivalent in local currency in 1984-1985. The success of the emergency sales program induced other donors to allocate US$15.0 million in food for sale via ONC to generate local currency.

6. A similar emergency sales program in 1986 would provide funds for the transition from emergency to development efforts such as wadi development and food-for-work activities. To be effective, food-for-work and similar programs need management, equipment, and materials, which could be purchased with emergency sale proceeds.

3.2.3 Recommendations

1. A.I.D./Washington should delegate more contracting authority, and funding to support it, to USAID/Chad in future drought-related emergency programs. The contracting authority

and funding should be coupled with arrangements for adequate temporary duty assignment of experienced contract and legal staff.

2. Involvement of the Chadian Government in food emergency efforts should be encouraged and expanded via its role in managing the Emergency Food Assistance Action Committees. Clear jurisdiction should be given to MLCCN vis-a-vis the Ministry of Planning to increase the effectiveness of Government of Chad management of food assistance and its use in the transition to development.

3. The regional logistical bases currently operated by the WFP should be continued at least through 1987. By that time the Chadians now being trained may be able to take them over with a small amount of expatriate assistance. Services provided by these bases will need to be expanded to cover recurrent expenses.

4. Local currency-generating programs should be continued in 1986 to support emergency feeding and food-for-work programs. The latter programs need resources (e.g., local currency, equipment, materials, technical assistance) in addition to food. Because an emergency sales program may not be appropriate in 1986, alternate methods such as a Title II Section 206 program should be sought. USAID/Chad's PVO development initiatives project should be viewed as an important source of the dollar funding required.

3.3 Impact

Emergency food assistance was very helpful to beneficiaries and saved many lives. It was not possible, however, to quantify the overall impact of the emergency food assistance effort or to carry out a detailed impact assessment because baseline and impact data were lacking.

3.3.1 Findings

1. The Government of Chad, PVOs, and U.N. organizations cooperated through food action committees to agree on the regions of the country most in need of food aid. These organizations divided up available food aid cooperatively among regions according to the needs of each region, resulting in good geographic targeting of available food.

In areas where PVOs were operating programs, food aid was targeted through them to specific individuals and families in need. In many cases, these rations were given as food for work

while people learned and applied wadi irrigation techniques. In other areas, the Government and the WFP carried out general distribution to the most deprived regions.

2. Chadians fed through activities targeted on individuals and families in need (e.g., supplemental feeding programs, food-for-work, and resettlement programs) fared better and received larger quantities of food more regularly than those reached through general distribution. Of the total at-risk population of 1.1 million identified by mobile evaluation teams (primarily staffed by MSF), some 46 percent were reached through targeted emergency programs (see Table 7). The remainder of the at-risk population received food aid through general distribution. Many of those interviewed who had received food via general distribution channels claimed to have received only small and irregular quantities. However, because monitoring of distribution at the local level began late and was carried out in relatively few areas, it was difficult for the present evaluation team to verify this.

LICROSS, CARE, and other organizations targeted individuals and families; they did not suffer the same logistical and other problems that the WFP did with its general distribution effort. Even though it appears that the needs of some general distribution beneficiaries were not met, food aid delivered through general distribution channels was allocated to regions, and sometimes villages, on the basis of nutritional and medical criteria.

Success in targeted programs was due to better management, logistics, and monitoring of the emergency food assistance effort. The general distribution efforts lacked careful monitoring, faced difficult transportation problems in getting food out to villages from the canton level, and, in general, had less management structure available to ensure that food was distributed to and received by those who needed it most.

3. In October 1984, the Government of Chad decided to discourage camps by resettling the displaced population already gathered around N'Djamena and providing food at the resettlement sites. By December 1984, with the help of the PVOs, UNICEF, WFP and other donors, the operation had been completed. From then on, the Government successfully used resettlement programs to keep people from creating spontaneous camps.

A first step was to evacuate those around N'Djamena to Karal. This was done with the consent of those in the N'Djamena camps. To stop the flow of displaced persons to the capital, the Government, with the help of PVOs and donors, provided food in four localities along the principal access roads to the capital: Cheddra, N'Djamena-Bilala, Bokoro, and Dourbail. This step provided time to locate and prepare relocation sites.

Table 7. Total At-Risk Population and Those Reached by Targeted Emergency Distribution Programs

Area	MSF Estimate of At-Risk Population[a]	In Situ and Voluntary Resettlement[b]	LICROSS Supplemental Feeding and Dry Ration[c]	Total No. of At-Risk Population Served	Percentage of At-Risk Population Served
Kanem	160,300	31,325	15,205	46,540	29
Botha	132,800	55,000	4,023	59,023	44
Biltine	60,000	25,000	16,199	41,199	69
Lac	28,000	-	-	-	-
Chari-Baguirmi	134,679	106,153	-	106,153	79
Mayo-Kappi	43,968	3,700	-	3,700	8
Salamat	11,500	7,500	-	7,500	65
Taudjile	138,500	-	123,692	123,692	84
Guera	56,000	28,000	18,713	46,713	83
Mouen Chari	54,300	-	4,266	4,266	8
Logone Oriental	80,000	-	17,317	17,317	22
Bourkou-Ennedi-Tibesti	12,500	-	-	-	-
Logone Occidental	70,000	-	-	-	-
Ouaddai	69,620	16,225	9,828	26,053	37
Total	1,052,167[d]	272,913[e]	209,243	482,156	46

[a]MSF surveys.
[b]From SECADEN, CARE, UNICEF, WFP, and AID reports.
[c]LICROSS 1985 Final Report.
[d]MSF estimates from rapid nutritional assessments. FAO estimate of at-risk population was 1.5 million, which would lower the percentage of at-risk population reached by targeted emergency distributions to 32 percent.
[e]Does not include 58,000 primary school beneficiaries from the WFP vulnerable group feeding program.

At the end of November 1984, the four food distribution points were closed. SECADEV agreed to manage, with the National Office for Rural Development (ONDR) (the Government's agricultural extension service), the reinstallation of the displaced population in Bokoro and N'Djamena-Bilala. CARE and UNICEF were charged with responsibility for the other sites.

By December 1984 the movement toward camps near N'Djamena had been arrested, and many of the displaced persons were settled in wadis (dry lake and river beds) and other areas where they could grow supplemental foods.

The Government's resettlement program helped resettle persons who were forced to move because of the Libyan occupation, other local conflict situations, or the drought. It also helped to prevent people from moving into N'Djamena. More important, at a time when pure "relief" needs were great, this program provided productive activity for displaced people. Some of the targeted populations learned irrigation techniques that they intend to use in resettlement areas or in their home areas after they return. For some nomads and seminomads who cannot resume their former way of life, the program has provided a new livelihood and sometimes a new home. CARE wadi resettlement projects in Kanem and SECADEV projects on Lakes Fitri and Chad, for example, kept people from migrating to N'Djamena and provided productive activity for a number of displaced and destitute people.

Another objective of the Chadian Government and the PVOs was to encourage the settled population in the surrounding areas to remain in their villages pending the rainy season. Many did remain because the program provided a limited, but helpful, amount of food to tide them over until the rains came and a bountiful harvest of famine foods appeared.

4. Resettlement programs with development characteristics had a significant impact on both farmers and nomads, some of whom appear to have adopted a new way of life. In Ouaddai Prefecture, for example, wadi resettlement programs served as "way stations" for displaced families returning from the South or from Sudan. They were temporarily resettled in wadis and given food-for-work rations, seeds, tools, and training in irrigated gardening so they could grow food to sustain themselves until the next rains, when they could return home to plant.

Many nomads and semisedentary herders will probably remain in wadi resettlements. In Kanem Prefecture and several places in Central Chad, for example, displaced persons, many of whom lost their land or herds, were resettled fairly permanently in wadis where they were given food for work and taught irrigated agriculture as a new livelihood. Nomads from the Bourkou-Ennedi-Tibesti region, who cannot return home because of Libyan occupation, claimed in interviews that they will remain in resettlement areas

and cultivate. Although this is not their preferred way of life, it is the best they can hope for. Many local farmers and displaced persons in Kanem Prefecture asked to be included in wadi projects or began wadi irrigation on their own.

Other people in wadi resettlement areas have left or will soon leave to try to reconstitute their herds. Many nomads in the central Sahelian region of Chad were reported to have already left SECADEV resettlement projects to reconstitute their herds. The resettlement schemes helped them survive until they could return to their former way of life. They say they will continue to use the irrigation skills they have learned in the resettlement projects now that they understand the economic benefits of wadi irrigation. Displaced persons in Africare and SECADEV wadi resettlement projects in Ouaddai were expected to return home before the next rainy season. They were engaged in productive activity pending return to their homes and learned off-season cultivation practices in wadis.

The carrying capacity of wadi irrigation over the long term is still in question. CARE is now undertaking a study of some of the problems of viability.

4. Adequate baseline data on population, mortality, and basic health, nutritional, and social indicators in Chad do not exist. However, all anecdotal and qualitative evidence indicates that mortality was significantly higher in Chad during the famine than in normal years.

5. Many people in targeted feeding programs upheld traditional values and shared their food with others who did not receive food, even though the ration was small. This was important in reaching larger numbers of beneficiaries, but it considerably reduced the ration size and nutritional value of the food assistance. Traditional patron/client relationships between the populace and sultans or other customary leaders also provided mechanisms for the distribution of emergency food aid to people who otherwise might not have received it.

6. Given the limited amounts of emergency food available in late 1984/early 1985, a time of great need, traditional famine foods were a major part of the rural population's diet. As staple foods became scarcer, people turned increasingly to famine foods for nourishment. Fortunately, in June 1985 ample rains brought out additional famine foods which, in the last few years, had lacked sufficient moisture to grow. These famine foods kept many from starvation and, when complemented by imported emergency foods, significantly enhanced the ability of the rural population to survive.

7. The impact of the drought proceeded through several stages, and the population responded to each stage in different ways as the severity of the famine grew in consecutive years (see Table 8).

-- In stage one the crop was so poor that food would not last until the next harvest. Married men left their villages to earn money for food. Pastoralists took their animals far from their barren pastures to search for the grass on which milk production depends.

-- In stage two, malnourishment began, especially among the poor and pastoralists; people sold their valuables and household goods to buy food. Herders moved their families and animals to the greener South in a desperate attempt to save some livestock.

-- In stage three, only the better off, who could still buy food, the weak, and those too poor to leave remained in the villages. Urban areas were flooded by badly malnourished displaced persons who tried to earn food or begged for charity. Some temporary camps sprang up.

-- In stage four, there was severe malnourishment. Temporary habitations around towns continued to grow with the addition of even more disadvantaged and vulnerable groups. The Chadian Government acted to reduce and then eliminate these temporary settlements and the migration to urban areas that created them. Food in urban markets became prohibitively expensive for many. Those who were still strong enough left the towns to seek famine foods in rural areas.

-- In stage five, the rains reappeared. Those who could planted crops, but many were too weak or without seeds or tools. Although some were able to reestablish themselves, many remained destitute.

3.3.2 Conclusions

1. Feeding programs targeted to individuals or families via food-for-work, resettlement, or supplementary feeding efforts showed greater impact on beneficiaries than did general feeding programs. The better performance of food assistance programs targeted on individuals and families is largely attributable to management, monitoring, and logistics systems that were in place for existing development programs and that were adapted to handle food aid for the emergency.

Table 8. Stages of the 1981-1985 Famine and Its Effects in Chad

Stage	Characteristics[a]	Remedies
1	Food will not last until next harvest; married men leave for urban jobs to get food; women sell goods, services, jewelry, household effects	In situ food for work
	Pastoralists take herds farther afield; milk production drops	Wells and boreholes for pastoralists
2	Malnourishment begins, especially among the poor and pastoralists; people sell goods, services, last of possessions	In situ feeding Food for work
	Pastoralists move family and dwindling herds south or abroad	Resettle pastoralists in better areas
3	Better off remain in villages; urban areas flooded by severely malnourished, displaced persons, beggars; camps spring up	Resettlement schemes Food for work Targeted feeding for worse off
4	Advanced aggravated malnourishment; camps with more disadvantaged and vulnerable groups; those who can, leave towns for famine foods in rural areas	Resettlement Food for work Feeding centers General distribution Seeds, tools, etc.
5	Rains return; better off have means to cultivate and reestablish herds; many stuck in camps and urban areas; poor are destitute, unable to begin again without help	Targeted feeding Food for work Seeds, tools, etc. Resettlement or transport home

[a]Although these stages appear to be linked with the years of the famine, they are actually tied to the amount of rainfall, the ecology of each area, the social constitution and condition of the populations, and similar factors.

2. Most food distribution in Chad was targeted at either the level of the individual/family or geographically to the areas most at risk. Thus, although the amount of food aid available between November 1984 and March 1985 was limited, it was going to those most in need.

3. Resettlement programs played a decisive role in eliminating the formation of temporary camps of displaced people and in enabling emergency food assistance to be provided in a context of productive activity.

4. Wadi resettlement was a successful short-term intervention. Given that no early warning system provided information in advance of population movements and that there were serious logistical problems in getting food into distant areas, the resettlement of nomads and sedentary and semisedentary farmers permanently or temporarily in wadis was a resourceful way to care for displaced persons. The projects in Kanem and Central Chad were instrumental in keeping displaced persons from flooding into the capital city or settling in camps.

5. The present success of Kanem wadi resettlement projects is evinced by their spread effect. The demand for more projects suggests that these initiatives meet an important need of a vulnerable population.

6. Wadi projects taught new agricultural techniques that can be useful even when beneficiaries do not settle permanently in project sites.

7. Problems such as salinity, waterlogging, labor intensity of shadouf (counter-poised water buckets) irrigation, land tenure, and marketing must be considered before wadi irrigation can become a development strategy for the long term. CARE's study will not address all these problems in depth.

8. It was impossible to quantify the exact impact of emergency food aid because of the lack of baseline data and inadequate monitoring. However, emergency food distribution, together with a significant yield of famine foods, did curb the elevated mortality induced by the serious 1984-1985 famine.

9. Sharing even meager food rations was an important factor in extending food aid to some who otherwise would have received none. Sharing did dilute the impact of the targeted rations, because food was shared beyond the immediate targeted family.

10. Famine foods played an important role in the survival of many Chadians because of the limited quantity of emergency food assistance available before April 1985 and because of the small amounts of food distributed to individual families through general distribution.

11. The specific type of emergency food intervention needed can be determined and steps taken to respond to the need if the stages of drought are understood and carefully monitored. (Early warning indicators of different drought stages in Chad are set out in Appendix D.)

3.3.3 Recommendations

1. Emergency feeding programs targeted on needy individuals and families, rather than general distribution, should be used whenever possible.

2. Where general distribution is used, it should include substantial monitoring and adequate transport capacity at the local level to ensure its effectiveness.

3. When appropriate, as in the case of advanced drought and famine, both targeted and general distribution feeding should be used.

4. The National Food Action Committee's decision to set priorities for emergency food distribution according to nutritional criteria should be continued.

5. Resettlement programs should be considered as a means of dealing with spontaneous camps and providing productive activities for displaced people during food emergencies in which migration already is occurring.

6. Wadi projects should be continued and expanded in the short run to assist displaced families who have not yet been helped or who are cultivating wadis without technical advice. Wadis should also be used to help resettle Chadians returning from Sudan and other countries. In addition to food, adequate management and technical and economic resources must be provided for such efforts.

7. Studies of the long-term carrying capacity of wadi projects should be conducted as part of any expansion and before longer term solutions are proposed.

8. A sample census and longitudinal demographic studies should be undertaken. This information is necessary if reliable quantitative estimates of morbidity and lives saved are to be obtained.

9. Sharing of rations should be accounted for in determining ration size and frequency when overall food availability is known to be inadequate.

10. A study should be made of famine foods and their characteristics because they played such an important role in the diet and survival of many Chadians.

11. Planners for the Government of Chad and donors should understand the different stages of response to famine by rural populations, especially when in situ feeding is a priority, and design their efforts to account for such responses. A microcomputer simulation model should be developed to train Government and donor personnel in dealing with these and other issues that arise during a food emergency.

12. An early warning system should include information and indicators that vary according to the different stages of a famine.

3.4 Health and Nutrition

The Government of Chad depended extensively on donors and PVOs to define the health and nutritional impacts of the famine. Integrating health programs with the emergency feeding program was hampered by lack of health infrastructure in Chad (see Appendix C). Only a major strengthening of the health infrastructure will put the Government of Chad in a position to play a major role in the next drought. In 1984-1985, nutritional surveillance reports done by PVOs formed the basis for determining priorities and localities for distribution of food.

3.4.1 Findings

1. The Centers for Disease Control's (CDC) rapid nutritional assessment described the extent and severity of the nutritional situation in Chad. It served as a springboard for additional actions necessary to strengthen emergency relief efforts. CDC's work revealed a very serious nutritional situation in Chad. Mortality, for example, was significantly higher in Chad during the famine than in normal years, although specific increases cannot be cited because of lack of baseline data.

2. Nutritional surveillance in Chad was carried out by various PVOs, principally MSF, and used to determine priority localities for emergency feeding. This surveillance brought the reliability of arm circumference as a measure of inadequate nutrition in Chad into question because of inconsistencies between results from arm circumference and height/weight measurements.

Vitamin A deficiency was suspected in the northern regions of Chad, especially among those suffering protein-energy malnutrition. This was not considered a priority health concern by PVOs because of their unfamiliarity with the diagnosis and treatment of vitamin A deficiency. Children with severe protein-energy malnutrition are susceptible to blindness, but this can be easily prevented by distribution of vitamin A tablets. To identify the problem and make this treatment possible, a vitamin A assessment was requested by USAID/Chad. However, bureaucratic delays in A.I.D./Washington prevented the assessment from being made.

3. USAID/Chad requested and received technical assistance in the health field to implement a vaccination program during the emergency and to develop a standardized nutritional surveillance reporting system. The Chadian Government was not able to implement a national vaccination program because of the lack of health infrastructure in the country. However, an immunization program and national vaccination plan were developed and accepted by the Government and donors. A standardized nutritional surveillance reporting system was developed but not fully implemented.

4. USAID/Chad developed a national pharmaceutical program to enable distribution of medical supplies furnished under an OFDA grant and by other donors. This program enabled distribution in 1985 of some medical supplies, particularly those furnished under the OFDA grant and by other donors.

Oral rehydration salts, for treatment of diarrhea, were supplied to Chad by various donors, including USAID/Chad. However, only a limited number of packets were used because of the lack of trained personnel and an insufficient number of personnel to distribute them.

5. There was excellent donor/Government coordination in monitoring and working together on the health aspects of the drought. This work has become the basis for the overall development of the health sector in Chad.

6. Rations were appropriate. Ration sizes and composition for general food distribution were consistent with standard nutritional requirements during emergencies (400 grams of cereal grain, which supplied approximately 1,500 calories per ration day). Some food-for-work rations were made up of grain and oil instead of being mixed. Rations in resettlement programs, school lunch programs, and food-for-work varied but usually contained cereal grains, cooking oil, and, in some cases, tinned fish and meat. Supplemental feeding was sometimes the only ration available to people, thereby becoming a "general" ration.

3.4.2 Conclusions

1. Rapid nutritional assessment is an important element in determining the extent and severity of food emergencies, especially when data are lacking from other sources.

2. Identification of priority areas for food distribution via nutritional surveillance was well done by the PVOs, and, generally speaking, the recommendations of the mobile evaluation teams were accepted by the National and Regional Action Committees.

3. Vitamin A deficiency was not assessed or treated but appears to have been a significant problem for some who lacked adequate food.

4. Expansion of the CDC's standardized nutritional surveillance methodology by the Chadian Government will facilitate future comparisons of work done by different PVOs.

5. Focused assistance to strengthen the Government's and the PVOs' child survival services (e.g., vaccinations and oral rehydration therapy) would be a wise investment for the future.

6. A developed health infrastructure is essential to mitigate the impact of future droughts on the health of the Chadian population.

7. Supplemental and general feeding were not well coordinated in many cases. As a result, many supplemental feeding efforts had no general rations to supplement and were not effective in terms of nutritional impact and cost.

3.4.3 Recommendations

1. Rapid nutritional assessment should be used to complement other data available in determining the extent and seriousness of food emergencies.

2. The available standardized nutritional surveillance methodology should be implemented in Chad, possibly as a by-product of the famine early warning systems.

3. Given the current controversy, a study should be made to assess the applicability and reliability of arm circumference measurement as an indicator of nutritional status in Chad.

4. An assessment of the seriousness of the Vitamin A deficiency in Chad should be made if there is another famine, and if a problem exists, measures should be taken to resolve it (e.g., training in vitamin A deficiency detection and distribution of vitamin A tablets to those at-risk.

5. Simple systems should be developed to monitor emergency food distribution at the local level to ensure that at-risk groups receive adequate food rations.

6. USAID/Chad should support the development of the Chadian health services, with special emphasis on child survival services such as vaccinations and oral rehydration therapy.

3.5 Transition to Development

The 1985-1986 transition to development is off to a fast start due to prompt Chadian Government action and strong support from the donors and PVOs. However, the changeover from the emergency food assistance program to development-oriented activities in 1986 will be difficult for some elements of the Chadian population (e.g., returnees from outside Chad, displaced persons in Chad who were not able to return to their villages in time to plant, and those who remained in situ but had no seed or the wrong seed in 1985).

3.5.1 Findings

1. There were pockets of continuing need in 1985-1986 even though there was adequate rain at the right times in most areas and Chad had its best harvest in 20 years--about 690,000 MT in food grains (FAO 1985a). In some areas, insufficient rain fell or flooding occurred; farmers had no seed to plant, were given the wrong seed, were too weak to cultivate their fields, or returned to their villages too late to plant. These at-risk groups, including expected returning displaced persons, are estimated at 415,000 in 1986 (United Nations Office for Emergency Operations in Africa December 1985, 44).

Carryover stocks of 51,000 MT at the end of October 1985 were available to meet the continuing needs of this at-risk population in 1985-1986. These carryover stocks (mostly wheat, corn, and supplemental foods) are needed to cover 1986 requirements for areas that did not have a good harvest and to assist displaced persons returning to Chad. In addition to the 51,000 MT carryover stocks, 32,000 MT of food pledged had arrived as of early

March 1986. Thus, the amount of emergency food available for 1985-1986 was 83,000 MT.[7]

2. There could be a sudden demand for additional emergency food if 1986 crop year rains are inadequate. Farmers have not had an opportunity to build up their reserves, and supplies of famine foods have been depleted. Fortunately, there is likely to be an estimated carryover of around 32,000 MT into 1986-1987, which could be used to support an expanded at-risk population pending arrival of additional emergency food.

3. In 1986, the Government of Chad moved to shift the network of national and regional action committees from their focus on emergency feeding to an emphasis on targeted developmental activities, primarily food for work (tree planting, irrigated perimeters, wells, fish culture, rural road repair, village sanitation, and wadi development). A draft decree setting out this new development orientation was circulated and is currently in use by the national and regional action committees. Moving from emergency relief to development has been problematic given the concern of the Government of Chad and donors about disincentive and dependency-creating effects of food aid and the need for substantial nonfood resources to support these activities.

PVOs are following the Government lead and implementing a new policy whereby 1986 activities using emergency food should be development-oriented and not continue or create a dependence on free food. Although agreeing with this principle, the evaluation team believes that it should be prudently applied. In some areas, many families remain destitute, and some emergency feeding will be necessary at the outset to give these families strength to plant and cultivate or work on food-for-work projects. In resettlement areas, continued food assistance will be necessary until families can grow enough food to feed themselves.

Likewise, resettlement programs are making the transition from emergency aid to development programs. However, particular problems have been identified in wadi resettlement and development as noted earlier. These include waterlogging, salinity increase, the labor requirements of the shadouf irrigation method, land tenure, and others. These problems will have to be solved if wadi resettlement is to be an important mechanism for longer term development and food self-sufficiency.

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[7]Food arrivals from all sources in 1984-1985 were 178,000 MT, of which 127,000 MT were distributed, leaving a carryover of 51,000 MT. Pledges for the same year were 210,000 MT; so, as of October 31, 1985, 32,000 MT were still to arrive. All the remaining pledges had been shipped. Thus, the total amount of food available for 1985-1986 was 83,000 MT.

Purchase of proper seed for such crops as sorghum, millet, corn, and rice, adapted for the specific area in which it is to be grown, was a problem in 1985. In most areas in Chad, some farm families did not get a harvest in 1985, and they will require seeds to plant in 1986. Additional seed is difficult to find given the variety of climatic conditions in Chad. Some PVOs have attempted to purchase seed from the 1985 harvest for distribution in 1986, but additional procurement will be required.

4. The use of food for work as a development tool is widely practiced in Chad by the WFP and CARE. Food is used to support work activities such as water-retention dams, wadi development, rural roads, village sanitation, school building, irrigated perimeters, and tree planting. The limiting factor is the lack of other needed resources in addition to food (e.g., money, technical/management skills, cement, bricks, steel bars, lumber, wheel barrows, picks, shovels, transport, pots for seedlings, and watering cans).

3.5.2 Conclusions

1. For 1985-1986, a substantial at-risk population continues to require emergency food assistance. However, there are sufficient carryover emergency food stocks to meet the needs of these 415,000 persons through harvest time.

2. The 1985-1986 transition year (following the first good crop year) after a protracted famine is critical. Many farm families were vulnerable going into 1986, with little or no reserves remaining from the first reasonable harvest in 5 years. Herders had lost much of their livestock and were equally vulnerable. A 1986 crop failure would place these groups in immediate difficulty. If a bad harvest occurs, some of the carryover food from 1984-1985 would be available to sustain these groups over until more food can arrive.

3. Some of the substantial amounts of emergency food in-country will need to be pre-positioned in regional warehouses before the rains begin. This food will meet planting season needs for those that begin to run out of food before the 1986 crop is harvested.

4. In transition years the possibility of a sudden, immediate demand for additional emergency food exists. Thus, there will be a need to know as early as possible the outlook for the transition year harvest. If donors wait until November or December to decide on emergency food requirements, the food called forward will arrive in late spring, several months after help is needed. This puts a premium on a Chadian Government early warning system becoming functional as soon as possible.

5. The effect on beneficiaries of reducing emergency food distributions during the transition period varies. Thus, the situation of beneficiaries needs to be studied so that the line between creating too much dependency on free food and cutting needed food rations off too early can be identified and used in making transition decisions.

6. The Government of Chad and donors have not developed a strategy for moving from emergency to development uses of food, even though PVOs and the National and Regional Action Committees have begun to work in this direction.

7. Wadi resettlement needs more evaluation before it becomes a long-term development strategy. Problems--salinity buildup, land tenure, marketing, and others--must be solved before the promise of this important activity is known.

8. Food for work and for other development purposes is well accepted in Chad and could be expanded as a tool for transition to full development if the necessary additional complementary resources are made available with the food. Food-for-work programs have the potential for creating development assets and for meeting shorter term income, employment, and nutritional needs. In Chad, food-for-work efforts existing prior to the 1984-1985 drought period actually served as infrastructure for better handling of the emergency (e.g., as programs enabling better targeting and management of emergency food assistance).

9. Seed and other transitional inputs are an important part of drought recovery, and early consideration and action are required to make appropriate varieties and volumes available in time for use when the first good rains occur.

3.5.3 Recommendations

1. If the 1986 rains in Chad are inadequate, the Government of Chad and donors should immediately call forward enough food to meet 3 months of estimated emergency needs. Because data on the quantity of food needed will be very sparse, a timely decision is imperative. Further calls forward should be based on a more detailed assessment of the extent of the 1986 crop failure.

2. Prior to the onset of the rainy season, food should be pre-positioned in the regional storehouses and in hard-to-reach areas so it will be available at the end of the hungry season and during the planting season. This pre-positioning would become vital should rains be insufficient and the famine foods limited.

3. USAID/Chad should ensure that other donor efforts are well coordinated with its famine early warning system project. A predisaster operational plan should be prepared, with the goal being an operational capability at least by the summer of 1987.

4. PVOs, WFP, and others moving from emergency relief activities to development projects should act to ensure an adequate transition period for beneficiaries who returned too late to plant and harvest in 1985 or who did plant but did not get an adequate crop.

5. USAID/Chad's transition plans should be coordinated with the United Nations, the European Economic Community, and other donors in Chad who are planning to move from emergency to development activities, particularly to the extent that this transition puts additional claims on the Chadian Government's limited resources. It would be helpful if a synthesis of all the activities in this field could be prepared, noting the differences in approach and financial arrangements being used.

6. Food-for-work or related food-for-development projects should be carefully planned and have assured sources of income and supply before they are launched. Their implications for recurrent costs should be documented--especially as food is used in the transition from emergency to development activities. A premium should be placed on projects of simple design that do not require large amounts of additional resources.

7. Wadi resettlement projects should be encouraged in 1986 as a way of helping displaced persons who wish to return to their villages or to learn new skills because their land or livelihood has been destroyed. Over the longer term, such questions as changes in the water table, salinity, land tenure, and protection against insects should be studied.

8. Sufficient sorghum, millet, and rice seed should be purchased early on, given the inherent difficulties of obtaining adequate quantities of the right seed and the time needed to pre-position the seed in the hard-to-reach areas.

9. The Government of Chad and donors should prepare a more complete strategy and plan for moving from emergency to development activities. Attention should be given to key issues identified as a result of the 1984-1985 experience (e.g., early warning, needs assessment, nutritional surveillance, health care infrastructure, agricultural prices and marketing, and seed and other input procurement and distribution). A Title II Section 206 policy initiative should focus on a food sector strategy.

4. GENERIC PRINCIPLES TO IMPROVE THE U.S. RESPONSE IN FUTURE FOOD EMERGENCIES

Based on the Chadian evaluation experience, several generic principles have emerged that should be applied when planning for any food emergency situation.[8]

1. The host government has a critical role to play; be sure to involve it. The Government of Chad, despite the many constraints of human and financial resources, was seen as a major player in determining the policy framework and allocation of food assistance. The Government set the policy of in situ feeding, which avoided the establishment of camps and massive migration to N'Djamena. The Government chaired the National Food Action Committee, made up of all bilateral, multilateral, and PVO donors in Chad, and was active in formulating issues and resolving problems. The Government infrastructure was used for the distribution of over 50 percent of emergency food aid. Mechanisms were developed to monitor, to the extent possible, food delivery and to institute appropriate sanctions in cases of abuse.

The donors believed it was essential to consult with and bolster the public sector. As a result, the food assistance activity was well coordinated, relationships between donors and Government and also among donors were strengthened, and the capabilities of the national and regional governments were substantially enhanced. The infrastructure now exists to improve the planning and implementation of development programs and to respond more effectively to future emergencies.

The government should play a pivotal function in managing and coordinating the emergency effort. Even if it has limited resources at its disposal, it should not be bypassed in the decision-making process. This is especially important in chronic-deficit countries to build up an institutional emergency preparedness capacity to respond to future disasters.

2. An emergency situation provides opportunities for innovation and rebuilding: take advantage of them. Chad has been torn by civil strife, foreign aggression, and natural disasters for more than a decade. As this series of devastations culminated in a 4-year drought, masses of people were close to starvation and migration was rampant. Something had to be done quickly and creatively to avoid social and economic disintegration. Government and the donor community began resettling people in hitherto underexploited wadis--dry lake and river beds in the Sahelian

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[8]A fuller set of principles, drawing from the experiences of Sudan, Mali, and Chad, are presented in the synthesis report (AID November 1986a).

zone, which could be cultivated with traditional water-lifting devices--and teaching them new irrigation and cultivation skills. This provided not only immediate relief but also the opportunity for productive work and eventual self-sufficiency. The establishment of camps was avoided, and many people were able to resume their village life in time to plant for the next year's harvest.

The emergency also spurred the establishment of logistical and health/nutrition infrastructure, previously nonexistent. Warehouses and garages were constructed and trucks purchased, all of which can be used for different purposes as the emergency situation improves. The beginnings of a nutritional surveillance system were established, as well as mechanisms for the delivery of medicines, vaccinations, and oral rehydration salts.

The pressure of an emergency situation can galvanize the energies of donors and governments to work together in imaginative and highly constructive ways that are not always possible in normal circumstances. This innovation should be encouraged. As the emergency situation abates, efforts should be made to ensure that these initiatives are solidified and carried over to longer term development efforts.

3. Intervene early to keep people at home. By October 1984, the bulk of famine migration was occurring in Chad. To keep people in their villages, food aid would have had to arrive and be distributed by October at the latest. The best time to begin in situ feeding is even earlier, when people begin to sell jewelry, household goods, and animals in order to buy food. Targeted feeding at this point can avoid displacement to urban areas or abroad, the formation of camps, and the creation of disadvantaged groups such as abandoned women with children. It is only at this point that much of the social disruption that famine provokes can be minimized.

Feeding people in their villages, although perhaps more complicated from a logistic perspective, would also ultimately be more cost-effective. Supplementary feeding centers and special health efforts would be less necessary; expensive airlifts can be avoided if food arrives on time. And because food-for-work activities could be carried out initially, the transition to development would be easier and more immediate. Dependencies would not be created, and people would already be in their villages ready to resume their normal life as soon as possible.

A better understanding of what happens during a famine can help to identify recurrent stages. Staple food and animal price fluctuations may provide an early indication of impending difficulty as can migration patterns, although it is not easy to distinguish the early signs of disaster from normal dry season migration to towns or the usual movement of herders to greener

pasture areas. An early warning system should be sensitive to socioeconomic indicators, such as migration patterns, changes in livestock and cereal prices, and herd movements. Monitoring this information on the ground can supplement remote-sensing technologies, crop needs assessment methods, and nutritional surveillance techniques to help predict disaster with enough advance notice to take preventive action.

4. There are many ways to distribute food; choose them wisely. In Chad, several delivery modes were used, including supplementary feeding centers, school feeding, food for work, and general distribution. Given the evolution of the famine and the logistical constraints, the most effective mix was the combination of supplementary feeding and food-for-work activities. Both of these interventions were well targeted and carefully monitored by PVOs. They were also complementary in that people had the strength to undertake physical activity. In addition, paternalistic relationships and traditions of communal sharing provided timely and equitable distribution mechanisms when other systems were not available.

Although general feeding was less effective, efforts were made via the regional action and distribution committees and the MSF mobile evaluation teams to pinpoint areas of greatest need and to monitor the distribution.

The optimum type of intervention will vary by stage of the famine, timing of food and transport, availability of nonfood inputs, type of implementing organizations, the level of monitoring required. All of these considerations need to be carefully analyzed in designing the most appropriate mix of assistance. Although logistical constraints are important, they should not alone determine the nature of the delivery mechanism. With sufficient advance planning, all of the critical factors can be adequately taken into account.

5. Food alone is not enough; get adequate funding. In Chad, the dollar and local currency resources were critical to the success of the food aid effort. The PL 480 Title II emergency food sales generated the local currency to defray the transport and logistical costs so essential to the regional- and local-level distribution of food. The dollars provided by the Office of U.S. Foreign Disaster Assistance (OFDA) and the PL 480 supplemental appropriation supplied valuable health inputs, seeds, tools, and transportation infrastructure, without which the relief and recovery effort would not have functioned as well as it did. Unfortunately, in Chad, several of these inputs were delayed for bureaucratic reasons, seriously impeding the distribution of emergency food assistance.

The timing and appropriateness of these complementary resources is as important as the arrival of the food component and should be given adequate planning. Despite the different funding sources and organizational structures, better coordination between food and cash resources is imperative.

6. Development and emergencies move at different speeds; remember to switch gears. The A.I.D. bureaucracy is structured to handle development programs, which frequently involves extensive discussion, analysis, and negotiation. The same procedures and requirements can sometimes be counterproductive in an emergency situation. Both the Office of Food for Peace and OFDA have mechanisms to expedite their activities in time of disaster. However, because of changes in funding sources, U.S. Congressional requirements, and the participation of several offices and organizations in the decision-making processes, it is not always possible to implement these more flexible procedures.

In the case of Chad, serious delays in the arrival of non-food inputs hampered the implementation of the relief program. The internal transportation grant to CARE, so essential to the delivery of food at the local level, was stalled by a disagreement over the type of grant instrument. Because of problems with the procurement of CARE trucks, the vehicles had to be airlifted so that they would arrive before the end of the rainy season. Likewise, an effort by USAID/Chad to involve another PVO in the supplementary feeding program in response to the alarm raised by the Centers for Disease Control (CDC) was delayed for months by discussions about overhead rates. The expeditious arrival of this organization would have been particularly important because of the reluctance of the more development-oriented PVOs to expand their relief activities.

For emergency programs to respond quickly and efficiently, normal bureaucratic requirements, designed for longer term development activities, must be expedited or adapted. Special procedures, such as delegations of authority to USAID Missions in the field, need to be considered to allow for the immediate mobilization of resources and appropriate delivery mechanisms.

7. Transition from emergency relief to development is complex; do not rush it. The Chadian Government's policy on in situ feeding and the donors' emphasis on development-oriented activities have provided an excellent basis for a rapid recovery and transition to longer term self-sufficiency. This movement from emergency relief to development may, however, be undertaken too precipitously given the impact of several years of drought, famine, the dislocation caused by massive migration, and the severity of deprivation endured by one-third of the Chadian population. A transition period may be necessary to allow people to recuperate and regain their possessions. To remove food and other assistance too rapidly and without adequate preparation,

instead of strengthening prospects for self-reliance, might undermine any growing sense of security, the only viable foundation for longer term development.

In making the transition from emergency to development, it is essential to consider the cumulative effect of several years of disaster, to understand the coping mechanisms individuals have used to deal with severe deprivation, and to assess adequately the possibilities for future self-sufficiency. Food and other assistance should not be withdrawn too quickly but should be organized in ways that are appropriate to the evolving situation. In this context, food-for-work programs can provide a necessary cushion while ensuring the important linkages with longer term development objectives and avoiding unwanted disincentive effects of free food distribution.

8. Emergencies tend to build up large infrastructure; take advantage of it. In Chad, considerable infrastructure (trucks, garages, warehouses, monitoring capability, and nutritional surveillance systems) has been created in response to the 1984-1985 drought. These systems are now functioning at peak performance levels and provide a valuable contribution to emergency preparedness. Means have not yet been found, however, to generate the income to defray their maintenance costs. When investing in substantial infrastructure, the recurrent costs of these operations should be planned for during the design phase, and alternate uses of these facilities during normal periods should be clearly defined.

Food for work proved to be an essential emergency mechanism for targeting food aid to vulnerable populations during the drought in Chad. It was also a significant intervention in resettling large numbers of displaced individuals and giving them the opportunity to grow their own food and learn new agricultural skills. This food-for-work infrastructure should not be dismantled but strengthened and adapted to a more developmentally oriented environment. Food-for-work programs, if properly planned and financed, can be used to provide supplementary income to the unemployed or underemployed, create valuable long-term assets for the country (e.g., wells or roads), and, most important, can serve in future emergency situations as a way of channeling food aid quickly and effectively at the village level.

9. Impact is elusive; try to capture it. The precise impact of emergency food assistance programs is difficult to assess. Baseline data are seldom available; "controls" seldom exist; people are too busy to collect good data, and so forth. In Chad, no census has been taken since the early 1960s, making population figures extremely unreliable. Thus it is impossible to determine how well a program did in terms of its objectives (e.g., saving lives, meeting a proportion of individual diets,

reversing severe or serious malnutrition, or curbing the incidence of malnutrition-related medical difficulties). Such assessments are needed, however, to improve emergency food assistance. Monitoring and evaluating efforts or systems must be an integral part of emergency food assistance programs to detect and measure impact.

Mechanisms for monitoring and evaluating impact should be made a part of emergency food assistance efforts. With the aid of these mechanisms, additional data should be collected to enable the impact of emergency food programs to be determined. Preplanning should include data collection for baseline purposes.

10. There is no substitute for experience. The emergency food aid program in Chad was managed by personnel experienced in planning for and dealing with food emergencies. The Food for Peace liaison officer had been in Chad during the earlier drought period. Recognizing staffing constraints, USAID/Chad hired two food monitors and developed a strategy using WFP as the major coordinator. WFP was supported by PVOs and arranged for strong coordination with the Government and other donors. Moreover, USAID/Chad staff were on top of most issues, taking the initiative in proposing appropriate administrative action for Washington, D.C., the Government of Chad, and often the other donors. Nonfood resources were made available even before the emergency food deliveries through a rice monetization program. Unforeseen events (e.g., the closing of the food transshipment route through Nigeria) were handled with minimal disruption in food distribution. This avoided the need for more costly interventions, such as airlifts.

Managing food emergencies efficiently increases the potential for impact and reduces costs. A.I.D./Washington should conduct an assessment of the management of each food emergency situation as it is declared. Additional experienced personnel should be supplied if needed, and sound management practices should be required. If adequate staff and financial resources are not available, alternative strategies should be explored.

A-1

APPENDIX A

STATEMENT OF WORK

1. BACKGROUND

Emergency food aid shipments to Africa have reached unprecedented levels. Between FY 1983 and 1984, U.S. emergency food aid more than tripled in tonnage and value; by June of FY 1985 approved emergency levels for Title II, Section 416, and food reserves combined had again more than tripled in tonnage (1.8 million metric tons [MT]) and quadrupled in value (US$738.4 million). For Sub-Saharan Africa alone, the U.S. Government has supplied more than 50 percent of total food aid requirements. Given the chronic nature of the emergency in Africa, this substantial commitment cannot be viewed as a one-time event. Not only will continued emergency relief be required in the short term, but given the magnitude involved, this assistance will have significant impact on the future of African development. How we program this food aid in the short and medium term can be an important determinant of whether we have positive or negative effects.

It is in this context that the assessment of our emergency food aid programs is conceived. Based on an evaluation of current operations, we will be exploring options for organizing emergency food aid to alleviate immediate distress while, at the same time, setting the stage for longer term development. This means looking at the larger picture when designing emergency interventions--the interrelationships between micro projects and macro policies, the linkages between emergency and regular food aid programs as well as with dollar-funded development assistance activities, and the effects of different distribution mechanisms. It means understanding better the smaller picture--the perceptions of beneficiaries, their socioeconomic and cultural environment, their decision-making processes, and how we can provide for their material needs while preserving a sense of self-worth and human dignity and fostering appropriate changes in behavior patterns. This assessment will provide the opportunity to take stock of our successes and failures to date with a view to programmatic changes and improvements. It is hoped that this review will contribute to improving the effectiveness of our food aid programs in the short and long term and also to developing new models or documenting existing ones that can be used by other donors and host governments.

As a first step in preparing for this review, the A.I.D. Bureau for Food for Peace and Voluntary Assistance canvassed all USAID Missions in Africa with emergency food aid programs regarding their experience during the 1983/1984 drought. An exhaustive list of questions was cabled to the field, and the response formed the information base for the Lessons Learned paper pre-

sented at the Food for Peace Officers Conference in Abidjan in April 1985. A primary purpose of this assessment will be to verify, supplement, and update this information with field visits, independent data analysis, and the perspective of program participants. Ultimately, we would like to develop guidelines for the design of future emergency food aid programs.

2. OBJECTIVES

1. To assess the timeliness, appropriateness, and impact of emergency food aid programs in Africa and suggest ways they can be improved

2. To assist USAID Missions, private voluntary organizations (PVOs), host governments, and other donors in programming future emergency, rehabilitation, and disaster prevention activities

3. To provide A.I.D. and the donor community with lessons learned regarding the planning, design, implementation, and evaluation of emergency food aid programs, with emphasis on how they can more effectively foster long-term development initiatives and contribute to increased food security

3. SCOPE OF WORK

The following questions are illustrative of the kinds of issues that should be examined in depth by the evaluation team in carrying out the objectives of this assessment. Emphasis, of course, will vary from country to country and will depend on the particular type of intervention being examined and the degree of severity of the emergency situation. Priority should be given to information gathering and analysis leading to improved programming, redesign, and exploration of new options for the formulation of emergency food aid programs.

3.1 Causes of the Emergency

-- What is the nature of the problem (both immediate and underlying causes)?

-- To what extent is the country's food problem related to agricultural and macroeconomic policies that may discourage local agricultural production and marketing?

-- How can the basic food problem be best addressed with emergency food aid?

3.2 Preparedness and Contingency Planning

-- Do national procedures exist for responding to emergencies? Are they followed when an actual emergency occurs?

-- Describe the types and levels of public and private sector security stocks, distribution mechanisms, and how they can be used in a disaster situation.

-- What planning activities could be undertaken to strengthen the government's capacity to respond more effectively to structural and emergency food deficit situations? (Consider the political will and financial capability of the host government to handle emergencies in this context.)

-- How do local people normally deal with food shortages, and how can this traditional coping behavior be reinforced?

3.3 Donor Coordination

-- Were adequate mechanisms in existence, or were they established, to coordinate assessments of donor requirements and implementation efforts?

-- Did these function effectively and how might they be improved?

-- Assess A.I.D.'s role in relation to that of the host government and other donors in initiating and sustaining coordination functions.

3.4 Needs Assessment

-- Describe the type of information (e.g., rainfall analysis, nutrition surveillance), collection system, analysis procedures, and use of data for early warning, assessment of requirements, declaration of disaster, design of programs, estimation of food input, and the like.

-- Has the logistical capacity of the government and the private sector been adequately taken into account in determining food aid levels?

-- Assess the accuracy, rapidity, and appropriateness of the needs assessment process and A.I.D.'s contribution.

3.5 Project Design

-- How were target areas and groups of beneficiaries selected?

-- Describe the basic characteristics of the beneficiary population (nomads, sedentary farmers, urban poor, displaced person/refugees), and their relationships to each other. How do these factors influence the food distribution mode selected.

-- Have local food preferences and food consumption patterns of the target population as well as local market prices been adequately considered in the choice of commodities and the selection of distribution systems?

-- Were necessary complementary inputs (i.e., seeds, vaccines, materials, technical assistance) incorporated into the food emergency program?

-- To what extent have participation of beneficiaries and utilization of local organizational structures/resources been built into the project design?

-- How were costs a factor in the design of the program?

-- Were provisions for termination of emergency food aid and/or transition to rehabilitation and longer term development foreseen during the planning stages?

-- Have linkages with regular food aid programs and other complementary resources been explored?

3.6 Management, Monitoring, and Evaluation

-- Did the host government, USAID Mission, PVOs, and local community groups organize themselves effectively to manage the emergency? Discuss in terms of relief planning, organization, resource allocation, postcrisis rehabilitation, and longer term sustainability.

-- What systems are in place for effective commodity accountability and program monitoring? Describe the information generated, costs, manpower, and similar features.

-- What are the respective roles of the host government, USAID Mission, PVOs, community groups?

-- How can management, monitoring, and evaluation be improved?

3.7 Timeliness of Emergency Response

-- Discuss the effectiveness and quantify the exact time frames for the following:

- Needs assessment and project design
- Approval process
- Procurement of commodities
- Delivery of commodities to the country
- Internal distribution of food to the target population
- Arrival of technical assistance

-- Describe constraints and how they were overcome. Suggest ways of expediting these procedures in the future. How can the private sector be used more effectively in the movement of food commodities?

-- If food commodities did arrive late, were appropriate actions taken to avoid disincentive effects on local production and marketing?

3.8 Program Results

To the extent possible, and taking into account the constraints inherent in disaster situations, the evaluation team will present evidence of the effectiveness/impact of emergency interventions in terms of the following:

-- Targeting: extent to which areas and/or victims with greatest need are being reached

-- Coverage: percentage of the affected population being assisted (by the United States, by other donors)

-- Increased availability of food in target areas and consumption by vulnerable groups

-- Incentive/disincentive effects on agricultural production/prices/incomes

-- Improved nutritional and health status of target groups

-- Decreased infant and child mortality

-- Demographic effects: population movements to centers and urban areas, age/sex distribution, and the like

-- Dependency/self-reliance: Have relief programs weakened the self-help capacity of individuals and community groups? How can programs be better organized to re-empower individuals and strengthen local decision-making and resource generation/productivity?

-- Policy and institutional reform: How has the emergency affected ongoing food strategy plans and price restructuring efforts? How has the emergency intervention strengthened the capacity of the government to respond more effectively to future emergencies?

3.9 Policy Issues

The following issues are complex and deserving of separate studies in themselves. Yet they are extremely important in thinking about programming options and provide a useful backdrop for discussions. As appropriate, the team should address these concerns in the context of recommendations for program improvement/redesign and lessons learned:

-- Relative effectiveness (impact and costs) of various distribution modes (e.g., community free distribution, maternal and child health supplementary feeding programs, food for work, monetization, triangular transactions, rehabilitation activities) and consideration of alternative distribution mechanisms

-- Comparative advantage and cost-effectiveness of different food distribution channels (WFP, PVOs, host governments) and criteria for selecting among them

-- Linkages with regular food aid programs and other development assistance activities

-- How food emergency programs can be planned to support sector and macroeconomic policy reforms and strengthen food self-reliance, disaster prevention, and longer term development initiatives

-- Criteria for determining when and how emergency programs should be phased in and out

-- Opportunities and constraints presented by the "chronic food emergency syndrome" with regard to funding mechanisms, multiyear planning, program design, conditionality requirements, and the like

4. EVALUATION APPROACH AND DURATION

All team members will meet in Washington, D.C. during the first week of the assessment to review and clarify the scope of work, develop field protocols for site visits and interviews with local officials and program participants, and hold discussions with key A.I.D., USDA, State Department, OMB, and PVO officials.

After this prefield analysis is completed, the study teams will proceed to the country to carry out field investigations: reviewing additional documentation; interviewing key U.S. Mission, host government, PVO, and other donor officials; and inspecting appropriate field sites. Specific attention should be devoted to capturing the perceptions of program participants, either through structured interviews or informal conversations in their own language. The fieldwork will be carried out in approximately 18 working days per team member. If feasible, country studies should be scheduled in an iterative manner so that the approach can be tested and refined through the evaluation process.

Upon return from the field, each team will review its findings and will prepare a draft country report. When all the country studies have been completed, Mission comments received, and the final reports prepared, the contractor's core technical staff will prepare a synthesis of findings and recommendations, drawing out lessons learned about what works, what does not work, and why, from both the operational and policy perspectives.

USAID Missions would be expected to collect all existing data and reports and other relevant records for the team before their arrival. In those instances where in-house or local contractor capability are available, USAID Missions might conduct interviews with program participants in advance of the team's arrival. To the extent possible, USAID Missions should provide logistic support for the team while in-country.

5. COUNTRY SELECTION

Up to four countries will be selected on the basis of data availability, mix of distribution mechanisms and implementing organizations, type of beneficiary population, and government approaches/policies. The receptivity of USAID Missions/host governments, the ease of travel, and the representativeness of the emergency situation should also be taken into account. Because of the difficulty in operationalizing concepts such as "recovery," "rehabilitation," and "transition from relief to long-term development," the selection of programs and countries is critical to capturing the range of existing or potential experience.

6. TEAM COMPOSITION AND LEVEL OF EFFORT

In conducting these country assessments, the contractor will provide at least three specialists per country. Given the range of skills required to carry out this scope of work and the short time frame, the background of these specialists will vary according to the case in question, but must include all of the following areas of expertise:

-- Language skills and country-specific experience

-- Agricultural economics

-- Public health/nutrition

-- Social anthropology

-- Food logistics

-- Policy analysis/program design/evaluation

At least one of the team members, most probably the team leader, will be on the contractor's core technical staff. Although continuity in the evaluation team is assumed, it is not essential for the same consultants to go to all countries.

7. REPORTS

The team will submit a report on each country study as well as a synthesis containing an analysis of those factors that appear to determine program effectiveness, recommendations on how A.I.D. can improve its programming of emergency food aid, and lessons learned. Before departure from each country, the team will have engaged all concerned parties (A.I.D., WFP, other

donors, host country, PVOs) in a dialogue concerning their findings and recommendations. The draft country reports are due in A.I.D./Washington no later than 2 weeks after each team has returned to the United States. Five copies will be delivered. Missions will be asked to complete their reviews and respond with comments by cable within 2 weeks of receiving the draft. The final report (including an executive summary and synthesis of findings, recommendations, and lessons learned) will then be prepared and ready for print within 2 weeks of receiving all Mission comments. Ten copies of this report will be delivered. Any translation of the report will be the Mission's responsibility.

APPENDIX B

SUMMARY OF THE 1984-1985 FAMINE RELIEF PROGRAM

The 1984-1985 Emergency Food Assistance Program was a combined effort, as demonstrated by the figures below:

Total Amount Pledged:	210,048 metric tons (MT)
Total Amount U.S. Origin:	75,480 MT (36% of total amount pledged)

Total Amount U.S. Food Aid of which:

45,588 MT (60%)	was delivered through the World Food Program (WFP)
12,392 MT (16%)	was delivered through CARE
10,000 MT (13%)	was delivered through LICROSS
7,500 MT (10%)	was delivered through Chad's National Cereals Office (ONC)

Total Amount All Pledges of which:

114,245 MT (54%)	was delivered through WFP
12,392 MT (6%)	was delivered through CARE
17,522 MT (8%)	was delivered through LICROSS
32,500 MT (15%)	was delivered through ONC
36,150 MT (17%)	was delivered through Chad's Ministry for the Control of Natural Disasters (MLCCN)

More food aid was distributed during the 1984-1985 famine than ever before. The total was 126,828 MT, of which approximately 75 percent was delivered to the North and 25 percent was delivered to the South. Comparison of 1984-1985 food distribution with previous years is as follows:

1984-1985	126,828 MT (representing 60% of amount pledged)
1983-1984	74,014 MT
1982-1983	25,000 MT

Of U.S. emergency food aid pledged for 1984-1985, 67 percent had been distributed by October 31, 1985. More could have been delivered had WFP issued its call forward earlier. WFP/Chad and USAID/Chad had quantified and identified PL 480 needs in November 1984. WFP/Rome issued shipping instructions in December 1984, resulting in the first food arriving in N'Djamena on May 1, 1984. Delays also resulted from Nigeria's refusal in March to allow transshipment of food aid to Chad. Approximately 27,000 MT thus had to be diverted from Lagos to Douala.

The 1984-1985 relief program accomplished much. Among its major achievements are the following:

-- Averted wide-scale deaths

- The Centers for Disease Control (CDC) predicted impending catastrophe during its January/February assessment

- CDC determined that a major disaster had been prevented during its May/June assessment

-- Avoided repetition of costly airlift

-- Prevented establishment of camps; emphasis was placed on resettlement in food-for-work projects; more than half of the estimated 500,000 displaced population were resettled.[1]

-- Avoided emergency food distribution in N'Djamena; our emergency sales program contributed to increased food availability and price stabilization in the capital.

The number of beneficiaries of the 1984-1985 food emergency effort increased over time.

-- During the first 5 months of famine (November-March), relatively small amounts of food aid were distributed due to the pipeline gap that existed. Approximately 40,000 beneficiaries were served.

-- During the final 7 months of famine (April-October), significantly higher amounts of food aid were distributed. Approximately 1 million beneficiaries were assisted.

-- Concurrent with dry ration distributions, wet feeding occurred at centers operated by LICROSS, UNICEF, the International Human Assistance Programs, World Vision Relief Organization, and Medecins sans Frontieres. Approximately 367,000 beneficiaries were helped.

The generally logistical aspect of the program contributed to its success. Specific aspects were as follows:

An increase in the food forwarding capacity through Cameroon from 5,000 MT/month to 25,000 MT/month

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[1]Evaluation team estimate based on revision of USAID/N'Djamena Internal Memorandum, December 1985.

-- Construction of a temporary, and then, a semipermanent bridge across the Chari River

-- The pledge of 174 additional trucks

APPENDIX C

HEALTH AND NUTRITIONAL IMPACTS

1. HEALTH IMPACT

The lack of a developed health infrastructure in Chad severely hampered efforts to link health interventions to emergency food distribution operations. Localized health interventions involving vaccinations and oral rehydration therapy were carried out on a small scale in a few regions of the country by the Chadian Epidemiological Service, Medecins sans Frontieres (MSF), the Swiss Cooperation, and UNICEF, using Swedish and Italian medical teams. However, these efforts were neither systematic nor widespread.

USAID/Chad requested and received technical assistance from the Centers for Disease Control (CDC) to implement a vaccination program during the emergency. Given the lack of health infrastructure in the country, the CDC technical assistance teams were able to implement a national vaccination program. However, the technical assistance did lead to the implementation of an immunization training program, and a national vaccination plan was eventually developed.

USAID/Chad had supported development of the national pharmaceutical distribution system in Chad through a previous recovery and rehabilitation project. This system enabled national distribution of a major shipment of emergency medical supplies funded by the Office of U.S. Foreign Disaster Assistance (OFDA). Oral rehydration salts provided by a variety of donors were not as widely distributed as expected, given the lack of a health delivery system and trained personnel.

Donor/Government coordination in the health sector is excellent in Chad. This coordination is the basis for the overall rehabilitation of the Chadian health infrastructure decimated by 6 years of civil war. A fully developed health infrastructure is essential to mitigate the impact of future droughts on the health of the Chadian population.

USAID/Chad and A.I.D./Washington should recognize the positive spirit of rebirth in the Chadian health sector. Focused assistance to strengthen the ability of the Government and nongovernmental organizations to deliver child survival services such as vaccinations and oral rehydration therapy would be wise investments for the future.

Given the absorptive capacity of the USAID/Chad staff, this necessary assistance should be channeled through a private voluntary organization (PVO).

1.1 Findings

1. Very few health interventions were carried out by the Government and nongovernmental organizations in Chad. A few localized vaccination and oral rehydration therapy programs were run by the Chadian Epidemiological Service, MSF, Swiss Cooperation, and UNICEF using Swedish and Italian medical teams. These efforts were not systematic nor widespread; they were concentrated in Kanem.

2. USAID/Chad recognized the need for immunization assistance during the emergency and obtained outside technical assistance from CDC to strengthen vaccination coverage in the country. Following reports from a nutritional assessment team that measles might become a problem during the dry season, USAID/Chad requested and received several technical assistance teams from CDC beginning in March 1985. Technical assistance to strengthen vaccination coverage against measles was provided to USAID/Chad through May 1985.

3. USAID/Chad expected the CDC technical assistance team to provide vaccinations to vulnerable groups. This was not done. Instead, a training course was designed and implemented, and a national vaccination program plan was developed for the country. The CDC technical assistance was limited by funding constraints and the time available for team members to be in-country, because of other commitments and professional responsibilities.

CDC initially carried out a technical analysis of the existing Chadian vaccination program. Subsequent teams designed and implemented training activities and developed a national vaccination plan.

4. OFDA sent emergency medical supplies that were distributed through the national pharmaceutical distribution system. This system was in place because of earlier recovery and rehabilitation assistance provided by A.I.D.. OFDA emergency medical supplies valued at US$350,000 were sent to Chad during the emergency. These supplies were distributed to health centers through a pharmaceutical supply system that had been strengthened by a 1983 USAID/Chad grant from refugee recovery and relief funds.

The pharmaceutical supply project also benefited from local currency generated from PL 480 grain sales. Distribution of these medicines could not have occurred had the distribution system not been strengthened.

5. Oral rehydration salts were requested in large quantities by donors to meet anticipated demand. Three-and-a-half million packets of oral rehydration salts arrived in-country during the emergency, and another two million are expected in the near future. A significant amount of oral rehydration salts that arrived could not be distributed, given the limited health infrastructure in Chad and the utilization rate of oral rehydration salts in the country.

1.2 Conclusions

1. Civil unrest decimated the health infrastructure in Chad, and insufficient numbers of trained health personnel in the Government and in nongovernmental organizations involved in emergency food distribution efforts limited the implementation of health interventions.

2. USAID/Chad acted wisely to call in technical assistance to strengthen vaccination efforts in Chad.

3. CDC is not an implementing agency. It cannot be expected to vaccinate children during emergency situations. CDC can, however, provide technical assistance for the development and strengthening of existing infrastructure, as it attempted to do in Chad.

4. Earlier assistance by USAID/Chad to strengthen the delivery of medical supplies in Chad was an excellent example of how recovery and rehabilitation projects can benefit future emergency situations.

5. Although increased incidence of diarrhea is always associated with emergency situations, oral rehydration salts alone will not treat the problem. Proper implementation of oral rehydration therapy programs demands trained personnel and a developed health infrastructure.

1.3 Recommendations

1. USAID/Chad and A.I.D./Washington should recognize the positive spirit of rebirth in the Chadian health sector. There is excellent donor/Government coordination in the health sector in Chad. This coordination has become the basis for major rebuilding of the Chadian health infrastructure decimated by 6 years of civil war.

A developed health infrastructure is essential to mitigate the impact of future droughts on the health of the Chadian population.

Focused A.I.D. assistance in the health sector at this time could have a substantial leveraging effect on health policy dialogue, especially in relation to issues concerning health cost recovery, fees for service, and emphasis on preventive, child survival activities.

2. Focused assistance to strengthen the ability of the Government and nongovernmental organizations to deliver child survival services such as vaccinations and oral rehydration therapy should be undertaken as soon as possible in Chad.

The Child Survival Action Program should consider supporting vaccination activities in Chad. The United Nations Development Program, through a Child Survival Program grant from A.I.D./Washington in FY 1986, will play a major role in developing a national vaccination program in Chad. This assistance is limited, however, and should be strengthened with additional technical assistance and program support from other sources. Given the absorptive capacity of USAID/Chad management, this assistance should be channeled through an American PVO.

The Government of Chad should be pressured to name a coordinator for the national oral rehydration therapy program. An oral rehydration therapy support project is funded and in place in Chad. Considerable delay in the startup of this program has been due to the lack of a full-time Chadian national coordinator. This problem should be resolved as soon as possible.

2. NUTRITIONAL IMPACT

Significant efforts were made in Chad to target emergency food distribution. Nutritional surveillance surveys were carried out early by various nongovernmental organizations in Chad, and these surveys were used to determine priority geographic regions and localities for emergency food distribution efforts (Table C-1).

Some regions of the country were better surveyed than others, due to the presence of more regional surveillance teams or better trained personnel. Regional teams used a variety of nutritional surveillance methodologies, and results often were not standardized or comparable.

Table C-1. Nutritional Status and Food Aid Needs in Chad by Region, December 1984 to May 1985

Prefecture	Total Pop.[a] (000s)	Surveyed Pop.[a] No.	Surveyed Pop.[a] %	Surveyed Population[a] Req. Food[b] (low est.) No.	Surveyed Population[a] Req. Food[b] (low est.) %	Total Population[a] Req. Food[b] (high est.)	Tons[c] Required per Month Low	Tons[c] Required per Month High	Tons Deliv./ Month (Jan-May)
Batha	410	153	37	149	97	398	1,790	4,772	1,209
Bourkou-Ennedi-Tibesti	103	0	0	-	-	21	0	247	112
Biltine	200	43	21	38	89	172	455	2,064	779
Ch. Baguirmi	719	134	19	92	69	496	1,104	5,953	1,403
Guera	234	57	24	36	63	147	426	1,769	507
Kanem	234	234	100	45	18	45	536	536	762
Lac	158	96	61	28	29	30	336	360	80
L. Occidental	324	0	0	-	-	65	0	778	0
L. Oriental	350	0	0	-	-	70	0	840	0
Mayo-Kebbi	757	0	0	-	-	151	0	1,817	0
Moyen-Chari	582	92	16	62	67	390	744	4,679	0
Ouaddai	411	83	20	52	63	259	624	3,107	958
Salamat	121	21	17	9	43	52	108	624	93
Tandjile	341	105	31	101	96	327	1,212	3,928	386
Total	4,958	1,031	21	611	59	2,623	7,335	31,475	6,289[d]

[a]Estimated 1984 population; the actual population may be somewhat less and regional estimates may vary greatly due to migration.
[b]Defined as a score of 30 or greater. Low estimate assumes only persons surveyed need food aid; high estimate assumes persons surveyed are representative of the entire population.
[c]Based on an estimated 400 grams (1,500 kilocalories) per person per day for those requiring food aid.
[d]The monthly average does not include food distributed in the food-for-work projects. The average in the 7-month period from November 1984 to May 1985 was 8,509.

Source: Remington (1985).

Impressive and creative efforts were made in Chad to target emergency food distributions to at-risk groups identified by nutrition surveillance activities. Nearly 45 percent of emergency food distributed in Chad went to targeted, regular, in situ food distribution operations for people identified to be in nutritional peril. The evolution of the institutional situation is shown in Table C-2.

In situ, targeted supplemental feeding programs, food-for-work activities, emergency resettlement operations and school feeding programs were more effective in reaching at-risk groups than general emergency food distributions. General emergency food distributions were less targeted or regular because of variable estimates of the size of at-risk groups, logistical constraints, and political pressure at the local and regional level to direct food to the population at large.

General emergency food distributions were not monitored below the canton level of each region. Given the limited time available to the evaluation team, it was not possible to ascertain if all people considered most at-risk within regions received adequate supplies of emergency food.

USAID/Chad called on the CDC to carry out a rapid nutritional assessment in Chad during the early stages of the emergency situation. Because the CDC assessment team had severe time and budget constraints, they had to rely on arm circumference as a measure of nutritional status and could only conduct survey operations in limited areas of the country.

The results from the CDC survey spurred action to resolve logistical constraints to deliver food aid in-country and set the stage for other interventions to develop activities related to nutritional surveillance and an expanded immunization program.

Many observers, however, felt that the CDC results overstated the severity of the Chadian situation and that the increased food recommended by the team was unnecessary. These sentiments were due in part to skepticism of arm circumference as a reliable measure of undernutrition in Chad and a belief that the role of traditional famine foods in the survival diet had been underestimated.

USAID/Chad also requested and received technical assistance from CDC to develop a nutritional surveillance system during the emergency situation. This led to the development of a standardized nutritional surveillance system that was accepted by the Government and donor community.

Table C-2. Evolution of the Nutritional Situation in Chad, November 1984 to August 1985

Prefecture	Total Population[a] (000s) (estimated)	Percentage of Population Assessed 1984/1985		Score[b] 50+	30-49	<30
Kanem	234	Nov-May	100	15.3	2.9	81.8
Lac	158	Nov-May	61	0	29.2	70.8
		June-Aug	54	0	3.5	96.5
Batha	410	Nov-May	37	23.1	74.2	2.6
		June-Aug	14	3.5	14.7	81.8
Guera	234	Nov-May	24	15.0	47.5	37.5
		June-Aug	14.5	1.8	80.2	18.0
Biltine	200	Nov-May	21	4.3	81.5	14.2
		June-Aug	26	11.4	38.7	49.9
Ouaddai	411	Nov-May	20	15.5	47.9	36.6
		June-Aug	14	1.4	74.6	24.0
		(except south Ouaddai)				
Salamat[c]	121	Nov-May	17	42.9	0	57.1
Chari-Baguirmi	719	Nov-May	19	14.9	53.7	31.4
		June-Aug	24	0.6	48.6	50.8
		(areas not greatly affected)				
Tandjile	341	Nov-May	31	1.9	94.3	3.8
Moyen-Chari[d]	582	April	16	43.9	23.9	32.6
		June-Aug	34	42.3	54.9	2.8

[a]Estimated.
[b]A score of 30 or greater indicates a requirement for food aid.
[c]Chiefly zones with displaced populations.
[d]Chiefly Koumra subprefecture.

Source: FAO (1985b, Annex 22, p. 51).

Vitamin A deficiency was suspected in the northern regions of Chad, especially among those affected by protein-energy malnutrition. Vitamin A deficiency was not considered a priority concern by the Government or relief agencies during emergency operations, primarily because of their unfamiliarity with the problem.

USAID/Chad expressed interest in having a rapid Vitamin A assessment carried out in the country in April 1985. This survey was not undertaken, due to bureaucratic delays and funding constraints in A.I.D./Washington.

Rations were consistent with local tastes and preferences. Sorghum was the major food supplied through the emergency distribution program and supplemental feeding activities relied on fortified blends, mainly corn-soya milk, powdered milk, oil, and sugar.

Ration sizes and composition for general food distributions were consistent with standard nutritional requirements during emergencies. The recommended emergency ration in Chad was 400 grams of cereal grain per person per day in emergency feeding programs, which supplied approximately 1,500 calories per ration day. Table C-3 shows ration composition with respect to medical/nutrition scores as applied in Chad in 1984-1985.

Rations in resettlement programs, school lunch programs, and resettlement activities varied but usually constituted at least 400 grams of cereal grains per ration day, cooking oil, and in some cases tinned fish and meat. Supplemental feeding centers served women and children with a ration prepared daily that supplied beneficiaries with approximately 550 to 800 calories per ration day. In many cases, supplemental feeding programs included dry ration distribution as a complementary activity.

In most cases, people ate famine foods such as wild grasses, leaves, roots, and fruits whenever they were available. These famine foods were relatively bountiful throughout most parts of the country and supplied significant nutritional intake to many of the at-risk population.

Mortality was significantly higher in Chad during the drought than in normal years. The lack of baseline information, however, makes it difficult to ascertain the increase in mortality among the population at large.

In the North, it appears that mortality was greatest between October and January 1984, when people migrated from their villages in search of food after the poor harvest. Mortality also peaked again during May to July 1985, at the beginning of the rainy season, before traditional famine foods could be eaten.

Table C-3. The Medical/Nutritional Score and the Nature of the Intervention

Degree of Urgency	Score	Observations	Response
Acute Nutritional Urgency			
Catastrophic	70+	Adults and adolescents malnourished in addition to children; 35% of children weigh less than 80% of normal weight; elevated death rate	Distribution of porridge or dry rations to the entire population
Immediate	50-69	25-35% of children malnourished; elevated death rate	Supplementary porridge for at-risk groups
Medium	30-49	15-25% of children malnourished; no increased death rate	
Deferred Nutritional Emergency	15-29	15% of children malnourished	Limited food aid
Chronic Nutritional Problem	<15	Stable situation, secular, not tied to present crisis	Continued supplemental programs for at-risk groups

In parts of the South, mortality probably began rising in November 1984, as villagers scattered from their homes to travel to more secure areas after civil unrest forced them from their villages before harvesting their 1984 food. Mortality steadily increased during their migration and return in February and did not peak until emergency food distribution began in April 1985.

In the North, emergency food distributions were able to buffer the rising mortality among some of those who had left their villages in search of food and later became part of targeted resettlement activities in the early months of 1985. More people could have been assisted if more food and delivery infrastructure had existed.

Throughout the spring and summer of 1985, an abundant crop of famine foods in the North, coupled with general emergency food distributions, significantly curbed rising mortality in the region. Famine foods were a major factor in the reduction of mortality during the summer of 1985, just before the harvest of the 1985 food crop.

In parts of the South, no emergency distributions could begin before March 1985, due to civil unrest. In areas where relief operations were undertaken, mortality rates were significantly curbed due to extensive, regular emergency food distributions and targeted supplementary feeding of vulnerable groups.

Early warning systems are needed to reliably assess emergency needs and give more lead time to start up emergency food distribution efforts. A standardized nutritional surveillance system should also be implemented in Chad, possibly as a by-product of the famine early warning system assistance slated to begin in Chad in mid-February 1986.

Rapid assessments of nutritional status in emergency situations are useful and must be given adequate implementation time and financial resources. In emergency operations such as in Chad, where nearly US$100 million was spent in emergency relief, scientifically rigorous early assessments of the extent and severity of malnutrition can be critical in planning relief operations.

A study needs to be carried out in Chad to assess the reliability of arm circumference as an indicator of nutritional status. Another study should be carried out to determine the survival role that famine foods play in emergency situations.

Simple systems are required to monitor emergency food distributions at the local level to ensure that at-risk groups receive adequate food rations. Postemergency evaluations, such as the study that MSF is currently conducting in Chad to ascertain how much food was received by at-risk groups during emer-

gency feeding distributions, should be supported and the results circulated for review by donor agencies.

In emergency situations, attempts should be made to target food distributions directly to at-risk groups using food-for-work projects, resettlement or in situ activities, school feeding programs, or focused supplemental feeding operations that involve dry distributions and screening based on nutritional needs.

Programs such as these will require additional resources to ensure adequate management and material support. Projects most suitable for this type of intervention should be oriented to infrastructure development, such as road building and maintenance, reforestation, or public works. They should be instituted in areas of nutritional need.

An assessment of vitamin A deficiency in Chad should be made as soon as possible. Training in the identification and treatment of vitamin A deficiency should be given to relevant personnel in the Ministry of Health and nongovernmental organizations involved in drought relief efforts at the onset of any emergency feeding operation. A standard dose of 200,000 international units of vitamin A should be recommended as standard treatment for any child suffering from acute protein-calorie malnutrition.

2.1 Findings

1. Significant efforts were made in Chad to target emergency food distributions to areas of nutritional need. Rapid nutritional status surveys were carried out by various nongovernmental organizations to determine at-risk groups. These surveys were used as the basis for decisions at the national and regional level concerning priority food distribution areas.

2. Some regions of the country were better surveyed than others. In the South, few surveys could be carried out due to civil unrest. In other regions of the country, the quality of data from nutritional surveys varied, depending on the training of survey teams, the survey methodology employed, and the number of teams operating in the region.

In some cases, organizations questioned the validity of the information that was collected from nutrition surveys. Due to a lack of standardized techniques, surveys often did not gather comparable data.

3. Creative efforts were made to channel nearly 46 percent of all emergency food distributions to at-risk groups through resettlement operations, in situ programs, food-for-work activities, and supplemental feeding in areas of nutritional need. In

these programs, at-risk groups received a more or less regular ration at critical times during the emergency period. Resettlement and in situ activities attempted to keep people engaged in constructive labor near or in their villages.

Food-for-work activities were expanded from previous activities or created to serve the needs of those identified to be nutritionally at-risk. Supplemental feeding centers were set up in areas of nutritional need and targeted to women and children identified as nutritionally deprived.

4. General emergency food distributions, as opposed to in situ regular food distributions, were not always able to reach at-risk populations due to variable estimates of the size of the at-risk population, logistical constraints, and political pressure at the local and regional level to target food to the population at large. In various reported cases, general food distribution went to the population at large, rather than to those at serious nutritional risk This was due in part to political pressures at the regional and local levels to distribute food equally among the population.

In some cases, the number of people at-risk was higher than had been estimated, so more people had to be fed from an inadequate predetermined supply. Logistical constraints affected all distribution efforts to some extent, especially during the rainy season.

5. It was not possible to monitor or evaluate emergency food distributions below the canton level of each region. Records are not available below the canton level to enable emergency food distributions to be traced. For this reason, and given the limited time available to the evaluation team, it was not possible to ascertain how many people who were at-risk received adequate supplies of emergency food.

MSF is conducting a study to determine how at-risk groups identified in their nutritional surveys benefited from emergency food distribution. MSF teams in the field are trying to quantify the amount of food at-risk groups actually received during the emergency. This study will provide an important view of what happened below the canton level in Chad during the emergency.

6. The nutritional assessment team of the Centers for Disease Control (CDC) described the Chadian situation at a critical time, but their work was severely constrained by the short time they had available for the task and limited financial resources. Given these constraints, the CDC team had to adjust its technical approach to rely on arm circumference and to undertake a survey with a sample size too small to permit interregional comparisons of nutritional status.

7. The CDC rapid nutritional assessment described the extent and severity of the nutritional situation in Chad and served as a springboard for actions necessary to strengthen emergency relief efforts. The CDC assessment revealed a very serious nutritional situation in Chad. Recommendations in the CDC report to strengthen vaccination and nutritional surveillance activities were all followed through with action by USAID/Chad and A.I.D./Washington. The CDC assessment strengthened efforts to resolve certain logistical problems in the emergency distribution program.

8. Many observers believed that the CDC assessment overstated the severity of the Chadian situation and that the increased food aid the assessment team called for was not necessary. Observers criticized the use of arm circumference as a measure of nutritional status in the Chadian population. Recent studies by MSF and World Vision International suggest that arm circumference may not be a valid measure of nutritional status in Chad. Others believed that the CDC investigation was limited to the most at-risk areas of the population and that CDC estimates of nutritional need were not valid for the population at large. At a later point, many believed that CDC estimates of need did not consider the significant role famine foods would play in the survival of the Chadian population.

The food needs estimated by CDC were probably beyond the absorptive capacity of the Chadian emergency food relief operations. Had the food need estimates been met, the surplus would probably be considerably larger than it is now.

9. CDC technical assistance was used to develop a proposed standardized nutritional surveillance system at a critical time during the emergency situation. CDC technical assistance was used to develop a system for standardized nutritional surveillance in Chad. Technical guidelines and a standardized approach to nutritional surveillance were developed through this technical assistance, with the Ministry of Health and all major nongovernmental organizations involved in emergency operations.

10. Vitamin A deficiency was suspected in the northern regions of the country but not considered a priority by the Government and nongovernmental organizations during relief operations due to general unfamiliarity with the problem. Sporadic cases of vitamin A deficiency were observed in Chad, but only by those trained in vitamin A assessment. Most Government and nongovernmental organization field staff had no experience in detecting vitamin A deficiency.

Acute vitamin A deficiency can cause blindness quickly in young children if not treated promptly. Children and adults suffering from acute protein-calorie malnutrition are at highly risk of developing A vitaminosis and should be treated with a prophy-

lactic dose of vitamin A as a matter of course. Vitamin A deficiency has also been linked with increased risk of morbidity and mortality in children under age five.

11. USAID/Chad requested a rapid assessment of vitamin A deficiency in the spring of 1985, but the assessment was never made because of delays by A.I.D./Washington. Helen Keller International submitted a proposal to A.I.D./Washington in the spring of 1985 to conduct rapid assessments of vitamin A deficiency in Chad and three other Sahelian countries. USAID/Chad cabled concurrence to the proposed survey in April 1985, but resource constraints and delays in A.I.D./Washington prevented the survey from being conducted.

12. The ration size and composition of food supplied through the emergency distribution program were consistent with standard nutritional requirements during emergencies. The recommended emergency ration in Chad was 400 grams of cereal grain per day in general feeding programs, which supplied approximately 1,500 calories per ration day. Rations in resettlement programs, school lunch programs, and resettlement activities varied but usually constituted at least 400 grams of cereal grains per ration day, cooking oil, and, in some cases, tinned fish and meat. Supplemental feeding centers served women and children with a ration prepared daily that supplied approximately 550 to 800 calories per ration day. In many cases, supplemental feeding programs included dry ration distribution as a complementary activity.

Sorghum was the major food supplied through the emergency distribution program. Supplemental feeding activities relied on fortified blends, mainly corn-soya milk, powdered milk, oil, and sugar. These rations were consistent with local tastes and preferences.

13. Famine foods were eaten in significant quantities during the emergency period. In most areas of the country, people ate famine foods such as wild grasses, leaves, roots, and fruits whenever they were available. These famine foods were bountiful throughout most parts of the country and they supplied significant nutritional intake to many of the at-risk population.

Studies of at-risk groups identified by the Food and Agriculture Organization throughout the emergency situation showed some improvement in nutritional status, but it is unclear whether this was due to deaths of some children previously identified to be at-risk. However, this information does suggest that at-risk groups received emergency food distributions and, in turn, that the severity of their nutritional situation improved from a catastrophic or immediate concern to one of a median concern, particularly in Ouaddai and Batha Prefectures.

14. Mortality was significantly higher in Chad during the drought than in normal years. The lack of baseline information, however, makes it difficult to ascertain the increase in mortality among the population at large. In the North, it appears that mortality was greatest between October 1984 and January 1985, when people migrated from their villages in search of food after the poor harvest. Mortality also peaked again during May and July 1985, at the beginning of the rainy season, before traditional famine foods were available.

In parts of the South, mortality probably began rising in November 1984, as civil unrest forced villagers to move to more secure areas before they could harvest their 1984 food. Mortality steadily increased during their migration and return in February and did not peak until emergency food distribution began in April 1985.

15. Emergency food distributions, coupled with a significant harvest of famine foods, were able to curb rising mortality in Chad. In the North, emergency food distributions curbed the rising mortality rate among some of the at-risk population who left their villages in search of food and later participated in targeted resettlement activities in the early months of 1985.

In parts of the South, no emergency distributions could begin before March of 1985 because of civil unrest. In areas where relief operations were undertaken, mortality rates were significantly curbed due to extensive, regular emergency food distributions and targeted supplementary feeding of vulnerable groups.

Famine foods were a major factor in the reduction of mortality during the summer of 1985, just before the harvest of the 1985 food crop.

2.2 Conclusions

1. In emergency situations, given limited time and resources, it is difficult to monitor general food distribution operations down to the local level.

2. Significant, impressive, and creative efforts were made in Chad to target emergency food distributions to at-risk groups.

3. Structured and targeted distribution programs such as supplemental feeding, food for work, emergency resettlement activities, and school feeding programs may be the most appropriate mechanisms to target food to at-risk groups in emergency situations.

4. The nutritional impact of general distribution programs is diluted by local pressures to distribute to the population at large, rather than to a targeted, at-risk population.

5. Vitamin A deficiency was not considered a priority concern during the emergency when it probably should have been.

6. Famine foods, in combination witn food supplied through emergency distributions, were critical to people's survival in Chad during the emergency.

7. Mortality would have been significantly higher than it was in Chad if emergency food distribution had not occurred.

2.3 Recommendations

1. Early warning systems are required to reliably assess emergency needs and give more lead time to start up emergency food distribution efforts.

2. A standardized nutritional surveillance system should be installed in Chad, possibly as a by-product of the famine early warning system assistance that is slated to begin in mid-February 1986. Technical assistance and program support should be provided for this effort by A.I.D./Washington through the Bureau for Science and Technology, Office of Nutrition, and the Bureau for Africa, Office of Technical Resources, Health, Population, and Nutrition Division.

3. Rapid assessments of nutritional status in emergency situations are required and should be given adequate implementation time and financial resources. In emergency situations such as in Chad, where nearly US$50 million was spent by the United States alone on emergency relief, scientifically rigorous early assessments of the extent and severity of malnutrition can be critical in planning relief operations. This kind of emergency field support should be financed by OFDA through existing cooperative agreements with the Bureau for Science and Technology, Office of Nutrition, and CDC.

4. A study should be carried out to assess the reliability of arm circumference as an indicator of nutritional status and the relative parameters of weight for height in Chad. Another study should be made to determine the survival role that famine foods play in emergency situations. These studies should be supported by A.I.D./Washington through the Bureau for Science and Technology, Office of Nutrition, and the Bureau for Food for Peace and Voluntary Assistance, Office of Food for Peace and should be carried out by local researchers in Chad.

5. Simple systems are required for monitoring emergency food distributions at the local level to ensure that at-risk groups receive adequate food rations. Postemergency evaluations such as the study that MSF is conducting in Chad to ascertain how much food was received by at-risk groups during emergency feeding distributions should be supported and the results circulated for review by donor agencies.

6. In emergency situations, attempts should be made to target food distributions in situ directly to at-risk groups using food-for-work projects, resettlement activities, school feeding programs, or focused supplemental feeding operations that involve dry distributions and screening based on nutritional need.

7. In situ feeding programs such as these will require additional resources to ensure adequate management and material support. Projects most suitable for this type of intervention should be oriented to infrastructure development, such as road building and maintenance, reforestation, or public works. They should be instituted in areas of nutritional need.

8. An assessment of vitamin A deficiency should be made as soon as possible in Chad. Training in the identification and treatment of vitamin A deficiency should be given at the onset of any emergency food distribution program to relevant personnel in the Ministry of Health and nongovernmental organizations involved in drought relief efforts. A standard dose of 200,000 international units of vitamin A should be available at food distribution points and given to any person suffering from acute protein-calorie malnutrition.

APPENDIX D

THE SOCIAL IMPACT OF FAMINE IN CHAD, 1981-1986

This appendix examines the impact of famine and food aid on the Chadian people. Section 1 describes the economic impact of the two major droughts in Chad. Section 2 describes the research methodology used. Section 3 briefly describes the ecology and the ethnic composition of Chad, as well as its administration at the levels that touch the vulnerable populations. Subsequent sections discuss ways of coping with famine and the impact of resettlement programs. The appendix concludes with an evaluation of emergency food aid from the beneficiaries' point of view.

1. SETTING: THE ECONOMIC IMPACT

In the past 15 years, Chad has undergone two major droughts, the first in 1972-1973, the second in 1983-1984. The severity of the 1983-1984 drought was exacerbated by increased fighting in Chad's long-running civil war and by Libya's occupation of Chad north of the 16th parallel, which forced many people to flee elsewhere in Chad or to other countries. Production of sorghum and millet, the staple foods, dropped 77 percent in the Sahelian zone, from 277,000 metric tons (MT) in 1976 to 64,000 MT in 1984 (USAID/Chad November 1985, 12). In the Sahelian and desert regions of Chad, milk is also a staple of farmers and nomads who trade livestock and milk for money and grain. The number of livestock dropped 10 percent from 1984 to 1985 (FAO 1985c, 2), with most of the losses in the household herds that provide milk (FAO 1984, 30); with less water and forage, milk production of the remaining animals dropped too. Thus, the drought and fighting had devastating effects on the people of Chad. In 1984, 1.5 million people out of 5 million, or 33 percent of the population, were judged to be at-risk.

2. RESEARCH METHODOLOGY

The evaluation team, including a social anthropologist, spent 19 days in Chad. During this time, the anthropologist did fieldwork in Ouaddai, in eastern Chad, where she visited two villages, one town, one feeding center, and one wadi selected to show different sorts of resettlement projects, as well as one village chosen for comparison because it had no projects and a poor 1985 harvest.

In Kanem, northeast of Lake Chad, the anthropologist visited eight wadis and three towns selected for differences in populations (nomadic, semisedentary, sedentary displaced persons,

indigenous sedentary farmers) and for resettlement projects and no projects. Other team members used a sociological questionnaire when they visited other areas in Kanem and the South (see Table D-1 for areas visited). In the field, two short questionnaires were used for individual and group interviews (see Boxes D-1 and D-2). Considerable information from long interviews enriched the findings of the short questionnaires. (See Table D-2 for a categorization of those interviewed at length.)

In addition, the anthropologist spoke with representatives of international organizations in the field, townspeople, and local authorities and attended meetings of regional Action Committees. During the famine, these committees made recommendations about targeting food aid to specific areas and are now coordinating local development projects.

Table D-1. Fieldwork Sites in Chad, January 14-February 1, 1986

Region	Town	Village/Canton
Ouaddai	Abeche	Aboudoura Madourma Canton Bortail Wadi Bitea West 1 LICROSS Feeding Center
Kanem	Mao Nokou Cheddra	Wadi Barka Drousou Kidi Wadi Wadi Wadigui Dougoul Kreda Wadi Bir Garat Mirguinga Touloub Sultan's Wadi 1 LICROSS Feeding Center
Logone Occidental	Moundou	
Tandjile	Lai	
Mayo-Kebbi	Bongor	

Box D-1. Short Interview Schedule: Ouaddai

1. What place do you come from?
   What "ethnic group" are you?

   (choose one below)
   Have you always lived in _____?
   Why did you come from _____?
   Do you have animals which survived the drought?
   What kind? What did you do with your animals during the drought?

2. How was your harvest in 1984? 1985?
   How long after the harvest were you able to eat your usual meals?
   Were most people in your position, or did some others have more or less?
   What about people in nearby villages (groups)? In main town?
   When food became scarce, what did you do?
   Did you also use:
   - networks of kin
   - patron-client
   - religious (e.g., zaka)
   - famine foods
   - sell wealth (animals, jewelry, household goods)
   - men leave, women find work
   - migrate as family, village

3. Before the drought, how many hectares did you cultivate?
   Food? Cash?
   How many did you cultivate this rainy season?
   Why did you cultivate more/less?
   What do you do to get food, money?

4. Type of food distribution (e.g., food for work, general distribution)
   When food became scarce, did you use _____?
   What about (kinds of food)?
   What did you think about (kind of food)?
   Why did you prefer _____?

5. Do you think you will stay or leave?
   Have others in your family stayed or left?
   Have others from your area of origin stayed or left? Why?

6. Do you think food distribution was fair? Why?
   Who got more or less? Why?

Box D-2. Short Interview Schedule: Kanem, Moundou, Lai, and Bongor

1. How many people live in this village?
2. How many people left this village?
3. Where do you come from?
4. If migrant, why did you come here?
5. Where did you come from?
6. When did you leave your home?
7. Did you leave because there was no food?
8. Did you leave because there was no water?
9. Did you leave because there was no food for animals?
10. How did you manage to find food? (Buy, work, family, sultan, etc...)
11. When did you get food?
12. If you sold things to get food, what did you buy?
13. If you left, where did you go?
14. When did you come back?
15. Why did you come back?
16. How did you come back?
17. Did you ever receive food aid?
18. How much?
19. What kinds?
20. How often?
21. If you didn't get food, why didn't you?
22. Do you think the food was distributed fairly?
23. Did you eat any famine foods?

Box D-2. Short Interview Schedule: Kanem, Moundou, Lai, and Bongor (cont.)

24. What did you eat?

25. When?

26. What did you eat with them?

27. How were the famine meals prepared?

28. Did any of your children eat gruel (bouille) in supplementary feeding centers?

29. When did they first eat gruel?

30. For how long?

31. While they ate gruel, did you continue to give them food at home?

32. How was your 1985 harvest?

33. Where did you get your seed?

34. Did you use any of your emergency food for seeds?

35. Did you stay with your husband/wife during the famine?

36. If not, when did (x) leave, and why?

37. If you received food for work, did you sell any of it?

PROGRAM MANAGERS

A. Were there any health interventions: vaccinations or oral rehydration?

B. Was there always a stock of corn-soya milk or blended foods?

Table D-2. Field Interviews in Chad, January 14 to February 1, 1986[a]

Interviewees	Male	Female	Total
Beneficiaries			
Sedentary	16	8	24
Semisedentary	5	8	13
Nomads	4	3	7
Drivers	3	0	3
Total	28	19	47
Groups	4	3	7

Interviewees	Ouaddai	Kanem	Total
Local Representatives of Nongovernmental Organizations	10	11	21
Sites Visited	5	12	17
Local Officials Interviewed at Length			
Village/Wadi Chiefs	2		
Canton Chiefs	2		

[a] These numbers do not include interviews conducted or sites visited by team members other than the anthropologist.

In the capital, further information was gained from local anthropologists, statisticians, representatives of various ministries, private voluntary organizations, and missionaries who had been in the field during the hard times of 1983-1984. Because of limited time in the field, this appendix also draws on many secondary sources such as files, cables, and reports.

3. PROFILE OF ETHNIC GROUPS, ADMINISTRATION, AND POPULATION

3.1 Ecology and Ethnic Groups

Most of Chad was once an ancient lake; all that now remains is the freshwater Lake Chad. This basin, extremely shallow and flat, is cut by wadis (dry river or lake beds), and dotted by oases, sunken spots where the water table is near the surface, though often the water is saline because of natron. In the rainy season, June/July through September/October, the dry beds fill with flash floods, and river waters spread quickly out across the flat land. Often roads and villages are cut off for several months. During the famine, it was often difficult or impossible for long periods to reach certain prefectures.

The Bourkou-Ennedi-Tibesti area between the 14th parallel and the Chad-Libyan border is desert, with very little rain and meager vegetation. It is the home of nomadic camel herders such as the Teda, Kreda, Bideyat, and others who live and farm a little in the oases of the desert.

The Sahelian zone comprises the Kanem, Batha, Biltine, Ouaddai, Salamat, Guera, Lac, and Chari-Baguirmi administrative prefectures. It is an arid steppe where nomadic and seminomadic herders such as the Daza, Zaghawa, and Ouled Sliman herd cattle and some camels and goats. The semisedentary and sedentary farmers such as the Kanembou, Kenga, and Maba sow pennisetum millet when it rains and later plant recession millet in the low-lying areas where the waters recede as the dry season advances. As the grasslands likewise dry and shrivel, herdsmen leave their wives and children at home with a few milking animals and forsake home-cooked cereals for a diet of milk and whatever they can barter their milk for as they travel south towards greener pastures. When the rains begin, they turn north and arrive home just in time to sow. Sedentary farmers have smaller herds so they can send the younger men to pasture their animals not too many days' distance from home. The inhabitants of these areas are primarily Muslim. Traditional "sultans" still wield considerable influence over parts of Kanem and Ouaddai Prefectures.

The "South" refers to an ecological area of Sudano-Guinean growth of shea trees, bushes, and grasslands. Much of this area

is a flooded swamp for 7 or so months of the year, especially in the Mayo-Kebbi and Tandjile Prefectures where rice is cultivated. The South produces millet and sorghum, sesame, and peanuts. Cotton and some rice are the cash crops of this region. The Sara and Ngambaye are culturally similar groups that occupy the Prefectures of Chari, Logone Oriental, and Logone Occidental. These prefectures take their names from Chad's two principal rivers, the Chari and Logone, which flow through them. The Sara and Ngambaye are sedentary farmers who, for the most part, had little political organization above the village level until the French established themselves in the area about 1911. They are animist or Christian by religion.

In the West, in the Mayo-Kebbi and Tandjile, are semi-sedentary herders and farmers, the Massa and the Moundang. The Moundang political structure was strongly influenced by the Fulani kingdoms of Cameroon.

In the early 1970s, as a result of the drought, many pastoral Fulani from Cameroon extended their circuit beyond the Mayo-Kebbi into the Moyen-Chari in search of grass. They were the first wave of many more herders from the Guera, Batha, and the Salamat who drove their animals farther south each year as the drought progressively desiccated their pasturelands.

3.2 Administration

Chad is divided into 14 prefectures; the prefects are appointed by the Central Government and represent the Ministry of the Interior. Prefectures are divided into subprefectures that in turn are divided into cantons. It is at the canton level that the traditional administration of sultans and chiefs (ngar-gi) and the modern government may mix, for canton chiefs (chefs de canton) are often traditional office holders whom the Government appoints to administrative positions. The canton chief may have numerous traditional petty officials at his service. In such areas as the Sultanate of Kanem, this overlap and proliferation of petty officials at the lowest regional levels provided a network of officials who carried out general distribution of emergency food to villages that the Central Government and donors were unable to reach because of logistical constraints.

3.3 Population

Estimates of Chad's population range from 4.5 million, used by the Food and Agricultural Organization (FAO) and USAID/Chad,

to 5 million, used by the Chadian Government.[1] These estimates may be high because they do not take into account the war, famine, civil disorders, and emigration. Medecins sans Frontieres (MSF), however, usually made population estimates of each area it visited, which were then used by the Food Action Committee and Regional Action Committees to determine allocations of food and to estimate the numbers of people affected by famine, the numbers of beneficiaries and displaced persons, and mortality.

4. REACTION TO FAMINE AND HOSTILITIES

4.1 Findings

Chadians' reactions to worsening drought and military actions appear to have followed a pattern. By understanding this pattern, assessment teams will know what to look for as early warning signals, when are the best times to intervene in a deteriorating situation, and what kinds of interventions to plan.

4.1.1 1981-1982: Early Warning Signs[2]

During the dry season of 1981-1982, married men left their wives and children to take their herds farther afield in search of grass or to earn money for food in large towns. As the situa-

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[1]The population of Chad for 1964 was estimated at 3 million people in a study under the French Secretariat of Cooperation (see INSEE/SEDES 1966). Since the Chadian Government census in 1968, population estimates have been based on projected birth and death rates. The population estimate for 1980 was 4,504 million. The projections have not been altered to account for the effects of famine, migration, or warfare, except that for 1986 the death rate was held at the same level as in 1985 rather than continuing to assume that it had declined. The Chadian Government estimated the postfamine 1986 population at 5,051 million.

The 1964 census did not include the northern half of Chad, 800,000 kilometers of land with a population too nomadic and sparse to count (INSEE/SEDES 1966, p. 3.) Only in January 1986 did MSF and CARE/Chad estimate, based on visits to a number of wells, that 10,000 people were displaced from the Bourkou-Ennedi-Tibesti area into areas to the south (Equipe Mobile MSF et CARE Tchad/Mao 1986).

[2]Each stage of a famine may be of variable length, depending on the ecological and social conditions.

tion worsened, many were unable to return home because they had no transportation or had earned barely enough to support themselves, much less their families. Their wives, left alone or as dependents of extended families, had to bear the burden of caring for children, fields, and household herds. Many displaced women interviewed had not seen or heard from their husbands since 1982.

4.1.2 1983: The Situation Worsens

In 1983 the better-off remained in the rural areas. The poor and those of moderate means traveled to urban markets to sell mats, wood, charcoal, and other items in demand in the town. Everyone began to sell jewelry, household goods, and animals--even the mats and stakes from which their houses were made--to have money to buy food. The poor, who had less to sell, were the first to suffer the effects of the famine. Nomadic herders began progressively to move their entire families south because many wells dried up and grass disappeared. Owners of livestock sold their animals. They and others now had to buy their food in the market. Consequently, livestock prices plummeted and grain prices shot up.

4.1.3 1984-1985: Migration

The peak of famine migration was reached in September and October 1984.[3] Well-off people were still able to buy food and stay where they were. Those who had been moderately well-off were now impoverished; they swelled the number of poor who moved permanently to market towns and worked to earn food or money for food or just begged. The most vulnerable--the elderly, handicapped, women with small children, and the very poor--for whom moving to town was too difficult or impossible, stayed behind. Those with some animals left and moved to towns farther south where they hoped to find water and pasture for their animals and food for themselves. A camp sprang up at Ati. In many smaller market towns, food was no longer available; this forced even more people into urban centers. In September 1984, 50,000 displaced

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[3]In a period of drought, the "hungry season," normally April through early July, lengthens with every succeeding year, and each year becomes more difficult to bear. By 1984, the hungry season extended into October because without enough rain there was little of the food--melons, cucumbers, peanuts--that people normally eat to tide themselves over until the harvest. People began to move in search of food even before the harvest season of October to January.

persons were judged to have settled outside N'Djamena (Faure 1985, 8).

In early 1985, the famine had become so severe that many people decided they would be better off in their own villages hunting for famine foods. At this point some families that had managed to stay together began to break up. Seminomads who still had transportation turned homeward, but they left many behind, those too weak or without beasts of burden, in towns like Goz Beida and Am Timan. Women who were too weak to work any more returned to their villages, some leaving behind their starving children in towns like Abeche, hoping that someone would take pity on an orphan child and give him charity. Many men, women, and children were too feeble to return home, and they died in the towns; some dragged themselves to the Sultan's palace in Ouaddai in hope of food.

By this time, nomadic herders had moved permanently south, and villages in Batha, Biltine, and the Guera and Salamat were deserted.

In early 1985 emergency food aid began to trickle out from the capital. When suffering people in areas too far away to be reached by distribution, like the Bourkou-Ennedi-Tibesti area, north Kanem, and Biltine, heard that dry rations or wet feedings were being given out, they quickly moved to distribution areas. Whether they were included on distribution lists was a local decision. When other displaced persons heard food was being distributed in their cantons, they moved back there if they could. In rural areas, people at-risk were now living off famine foods and emergency food aid when they received it.

4.1.4 Casualties of Fighting

Insecurity in both North and South Chad increased the problems caused by the drought. Some people were forced to flee to other areas or other countries for safety and food. Although some southerners eventually returned home, by leaving so abruptly they had lost everything: crops, tools, granaries, and household goods. When they returned, they had to survive on famine foods. Targeted distributions did not begin in Tandjile until April 1985--or June in Moyen-Chari--because of lack of information about the situation and difficulty in getting the food into at-risk areas.

4.1.5 June/July 1985: The Rains Return

In June/July 1985 the rains came at last, and the bush blossomed with famine foods. The rains, however, cut off many villages from supplies of emergency food.

In 1985 those in their villages who were wealthy enough to buy or to have saved seeds, or fortunate enough to have received a seed distribution, planted crops once the rains began. Others lacked seeds or tools to clear and sow their fields. Some were too weak to do so. Still others were too poor or otherwise unable to return home to farm their fields.

In 1986 some displaced persons returned home destitute and had to live off the food their neighbors and kin harvested and shared with them.

4.1.6 Government Reaction to the Drought

In September 1984, it became clear to the Government of Chad that the capital was being flooded by famine victims. Within several days, 10,000 people had settled in camps at points around the city. The National Food Action Committee of the Ministry for the Control of Natural Disasters instituted a policy of no camps and of resettling displaced persons in projects where they could be productive. The Committee, in cooperation with nongovernmental organizations, began "Operation Mur"; food was distributed in several areas considerably distant from N'Djamena to pull people away from the city. In November 1984, distributions ceased, and the recipients were incorporated into resettlement projects where they received food for work.

Only one major camp, comprising about 26,000 displaced persons, formed at Ati. This camp was dismantled, and those inhabitants who wished to were resettled in food-for-work projects in July 1985. Elsewhere, displaced persons were resettled before camps could grow.

4.2 Conclusions

1. The first signs of famine distress are hard to distinguish from normal behavior. At first, married men join young single men on the dry season trek to urban areas. The expanded foraging circuits of nomads and seminomads are hard to distinguish from normal dry season migrations.

2. At the end of the "rainy" season in 1984, large numbers of people began to migrate in search of food. International donors were unable to provide food because, although little or no rain had fallen for 4 years, they had not established security stocks.

3. If the donors and Chadian Government had acted sooner, they could have fed people in situ and avoided large numbers of displaced persons, camps, and resettlement.

4. Because emergency food aid and logistical support arrived too late for in situ feeding and substantial numbers had left their villages, the Government acted appropriately in implementing its policy of resettling displaced persons.

5. The resettlement program was effective and innovative and the second best solution to the problem of how to avoid displaced persons and camps.

6. In situ feeding is generally the best intervention in a famine situation. If in situ feeding begins before many individuals are in an advanced state of malnourishment, supplementary feeding may not be necessary. In situ feeding also prevents people from migrating. It helps care for the poor, the weak, the elderly, and other disadvantaged people who would otherwise be left behind to starve. In situ feeding helps prevent the formation of disadvantaged groups such as single women with children and avoids much of the subsequent social disruption that famine provokes. With in situ feeding, the health problems common in camps are avoided. People are in their homes, with their tools, ready to plant when the rains come; after in situ feeding, relief projects can change more rapidly into development projects with less time spent on rehabilitation. Most important, in situ feeding helps preserve human dignity and morale.

7. In situ feeding is not appropriate in all situations. In some regions, wells had dried up or grass had disappeared. Neither people nor animals can remain in such conditions. In yet other places, civil disturbances forced people to flee; in these cases resettlement was the best option.

4.3 Recommendations for Program Design

4.3.1 Program Design and Planning

Famine relief programs should be designed according to the stage at which intervention will occur, because the target populations and their needs will be different at each stage. Planners can arrange for different types of feeding programs--dealing

with displaced persons, avoiding health problems, pre-positioning stocks, providing for rehabilitation and development and so forth--depending on the stage the famine has reached (see Table D-3). The following recommendations indicate the stages and the interventions that need to be taken into consideration at each stage.

1. In situ feeding should begin in stages one and two, before much migration has occurred, as in 1981-1982 and 1983.

2. Interventions during the third stage, as in 1984, should be ready to deal with displaced persons in towns and camps. Steps to prevent health problems should be considered. Resettlement schemes and food-for-work projects facilitating return to home areas could speed the transition from relief to development.

3. When a famine has reached stage three, the government and donors should pre-position security stocks for distribution because, if the rains fail again, the famine will reach disastrous proportions.

4. Once a famine reaches stage four, as in 1985, feeding centers and/or general distribution should supplement resettlement and food-for-work efforts because many people are in an advanced state of malnutrition.

5. In stages four and five, inputs such as seeds, tools, blankets, and household items need to be included in distributions. Local currency generated from sales of some food aid can provide the money to pay for these materials that are crucial if people are to move from this stage into rehabilitation and development.

6. In stage five (as in 1985-1986) some people are already doing well and do not need help, but others are destitute. Planners should examine carefully who should be included in target groups for assistance.

7. In stage five, transportation should be provided for the people stranded in urban areas, camps, or resettlements who wish to return home but who lack the means.

4.4 Recommendations for an Early Warning System

An early warning system should be instituted, because the first signs of a growing famine are hard to identify. Early action is necessary for the optimal intervention: in situ feeding.

Table D-3. Stages of the 1981-1985 Famine and Its Effects in Chad

Stage	Characteristics[a]	Remedies
1	Food will not last until next harvest; married men leave for urban jobs to get food; women sell goods, services, jewelry, household effects	In situ food for work
	Pastoralists take herds farther afield; milk production drops	Wells and boreholes for pastoralists
2	Malnourishment begins, especially among the poor and pastoralists; people sell goods, services, last of possessions	In situ feeding Food for work
	Pastoralists move family and dwindling herds south or abroad	Resettle pastoralists in better areas
3	Better off remain in villages; urban areas flooded by severely malnourished, displaced persons, beggars; camps spring up	Resettlement schemes Food for work Targeted feeding for worse off
4	Advanced aggravated malnourishment; camps with more disadvantaged and vulnerable groups; those who can, leave towns for famine foods in rural areas	Resettlement Food for work Feeding centers General distribution Seeds, tools, etc.
5	Rains return; better off have means to cultivate and reestablish herds; many stuck in camps and urban areas; poor are destitute, unable to begin again without help	Targeted feeding Food for work Seeds, tools, etc. Resettlement or transport home

[a]Although these stages appear to be linked with the years of the famine, they are actually tied to the amount of rainfall, the ecology of each area, the social constitution and condition of the populations, and similar factors.

4.4.1 Identifying the Signs

An early warning system should monitor the following:

-- Migrations of various ethnic groups

-- Entry of married, not just young single, men into the urban dry season job market

-- Large influxes of distressed men and women into urban areas

-- Changes in livestock and cereal prices

The early warning system should be associated with nutritional surveillance. The famine early warning system will perform some of these functions, as will MSF's nutritional surveillance. In addition, veterinarians, agricultural agents, teachers, social workers, missionaries, and PVO workers should be taught what signs to watch for and a reporting system should be instituted.

4.4.2 Collecting Data and Disseminating Information to Policy-makers

On-the-ground monitoring should be ongoing and should complement the Office of U.S. Foreign Disaster Assistance (OFDA) collection of data from remote sensing of land covers by the National Oceanic and Atmospheric Administration's Landsat Multispectral Scanner System and Advanced Very-High Resolution Radiometer and ground-truthing.

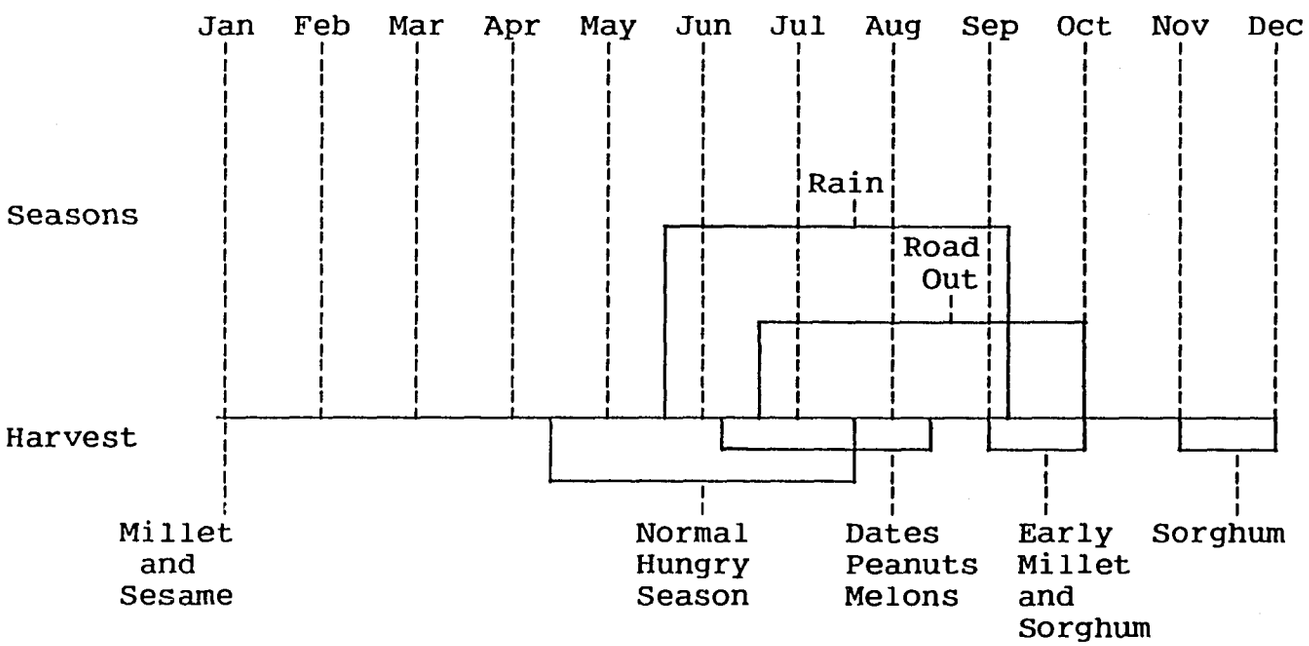
The utility of an early warning system depends on decision-makers in both donor and host countries having access to the information and an understanding of its uses. This data should be made available in international forums, and host governments should be offered assistance in using this technology.

4.4.3 Developing Domestic Food Stocks and a Timetable for Action

Some emergency food stocks should be kept in-country in nations that face chronic drought problems.

Early warning monitors could prepare simple calendars of events that will warn, once a drought has begun, when actions on emergency food must be taken (see Figure D-1).

Figure D-1. Harvest and Seasonal Calendar for Chad



It is clear that in the first year of famine in Chad, harvest results must be projected during October/November if donors are to send food stocks in sufficient time to get stocks in-country and pre-positioned before the rains. In later years, some food stocks should be kept in-country to cover the period of need right after the harvest fails, beginning in November. In addition, stocks should be pre-positioned in outlying areas before the rains come because food is already a pressing need early in the rainy season.

5. WAYS OF COPING WITH THE FAMINE

The evaluation team cannot attribute the success of the emergency food program only to food aid. At-risk Chadians dealt with increasing hunger in several ways: somehow getting money to buy food in the market, depending on others to share, and eating famine foods. It is evident that traditional coping mechanisms played a part in sustaining some of the vulnerable population because, compared with an estimated monthly requirement of between 10,000 and 14,000 MT per month to feed the at-risk population, emergency food aid distributions did not exceed 14,000 MT per month until April 1985, 4 years into the drought.

5.1 Findings

5.1.1 Stretching Food Farther and Using Famine Foods

Chadians of various ethnic groups claimed they had at some point eaten famine foods. Only the Kanembou women interviewed in Kanem Prefecture said they had not used famine foods and did not know how to prepare them; when their hunger had grown too great, they moved to urban areas.

People have traditionally stretched out their food and supplemented it with famine foods. Even in normal years, farmers have a hungry period when the last year's supplies have almost run out and new crops have not yet come in. During this time, they use various techniques to make their staple foods go farther: making porridge or drinks out of bran, eating more manioc porridge or cakes, and drinking gruel rather than eating porridge. They cut down on the size and frequency of meals. Sedentary people used all these techniques to stretch out their grain supplies as production dropped each year of the drought.

They also made their staples go farther by increasing the amount and variety of bush foods in their diet. Many bush foods are considered palatable and are commonly included in the traditional diet. Other wild foods are considered quite edible, but are infrequently consumed. The Sara ethnic groups, for example, use the root of the wild water lily to make their treat of an annual New Year's pudding, but they otherwise consider it their major famine food. It is not normally eaten because it requires so much time to prepare. Other famine foods are so classified because they are not appetizing; the boiled leaves of the tree Balanites aegyptica are "bitter and smell," according to one informant. Others explained how they prepared the pounded sprouts of the thorn tree kram kram into an unappetizing porridge when they had nothing else to eat. (See Table D-4 for a partial listing of famine foods.)

Nomads were in double jeopardy during this extended drought. In the extreme north they depend on milk as a staple of their diet, a source of protein, calcium, and fat, which they supplement with dates, cereals, tea, and sugar. Those who do not own land in oases must trade milk or animals for these staples. When milk production dropped from lack of water and pasturage and animals began to die, the nomads no longer had milk to drink or to sell to get cereals and tea. Furthermore, because of the fighting in 1983, many people lost their land in oases or had their date palms destroyed. Farther south, the cattle-keeping nomads were likewise vulnerable because they, too, trade milk for cereals, sugar, and tea.

Table D-4. Listing of Principal Chadian Famine Foods

Latin Name	English/ French Name	Sara Name (no tones)	Arabic Name	Parts Used
	water lily nenuphar	bala		root
		banga		leaves
		dui		leaves
Strychonos spinosa		dui dundu		fruit
Strychnos densiflora		dui renji		fruit
		bolio		leaves, fruit
		der		fruit
Ficus thonningli		gelay		leaves, fruit
	water lily nenuphar	ger		root
Moringa pterigosperma		nalem		leaves, flowers, fruits
		hoiy		root
Ximenia americana		jimtiti		fruit
		jondo		fruit
Balanites aegyptica	savonnier		hadjlilid karnaka	fruit, nut, leaves
			abara	grains
			timeleki	grass
Bosia senegalensis			makhette	fruit

Table D-4. Listing of Principal Chadian Famine Foods (cont.)

Latin Name	English/ French Name	Sara Name (no tones)	Arabic Name	Parts Used
Salvadora persica	nimier		shaw	fruit, seeds
Acacia lacta	gommier		talha	gum
Cenchrus prieuri	finger millet/fonio		krep	grain
Dactylotonium			abousabe	grain
	doumier	gay		fruits
		goro		melon
Acacia		kula ote	kram-kram	sprouts, fruit
		kaja		fruit
	shea, karite	kia		fruit, nut
Lophira		konio		leaves, seeds fruit
		kilolo		fruit
		koklo		root
Diosporos mespili-formos		komb		fruit
	cucumber	kosi		fruit
Ficus moraceae		koti		fruit
Parinari curatellaeformos		kuma		fruit
		kumtal		fruit
Parkia bilobosa	ronier	mar		fruit

Table D-4. Listing of Principal Chadian Famine Foods (cont.)

Latin Name	English/ French Name	Sara Name (no tones)	Arabic Name	Parts Used
		mati		fruit, seed
Tamarindus	tamarind	masi	ardeb	fruit
	water lily nenuphar	mer		root
		mong		leaves
Bauhinia thonningli		mung		leaves
Tetrapleura andongensis			muro	seeds
		num nang		leaves
		ndila		fruit
		ngando		fruit
		ngida		fruit
Ziziphus mauritania	jujubier	ngokro		fruit
Ziziphus spina crista				
	cucumber	rorio		melon
	cucumber	rubi		melon
	kuinkuiliba	us bong		leaves
Hibiscus	hibiscus, "oseille"	yir	karange	fruit, leaves, stalks, grains
	cucumber	wasi		melon

All these groups migrated farther south in the Sahel in search of pasturage and water for their animals, only to see many of them die along the way. Many of starving nomads turned to eating pounded kram kram and other famine foods.

5.1.2 Depletion of the Famine Foods

Some famine foods were not always available. With the coming of the rains in June 1985, the Sahel was filled with wild finger millet (krep) and other edible grasses that had not been seen for several years since their growth depends on two to four adequate rainfalls. As the drought stretched out over several years, other famine foods such as leaves and fruits, which need some rainfall to grow, began to disappear from the bush. Other famine foods were depleted; in the Sahelian zone in 1985, the people ate so many leaves off the Balanites aegyptica trees that in 1986 the trees were practically bare. In the Moyen-Chari Prefecture, hunger was so pervasive that by early 1985 people had eaten almost all the wild waterlily roots, and there were few other famine foods to eat.

5.1.3 The Distribution of Emergency Food

People really began to suffer from starvation in January-March 1985. April and May were the worst months, even though more food became available for distribution. The first food aid was distributed in the Sahelian zone after many people had returned to their villages to hunt for famine foods. People in Ouaddai and Kanem who were not in targeted food programs (such as food for work, wadi resettlements) or in feeding centers, consistently claimed that they received very little distributed food--somewhere between 2.5 and 7.5 kilograms per family, given out over about three distributions. They nevertheless considered even this small amount to have been helpful. MSF believes that people in these areas were able to manage because of their use of famine foods (d'Altilia 1985, 22).

When the Food Action Committee heard that finger millet was growing abundantly in the bush in the Guera, Batha, and other parts of the Sahel, they redirected emergency food aid shipments to other needy areas.

In the South, doctors judged the nutritional situation to be worse than anywhere else, especially in Moyen-Chari where 40 percent of the sampled population was in an urgent state of malnutrition (d'Altilia 1985, 8). Although they have no statistical evidence, doctors and others who worked in the South believe that mortality was very high. They suggest that it peaked in April in

the Tandjile, which was when LICROSS first opened its feeding centers. In Moyen-Chari, mortality remained high longer. One doctor believed that people were starving in Moyen-Chari because they had eaten all the available famine foods. Others died because of the toxic effects of indiscriminately eating whatever roots and bark they could find.

5.2 Conclusions

1. Practically all at-risk groups depended to some extent on famine foods.

2. Many famine foods grow in damp areas. Others are produced by various species of trees.

3. Although evidence is not conclusive, it would appear that both famine foods and emergency food aid played an important part in keeping people alive. In some parts of the Sahelian zone, targeted food aid arrived early enough and in large enough quantities to make a spectacular improvement (d'Altilia 1985, 22). But in other areas like Ouaddai, people seemed to have received only small quantities of food aid through general distributions; the ability to stretch a small amount of cereal a long way and the supplementary and perhaps synergistic effects of famine foods may have been important here. The possibility of supplementary and synergistic effects is supported by indications that mortality rose in Tandjile through March 1985 while people had only famine foods and started to decline as soon as some emergency food became available in April 1985. The importance of famine foods is supported by evidence from Guera where food aid plus finger millet led to considerable improvement in nutritional status; the finger millet was especially important for parts of Guera that were cut off from food deliveries during the rains (d'Altilia 1985, 21). In fact, the Government judged the impact of finger millet on nutritional status to be great enough to divert food aid to other areas. The importance of both food aid and famine foods is indicated by the high rates of malnutrition and mortality in the subprefecture of Koumra, Moyen-Chari, the worst hit in the country (d'Altilia 1985, 1), where people ran out of good famine foods almost a year before emergency food aid arrived.

4. Nomadic populations are pushed into almost total dependence on famine foods once their herds are diminished, because milk is both a staple and traded for other staple foods.

5. If the 1986 rains in Chad are poor and emergency food aid arrives in small quantities or too late, as it did in 1985, the impact of a bad harvest will be even more severe than in 1985 because famine foods in many regions have been seriously depleted and many famine foods do not appear without sufficient rainfall.

5.3 Recommendations

1. A study of the nutritional values, the growth cycles, and the interaction of famine foods with other foods should be undertaken by the Nutrition Office of USAID/Chad. Knowing the nutritional values of famine foods, and where and when they can be found, will help planners to target food aid more effectively and adjust the ration size and composition to maximize the value of available famine foods.

2. Planners should develop programs to prevent migration. They should remember that in situ feeding will allow at-risk populations to exploit available resources of famine foods, which is not an option when they are in camps or urban areas.

3. Emergency rations offered to destitute nomads should be complete, not just supplemental, because this is the only food nomads may have.

4. Given both the risk involved in counting on famine foods to appear and their possible depletion, pre-positioning of some supplies in regional centers such as Abeche, Mongo, and Mao before June 1986 should be considered, because delivering too little food too late could have disastrous consequences without the buffer of famine foods.

5. Food-for-work projects should include reforestation projects for dune fixation and sources of firewood. Planting should also include species of trees that produce famine foods. Irrigation projects should be designed to favor, not destroy, areas in which damp-loving famine foods grow.

6. APPROPRIATENESS OF EMERGENCY FOOD TO TRADITIONAL DIETS

Foods differing from the traditional diet may not always be considered either palatable or sufficiently nourishing.

6.1 Findings

6.1.1 Types of Food

Emergency food distributed was mostly sorghum, corn, rice, wheat, corn-soya, milk, and vegetable oil. Canned fish, fish powder, minestrone soup, powdered milk, and other gifts from various donor nations sometimes supplemented the basic ration.

People interviewed said they sometimes sold part of their food ration, especially the tinned items, to buy necessary complements to their meals: vegetables for sauce, salt, hot peppers, and tea and sugar. Nomads and seminomads consider tea and sugar to be a basic element of their diet, not a luxury treat.

6.1.2 Needs Met and Unmet

Women fed in LICROSS feeding centers said the gruel tasted terrible, but their children liked it. The women ate it anyway because they were hungry and they knew it was good for sick people. Workers in the feeding centers made an effort to improve the taste of the gruel served.

Traditional milk consumers said they sorely missed milk and butter. Without milk, they felt hungry. Without butter, they were unable to keep their skin from cracking with dryness.

Some people said they had sold part of their emergency ration to buy necessary clothing or tools even though they were hungry.[4]

6.2 Conclusions

1. Sorghum, rice, and wheat are all consumed in traditional diets in different parts of Chad. Corn meal and corn-soya milk were alien to most Chadians, but were well accepted. Canned fish, dried milk, and so forth were not considered acceptable substitutes for the fresh items.

2. Although gruel is traditionally consumed throughout Chad, some people disliked the way it was prepared in supplemental feeding centers, although not enough to refuse to eat it.

3. Many people did not consider their rations to be complete and so sometimes sold part to buy other "necessary" items.

4. The appearance of emergency food aid in the market is not necessarily a sign that ration size is too large and people are selling the surplus, but may indicate a need for additional items.

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[4]Some people interviewed in food-for-work projects had not sold their food rations to buy food supplements and other necessities but had bought them on credit to be paid back with the next rations or with crops sold at a large discount because they had not yet been harvested. Some people were already deep in debt.

6.3 Recommendations

1. Donors should continue the same staple emergency food items that are acceptable to the population such as sorghum, corn-soya milk, corn, wheat, and oil.

2. Donors should consider cultural tastes when providing emergency food. Donors should make some provision for people to complete their dietary needs: accept the sale of some food items; include salt, sugar, tea, and so forth in small quantities; or give a small amount of cash as a component of food assistance. Donors should examine why emergency food is appearing in the market before concluding that the ration size is too large.

7. COMMUNITY VALUES DURING THE FAMINE: SHARING

Sharing food seems to have been an important mechanism for distributing food during and after the famine in areas the team visited.

7.1 Findings

7.1.1 Sharing Among Kin

In Ouaddai, where paternal parallel "cousin" marriage is practiced and many people in a village are related, kinsfolk shared food at the beginning of the famine. In Kanem, several men interviewed said they had gone to stay with relatives in town who fed them while they tried to earn money for food for their families.

In the South, men who are kin or neighbors share the meals prepared by each person's wife. Thus, men with more food help sustain men with less. A woman and her children are much less likely to share with other women; therefore, differences between well-off and poorer women are not lessened through sharing.

One of the basic postulates of kinship among the Sara is that siblings should share. "Sisters" often asked "brothers" who lived many kilometers away for grain. Such asking and giving is considered a sign of love. This love helped many families weather the 1972-1973 famine. It is fair to assume that this held true at the beginning of the 1981-1985 famine.

7.1.2 Sharing Within the Community

In Ouaddai and Kanem, the tradition of making charitable donations to strangers (zaka, one of the five tenets of Islam) helped some people in the Muslim regions get food from time to time. Children and women were the main recipients, according to informants' stories. Charity was, however, a capricious, unpredictable, and limited benefice, which was important for those who received it but which succored only a small number of at-risk people. One woman, who had fled to Kanem from the Bourkou-Ennedi-Tibesti area, snorted at the thought of charity; people in her own region might give her charity, but not here in Kanem where she was a stranger.

In all the areas of food-for-work projects visited by the evaluation team, people said they shared their food rations. People shared not only with kin who were not in the project but with displaced persons who had settled near them. A mason in Mao, for example, received a double ration of four sacks of millet every 15 days for his skilled labor. Two sacks he used for the 12 people in his family, the other two he gave to his eight kinsmen who had left their families to come to Mao to find food. Another woman explained why she shared her food-for-work ration with displaced women not included in the project: "She is a mother. I am a mother. How can I not share? The same razor that shaves her head must shave mine."

After the 1985 harvest, villagers fed relatives who had not sown or who had returned after the harvest. Some of this was simply sharing among kin, but often it took the traditional form of "earning" some food in exchange for helping harvest it.

7.2 Conclusions

1. Sharing helped distribute food aid to people who were not included in target populations.

2. Sharing emergency rations may have been material in lessening the impact of the famine, because it is important nutritionally to have some emergency food to add to famine foods, even if the amount of the staples from emergency sources is small.

3. Sharing had a considerable effect in diluting the ration size.

4. In the South, some women and children (boys up to about 8 years of age and all girls) are less likely to get enough food than their husbands/fathers; they are a particularly vulnerable group.

7.3 Recommendations

1. Donors should consider community and traditional values (e.g., sharing) in determining ration size and distribution.

2. Donors should be aware of traditional discrimination against women and children in food distribution. In the South, the possibility that women and children, including children more than 5 years old, may be more malnourished than the men in the population should be considered.

8. TRADITIONAL INSTITUTIONS

8.1 Finding

Traditional institutions played an important role in distributing emergency food aid. In Kanem, the Sultan's representatives frequently transported emergency rations from the subprefecture or canton to the Sultan's people in villages or wadis. Canton chiefs (chefs de canton), who are often chosen from among traditional leaders, frequently signaled to their superiors that there was a problem of malnutrition in their cantons.

Several canton chiefs interviewed said that, for each food distribution, they tried to inform all the people in their cantons when and where emergency food would be distributed. Some people were too weak or lived too far away to come. The canton chiefs tried to arrange with the village chiefs to get their rations to them.

In Ouaddai, starving people sometimes went to the Sultan's palace in hopes of being fed. People returning from Sudan sometimes stayed in the Sultan's old palace, waiting for him to help them get resettled.

8.2 Conclusion

Traditional patron/client relationships helped the distribution of food aid in areas where other systems failed.

8.3 Recommendation

The Food Action Committee should continue as a coordinating mechanism for the distribution of food aid. Within this mechanism, traditional systems of distribution involving sultans, can-

ton chiefs, and customary chiefs (chefs coutumier) should be recognized as a legitimate and sometimes very effective means of distributing food aid.

9. IMPACT OF RESETTLEMENT PROGRAMS

Resettlement programs with development characteristics have had a significant impact on both farmers and nomads, some of whom appear to have adopted a new way of life.

9.1 Findings

9.1.1 Kanem

In the wadi resettlement projects in Kanem, about 70 percent of the participants were cultivators before the drought, about 10 percent were semisedentary farmers and herders, and about 20 percent were nomads.

Nomads from the Bourkou-Ennedi-Tibesti area, who cannot return because of Libyan occupation, and from north Kanem, where the desert has taken over, said they intend to stay in the projects even though, as one woman put it, "In our hearts [irrigation] is not our work, but the famine has not left us alone." An Anakaza, a nomad from the far north, said, "Why go home? Why should I go back to suffering? Why should I feel suffering? If I had livestock, I would stay here and work the garden and my children would care for the animals. I would not return home. There is not even a dog left there."

According to local PVO workers, the wadi development project with the best workers is composed entirely of resettled nomads. On the other hand, some nomads have real difficulty farming because it is hard work ("I must put my hands in hot water because they swell so much"), and they have no familiarity with the agricultural principles involved.

Semisedentary project members interviewed believed they would continue to practice irrigated wadi agriculture after the projects' end. Some said they would remain in the project wadis because they "would not let all that work go for nothing." Others said that if they could get a few animals, they would return home and cultivate their own wadis because they had seen the economic benefits. Another drew an analogy: "At first people thought irrigation was crazy, just the way we thought about school. Now we see the usefulness of schools and of irrigation too."

Many local farmers and displaced persons are asking to be included in wadi resettlement/development projects. Some have started to irrigate plots on their own after learning how by watching their neighbors. In several subprefectures, some villages not in the wadi projects have started their own projects: digging wells, building shadoufs (counterpoised water buckets) for irrigation, and planting seeds. They do this in the hope that these tokens of good faith and intent to work will help them to be included as another wadi development project.

Because of the large number of displaced women, the projects provided women with garden plots on the same terms as men. PVO workers think that the women, in general, work harder than the men.

The local population seems to have accepted outsiders in the wadis. As one village chief said, "They have become our friends. Without them the village would be empty and the land unworked." Problems over land tenure may, however, eventually arise.

The local people who own the wadis agreed to permit resettlement projects on the condition that the outsiders not plant any fruit trees, a traditional proof of land ownership.

The private voluntary organizations (PVOs) have been so involved in emergency resettlement that they have not had time to examine the long-term viability of irrigated wadis as they shift from emergency aid to development. They are aware that several questions remain to be answered in the following areas.

-- Technical problems: salinity, waterlogging, water table levels, drawdown and recharge of water tables, soil suitability, dune fixation, suitable seed varieties, and insect and crop pest control

-- Health: insect and waterborne diseases, crowding, sanitation, water quality

-- Economic: the commercial potential for garden produce, problems of transport and marketing, the real cost of vegetable production

The beneficiaries in wadi projects began cultivating very small plots; as their strength and skill increased, the plot size was increased. At the end of 1985, however, the plot was still too small to produce enough to support a family of five. The PVOs have conjectured about the area necessary to support five people but are unsure that the beneficiaries will be able to irrigate that land with the current technology of shadoufs.

CARE wadi projects began as emergency food-for-work projects; at the beginning of 1986, CARE halved the food ration and intends to end food for work by April 1986. They are doing this to avoid creating a dependence on food distribution and to stimulate self-reliance, because food rations have been appearing on the market, and for other reasons.

Several interviewees in wadi projects stated that they had not yet fully regained their strength, either because they had not been in the project long or because the ration was insufficient for the number of people eating it. In nonproject areas, people proclaimed they wished to be included in food-for-work wadi projects because they needed the food. "It is hard to work when your belly is empty, but we hope they will give us a project when they see the work we have done."

9.1.2 Central Chad

Most resettlement development projects in central Chad were reported to be going well. One project had difficulties, and many nomads had already left the project (Faure 1985, 13).

Many of the ethnic groups included in the troubled project at Wadi Abourda did not get along. Moreover, the local populations and the displaced nomads often came into conflict. The majority of the nomads were from Kanem or Batha and were not particularly motivated to work. And once the rains had come to their home areas, many returned home and tried to reconstitute their herds.

The resettlement projects helped the nomads survive until they could return to their former life. The wadi projects on Lakes Fitri and Chad, and in Kanem too, kept people from migrating to the cities and provided productive activity for many displaced and destitute people.

9.1.3 Ouaddai

Some wadi resettlement projects were designed to be temporary, but with a development component, taking displaced persons returning from Sudan or elsewhere and providing them with tools and training in irrigating gardens for food for work until they could return to their villages and plant in the rainy season.

During their time in the resettlement areas, the displaced persons engaged in productive activities and learned a new skill --dry season vegetable irrigation. Other long-term development

projects were designed to teach villagers how to grow irrigated vegetables in wadis near their homes.

Several of the possible technological, economic, and health problems that were not addressed in Kanem have not been examined in Ouaddai projects either.

In the future, problems of land tenure may arise in the wadis. Farmers are interested in planting fruit trees for income, and PVO representatives would like to promote this activity. This may lead to conflicts with the traditional land tenure system. As the value of irrigable land becomes clearer, problems of ownership versus usufruct may also arise. Difficulties between indigenous and resettled people may also grow over land, wealth, customs, and so forth.

Problems of long-term viability of wadi projects have not been studied. CARE/Chad intends soon to begin a study that will answer some of the questions about the long-term viability of wadi irrigation in Kanem.

Although beneficiaries were fully informed in advance of the reduction in food rations in CARE projects, many people reported that they were still very much in need of food for work. Whether an average family will be able to support itself on the food or profits produced by the land the family can cultivate with one shadouf is unknown.

9.2 Conclusions

1. Wadi resettlement projects have been a successful short-term intervention. The projects were instrumental in keeping displaced people from flooding into cities and from establishing makeshift camps.

2. Given that no early warning system provided advance information of population movements and that there were serious logistical problems in getting food out to distant areas, the resettlement of nomads either temporarily or permanently in wadis was a resourceful way to care for displaced persons.

3. The present success of Kanem wadi resettlement projects with development characteristics is evinced in their spread effect. People's demands for more projects suggest that these projects meet an important need for vulnerable groups.

4. Wadi projects taught new agricultural techniques that can be useful even when beneficiaries do not settle permanently in the project sites.

10. EVALUATION OF SUCCESS OF FOOD AID FROM THE BENEFICIARIES' PERSPECTIVE

10.1 Findings

10.1.1 Did Food Aid Reach the Neediest?

There was common agreement among the Chadian Government, donors, nongovernmental organizations, and international organizations to target food aid to different areas according to need through the Food Action Committee. These needs were assessed by MSF, which reported to the Committee its findings on the nutritional and economic situation of different areas.

Distributions were made to rural areas before urban ones because food was available in markets in the large towns. However, certain vulnerable groups did not receive food aid when they needed it because of communication problems (e.g., no radio units, uncertain written communication). Sometimes the Food Action Committee did not know that villages or areas were in trouble. Even when need was known, food sometimes could not be delivered for logistical reasons. Nevertheless, on the whole, food aid was sent to the neediest populations.

10.1.2 How Much Food Did Beneficiaries Get?

Those interviewed claimed that very little food aid was received through general distribution. Many preferred food-for-work programs or supplementary feeding because they got more food and it was more reliable. These informants, however, did not constitute a random sample.

10.1.3 Did Food Aid Make a Difference?

The lack of data makes this almost an impossible question to answer statistically. Many recipients interviewed were grateful for food aid because it had given them the strength to cultivate when the rains finally came.

10.1.4 Can Emergency Food Aid Be a Basis for Development?

Emergency food aid is being converted into incentives or payment of food for work. Emergency resettlement projects are in

the process of being converted to longer term development efforts.

Many people interviewed about the conversion said they were willing to work but noted that they needed rations or supplementary feeding from the beginning of the transition if they were to have the strength to work.

Money from the sale of some food aid is providing funds necessary for the conversion to development projects.

10.1.5 Were the Beneficiaries Included in the Conversion From Emergency to Development Projects?

Generally in wadi resettlement/development projects and forestry and irrigation perimeters, the beneficiaries were apprised of changes in the projects. In some cases, a project would not begin unless everyone supported it. However, in other ways, beneficiaries were not included.

10.1.6 Was Food Aid Distributed in Hard-to-Reach Areas?

Lack of transport, bad roads, and flooding all impeded getting food to hard-to-reach areas.

10.1.7 Did Food Aid Arrive in Time To Meet People's Needs?

Most beneficiaries considered that they received food aid only after much suffering.

10.1.8 Which Distribution Mode Was Most Beneficial to Recipients?

On the whole, targeted food programs did a better job in feeding people than general distribution.

10.2 Conclusions

1. Food aid was a limited success from the beneficiaries' point of view.

2. The impact of food aid could have been even greater if there had been no problems of timeliness and delivery.

3. Because too little food arrived too late, targeted feeding programs helped beneficiaries more than general distribution.

4. Emergency food aid can be transformed into development food aid. If delivered at the right time, it can be used for in situ development.

5. Beneficiaries' interests are being included in project design to a limited extent.

6. Without demographic studies of at least sample populations, it is impossible to quantify the effects of the famine or of emergency food aid.

7. Although the evaluation team lacks the information necessary to quantify the impact of food aid, it is the considered judgment from an anthropological standpoint that food aid made a significant difference to the beneficiaries.

10.3 Recommendations

1. Emergency food should be provided again should the need arise. Without a doubt, the provision of emergency food aid relieved some of the suffering of thousands of people and saved many lives. However, more people could have been saved had there been an early warning system and a quicker reaction to the famine. Every attempt should be made in the future to avoid problems of timeliness and delivery.

2. Emergency food aid should be integrated into development projects. Once the immediate emergency is over, efforts should be made to return the beneficiaries to self-sustaining livelihoods.

3. Donors should consider funding demographic studies that would allow them to draw stronger conclusions about the impact of drought, famine, and food aid. Such studies will be of benefit for emergency programmers. Donors should also consider the value such studies would have for them when they make decisions on targeting various kinds of assistance. Such studies would also be of great value to various Chadian ministries such as Health, Planning, Finance, and Rural Development.

APPENDIX E

LOGISTIC ASPECTS AND MANAGEMENT OF THE CHAD FOOD EMERGENCY IN 1984-1985

1. INTRODUCTION

Formidable logistical constraints made the establishment of an efficient food aid distribution particularly difficult in Chad. Chad is one of the most geographically isolated countries in Africa. Five constraints can be identified.

First, Chad is landlocked (see Figure E-1); the ports of Apapa in Nigeria and Douala in Cameroon are respectively 2,200 and 1,800 kilometers from Chad's capital, N'Djamena. The port-inland supply lines never functioned efficiently, and until 1982, the country was solely dependent on the Douala-N'Gaoundere route, with a monthly offtake capacity of less than 5,000 metric tons (MT).

Second, N'Djamena is probably the only West African land-locked capital without (until recently) a bridge access link. The Bamako and Niamey bridges over the Niger River were constructed in the 1950s and 1960s. For years, a single antiquated river crossing/ferry, poorly managed by the Chamber of Commerce, served as the only means of delivering all goods and supplies, including food aid, overland into N'Djamena--at the pitiful rate of not more than 300 MT per day.

Third, 17 years of constant civil war had destroyed the country's basic physical infrastructure, including the warehouse storage facilities and Government/private trucking fleets in N'Djamena.

Fourth, the appallingly poor road network (one of the worst in Africa) was another significant logistical constraint (see Figure E-1). Chad's 160 miles of paved roads are all in the southern Sudanian zone of the country, whereas only sandy "tracks" can be used in the Sahelian zone.

Fifth, little or no logistical infrastructure existed at the regional level (i.e., necessary transport, storage, and garage/ workshop facilities).

These final points highlight the difficulties confronting the Chadian Government, donors, and private voluntary organizations (PVOs) in the 1984-1985 emergency food aid program for Chad. To these constraints were added the political problems of moving food aid through Nigeria to Chad.

Major efforts were undertaken under the leadership of the World Food Program (WFP), as the lead donor logistics coordinator

in Chad, to identify the principal logistical bottlenecks and, with the Government of Chad and other donor support, to reduce them.

The rapid expansion in 1984-1985 of the logistics capacity via Douala and N'Gaoundere in Cameroon to southern Chad and N'Djamena from a monthly offtake of 5,000 to 30,000 MT was a major achievement of the Chadian Government/donor effort. The logistical infrastructure developed included the following:

-- The Cameroon supply line: Douala-N'Gaoundere-N'Djamena/Moundou/Sarh

-- The Chari/Logone and Mayo-Kebbi River crossings in N'Djamena and Lere, including construction of the Logone River and Lere bridges

-- The central storage/logistical complex in Chagoua (20,000 MT capacity)

-- The U.N. Agency Transport Services (the WFP, the U.N. Development Program [UNDP], and the Food and Agriculture Organization [FAO]/Italy)--300 trucks

-- WFP (and other) regional logistical bases, including those in Abeche, Mongo, Mao, and Moundou

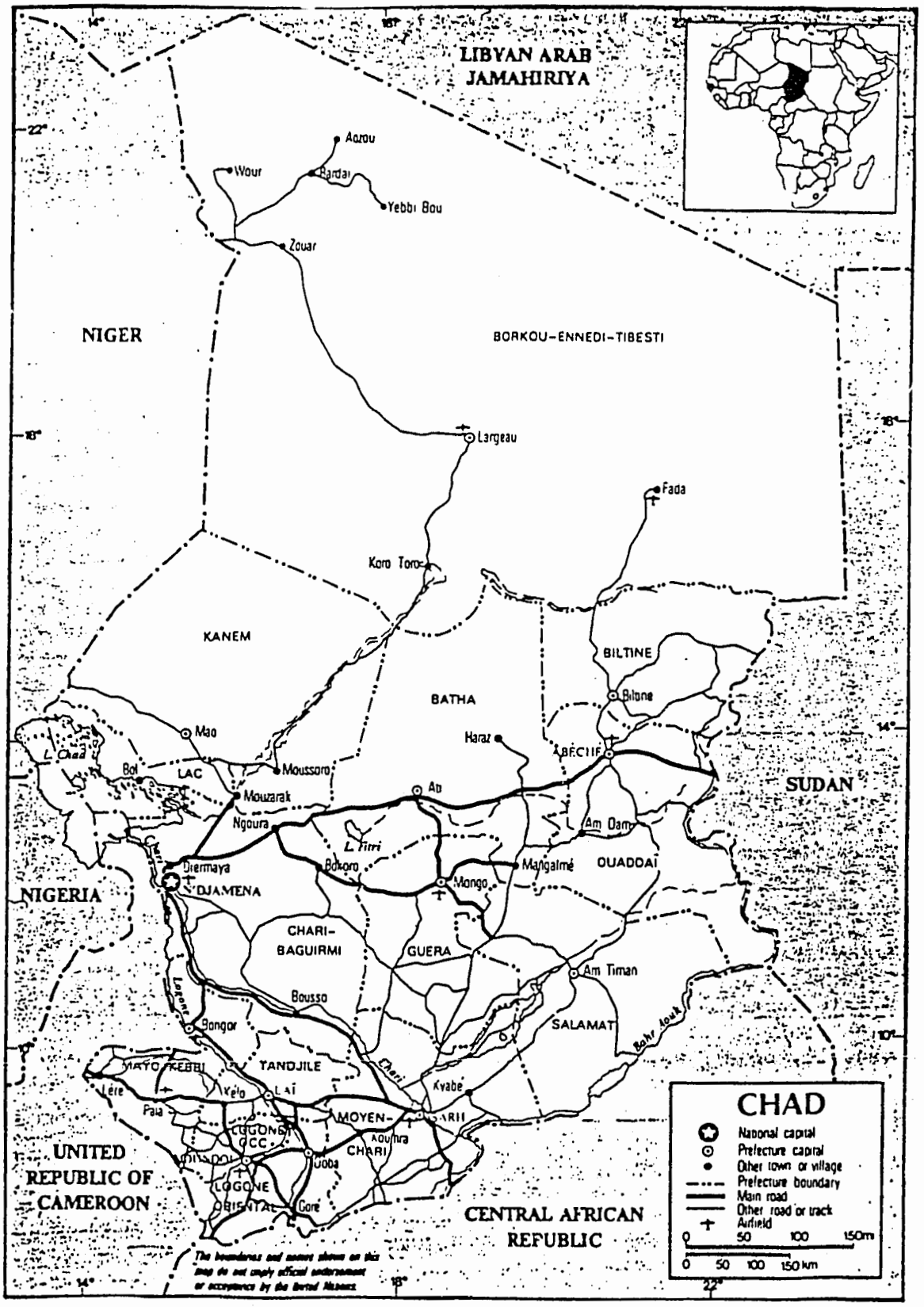
The maintenance and use of this infrastructure in 1985-1986 and after is a major concern.

2. ROADS

Over 90 percent of the population lives in the southern half of Chad. In contrast to the South, the population centers in the North are much more widely spaced and are further from main roads. Hence, the tonnages to be delivered must be transported much greater distances, over worse roads, and at greater cost relative to cargoes destined for population centers in the South.

Virtually the only paved roads in the country are in the capital city of N'Djamena (Sudanian zone) and its outskirts. Officially there are several hundred kilometers of paved roads, but after many years of hard use and virtually no maintenance they can no longer be classed as such. There are frequently long stretches of highway where vehicles must drive on trails alongside the paved road. There are just over 7,000 kilometers of dirt roads, some of which are graveled, and about 25,000 kilometers of trails negotiable by most vehicles in good weather but which, during the rainy season, are passable only by four-wheel drive vehicles and even then with difficulty.

Figure E-1. Map of Chad Showing Principal Roads



Source: United Nations (December 1981).

3. PORTS

Chad is served by the port of Douala in Cameroon and by the ports of Apapa, Port Harcourt, and Calabar in Nigeria.

In late 1982 and early 1983 (February), the WFP Transport Service made a major innovation by undertaking direct food aid deliveries by truck from ship holds in the port of Apapa, one of the best equipped on the coast of West Africa, up to N'Djamena (5-7 days) and even as far as Abeche (10-15 days) without a single transshipment. This move effectively diversified Chad's supply lines and access to sea ports by alleviating some of the congestion that had built up along the Cameroon supply line. According to the WFP, the daily offtake rate of 600 MT resulted in increases in the monthly delivery capacity from Apapa to N'Djamena. Monthly deliveries rapidly reached 18,000 MT, over three times the Douala-N'Gaoundere-N'Djamena monthly rate of 5,000 MT. The only major problem with the Nigerian supply line, which was nevertheless crucial, was the Nigerian Government's periodic closing of its borders with Cameroon and Chad or prohibition of the use of the Apapa port for Chad-bound cargo.

At the beginning of the emergency operation in 1984-1985, it was intended that most of the food aid for Chad and Niger be brought in through the port of Apapa. However, in March 1985, after some of the vessels had already arrived, the Government of Nigeria denied the use of this port for most of these relief supplies, arguing that they required the port of Apapa for their own cargoes, and directed that the ports of Calabar and Port Harcourt be used instead. There were also reports that cargoes destined for Chad were experiencing delays at the Nigerian border, suggesting that the problem was more political than logistical. Furthermore, over 100,000 MT of cargo destined for Niger was slated to enter via the ports of Calabar and Port Harcourt. Consequently, vessels that had already arrived were sent on to Douala to avoid further delays, and most subsequent vessels with cargo for Chad were discharged in Douala as well. Niger cargo was discharged in Port Harcourt and Calabar and was transshipped without undue delay.

As a result of the Nigerian Government's decision to close off the port of Apapa for food aid shipments in transit to Chad, the WFP diverted 100,000 MT of WFP and other food aid consignments from Apapa to Douala in March 1985. This sudden shift meant that Douala was forced to handle approximately 150,000 of the 200,000 MT of food aid pledges earmarked for Chad.

The port of Douala can handle vessels with a draft of up to 8 meters, or 26 feet. This restricts it to vessels of 25,000 tons deadweight or less. There are no cranes in the port of Douala, and the vessels are unloaded by ship's tackle. However,

the port has equipment for unloading and bagging bulk grain, and additional portable equipment can be moved in if needed. The docker workers are familiar with the process, and some of them are trained in using stitching machines. There is storage space in the port area itself for 30,000 MT, with additional space for 20,000 MT outside the port area.

From February through April 1985, WFP/Chad undertook a series of logistics missions to Cameroon (N'Gaoundere, Douala, and Yaounde) in collaboration with WFP staff in Cameroon to examine the various bottlenecks along the Cameroon supply line and make specific proposals to the Cameroon Government to rapidly increase the monthly offtake from 5,000 to 30,000 MT. Through the assignment of food aid logistics coordinators to Douala and N'Gaoundere (the railhead), the WFP served as a broker on behalf of the donors to coordinate and maximize the productive output of the four major operational parties actively involved in the Cameroon transport system (i.e., the Douala Port Authorities, the REGIFERCAM Douala-N'Gaoundere railroad, the transit agents, and the trucking syndicate). The application of practical management techniques had a dramatic effect on the daily offtake capacity. Productivity in the port of Douala and at the N'Gaoundere railhead more than doubled by instituting a second work shift, resulting in smooth and streamlined unloading and transshipment of food aid consignments.

4. TRANSPORTATION FROM PORT TO CENTRAL AND REGIONAL WAREHOUSES

The distance from Douala to N'Djamena is slightly more than 1,000 miles. Although some of the freight destined for Chad goes by truck the entire distance, most of it is transported by a combination of rail and road. The road between Douala and the railhead at N'Gaoundere in northern Cameroon is mountainous and has many steep grades, making for slow travel and high fuel consumption.

The REGIFERCAM railroad is an agency of the Cameroon Government. Freight is loaded onto trains in Douala and shipped to N'Gaoundere, where it is reloaded onto long-haul trucks (generally trucks of 30 MT and over) for transport to the points of destination in Chad. The rail and road combination takes 10 days, and up to 30,000 MT per month can be handled. According to the FAO/WFP study, direct road transport from Douala to N'Djamena takes about 15 days, and approximately 7,000 MT per month can be handled.

The WFP logistics experts in Douala and N'Gaoundere were able to persuade the Cameroonian authorities to organize two block trains per day. (A block train is a train dedicated solely to one kind of cargo.) With the support of the Cameroon Ministry

of Transport, REGIFERCAM established a Food Aid Block Train Operation, calling for the daily forwarding of 1,200 MT in two trains (30-40 MT railroad cars). Immediately following the early morning train arrivals in N'Gaoundere, the food aid cargo was transferred directly from the railroad cars into 30 to 35 MT semitractor trailer trucks, thereby avoiding the need for intermediate storage.

To prevent pilferage en route, it was reported that the boxcar doors were often welded shut in Douala and reopened only on their arrival in N'Gaoundere.

The relief supplies were hauled from N'Gaoundere to points in Chad by long-haul trucks. Some of these trucks came from the Chadian and Cameroonian private sectors and some from the increasingly large fleet of U.N. trucks.

The owners of the private sector fleet are members of two unions, the National Union of Cameroonian Truckers (SNTRC) and the Chadian Truckers Cooperative (CTT). The SNTRC is reported to have approximately 350 long-haul trucks available and in good condition; the CTT reports nearly 600 such vehicles among its members. Both unions mobilized 400 30-40 MT long-haul trucks to guarantee 1,200 MT food aid offtake daily from N'Gaoundere to N'Djamena and into southern Chad. As the Chadian union long-haul fleet was insufficient to ensure a stable daily offtake into Moundou and Sarh, the two primary discharge/distribution centers in southern Chad, the Franco-Chadian Cotton Company made 30-50 MT semitractor trailer trucks permanently available during the height of the crucial 4-month distribution/lean period (May-August 1986). Finally, through the installation of a three-way, high-frequency radio communications network between N'Gaoundere, N'Djamena (base station), and Moundou in the South, WFP/Chad was able to monitor and verify truck offtake and arrivals daily, thereby keeping both the Chadian Government's Ministry for the Control of National Disasters and interested donors/PVOs fully informed.

Very little delay was encountered on the Cameroon part of the operation. Enough large trucks were available from December onward to move the goods, and the road from N'Gaoundere to N'Djamena is paved to the Chad border. However, just before N'Djamena, the border is formed by the Logone and Chari Rivers, which must be crossed by ferry. To resolve this problem, a temporary dirt-fill crossing was built to handle trucks during the spring while the river was low.

Between February and July 1985, a semipermanent bridge was constructed over the Logone at N'Gueli so it would be ready by the time the rains came and the rising river washed out the temporary crossing. (The new bridge is called semipermanent because it can be dismantled if necessary. It is, however, set

on concrete pylons and should stand for many years if properly maintained.) This bridge was completed in July and has greatly expedited the transport of supplies across the river into N'Djamena.

In July 1985, the bridge over the Mayo-Kebbi River at Lere in southern Chad was washed out. The ferry, no longer needed at N'Gueli, was then moved down to facilitate the transport of cargo destined for the southern region.

An examination of Table E-1 shows that from November 1, 1984 to December 31, 1985 a total of 180,349 MT of food arrived at the Nigerian and Cameroonian ports and 181,014 MT had arrived at Chadian points of entry. (Commodities already in the pipeline are believed to account for the difference in these two figures.)

The peak month for arrivals was May 1985, when 41,780 MT arrived in Chad: 12,000 MT via the port of Apapa and nearly 30,000 MT from Douala.

4.1 Findings

1. WFP moved quickly to provide adequate staff at Douala and N'Gaoundere. The WFP's foresight and flexibility ensured that cargo bound for Chad was kept on schedule after the Nigerian ports were closed to Chad. Additional personnel at the port in Cameroon and the destination point in Chad were supplied quickly by the WFP before the need was felt.

2. The Governments of Chad and Cameroon and the donors moved quickly to correct the problem of the river crossing between Cameroon and Chad. The construction of a temporary dirt-fill, a semipermanent bridge, and the installation of a ferry crossing proved to be innovative, appropriate, and effective resolutions to problems encountered at river crossings. Supplies continued to be delivered despite the potential constraints of high-water/low-water and heavy rains. And, if maintained, the semipermanent bridge constructed at N'Gueli will stand for many years.

3. The trucks supplied by various U.N. organizations were instrumental in ensuring delivery of supplies to destination points in Chad. A major contributor to the rapid transportation of supplies from N'Gaoundere to Chad was the large fleet of UNDP long-haul trucks. However, now that the big push is over, many of them are sitting idle.

4. The current road system in Chad makes transportation of goods too costly and too difficult to be effective. The roads in Chad are inadequate for moving large quantities of goods quickly

Table E-1. Shipments Expected in Port, Arrivals in Port, and Arrivals in N'Djamena, by Month (metric tons)

Month	Expected in Port	Arrived in Port	Arrived N'Djamena
November 1984	9,048	9,048	405
December	11,439	8,419	342
January 1985	7,493	9,754	21,286
February	10,184	9,851	8,658
March	10,995	12,689	6,790
April	28,579	29,527	14,530
May	42,346	42,287	41,780
June	8,261	8,261	27,079
July	24,775	23,053	19,157
August	17,341	12,552	15,739
September	4,598	8,469	8,623
October	3,126	5,443	14,151
November	439	439	1,813
December	1,517	557	661
Total	180,141	180,349	181,014

Sources: Evaluation team, February 1986; USAID and WFP records.

and in all weather conditions. Several donors are now preparing projects to upgrade and maintain some of the more important road arteries in Chad.

5. The Nigerian ports were not reliable ports of entry for Chad cargo. Because of the volume of deliveries to Chad and other drought-stricken countries, and other logistic and political constraints, cargo destined for Chad was hampered by undue delays when shipped through Nigerian ports.

6. The port of Douala performed better than expected. The port of Douala can handle vessels of 25,000 tons deadweight or less, with drafts of up to 8 meters (26 feet). It is equipped with unloading and bagging equipment, trained personnel, and storage space for bagged grain at or near the port. Douala's port has proved adequate for shipment of emergency supplies for Chad.

4.2 Conclusions

1. The prompt actions taken by the WFP, other donors, and the Governments of Chad and Cameroon eliminated bottlenecks, ensured quick delivery of emergency food to Chad, and consequently saved many lives.

2. Some members of the private sector are concerned by competition from the large fleet of UNDP trucks. Because the trucks are completely paid for and need to cover only operating expenses, not replacement costs, this would appear to be a reasonable concern. The prompt and effective emergency response of the donors, essential at the time, could produce a negative impact on the private sector in the future if not handled carefully.

3. An extensive road reconstruction and maintenance program will make a significant contribution to Chad's rehabilitation and will expedite any needed future emergency operations.

4. When it became evident that the Nigerian ports were going to pose problems, the donors quickly adjusted and shipped most of the Chad cargoes to the port of Douala.

4.3 Recommendations

1. Coordination between donors, host governments, and neighboring governments should be a priority at all stages of planning and implementing emergency assistance programs. The excellent donor/Government of Chad coordination experienced

during the latest drought should be at the very top of the planning exercise in any future emergency operation.

2. UNDP should explore how the U.N. long-haul fleet with its support facilities could be incorporated into the private sector. Such an approach would maintain the fleet's availability for future emergencies, if needed, and avoid any possibility of unequal competition with the commercial sector. Any smaller vehicles could be merged with the WFP fleet to be used in making regional distributions.

3. Consideration should be given to encouraging PVOs to organize projects for the repair of secondary roads using a food-for-work mode, recognizing both the need for better roads in the rural areas and the developmental uses of food aid. Focused A.I.D. assistance for road repair and for meeting the continued food needs of the Chadian drought survivors could be combined in projects implemented by PVOs. The dual objectives of road development in rural areas and successful transition from relief assistance to development assistance could be effected simultaneously.

4. Communication between donors and port-of-entry authorities is necessary to ensure timely delivery of emergency supplies. Donors should try to get assurances of cooperation from the relevant authorities before operations begin and should be prepared to act quickly in case of unforeseen problems.

5. FREIGHT COSTS

Because of the great distances between the ports of the donor countries and the points of distribution in Chad, the cost of delivering commodities is very high.

Ocean freight from U.S. ports to Douala vary from approximately US$50 per MT on non-U.S. flag vessels to over US$100 per MT on U.S. flag vessels.

According to the FAO, the cost of moving cargo from Douala to N'Djamena by rail/road combination was approximately US$138/MT, whereas the rate for a truck for the entire route was US$195/MT. Internal freight rates are set by the Government of Chad and are calculated on a ton-per-kilometer basis (t/k). Three rates apply to the three regions of the country based on the difficulty of the terrain and the condition (or presence) of the roads.

The southern region consists of the prefectures of Mayo-Kebbi, Moyen-Chari, Logone Occidental, Logone Oriental, and

Tandjile. The rate is FCA francs (FCFA) 47.50 per t/k (US$0.12, at FCFA 400 = US$1). The central region includes the prefectures of Batha, Biltine, Guera, Ouaddai, Salamat, and Chari-Baguirmi. The rate for the region is FCFA 55.00 per t/k (US$0.14). The northern region comprises the prefectures of Bourkou-Ennedi-Tibesti, Kanem, and Lac, for which the rate is FCFA 80.80 (US$0.20).

As mentioned earlier, the greater distances and higher rates make deliveries in the northern region a costly venture relative to the costs of deliveries to the southern region. For example, the freight rate to Rig-Rig, in the northern prefecture of Kanem and approximately 470 kilometers from N'Djamena, would be roughly US$94 per MT (470 X 80.80 = FCFA 37,976), whereas the freight rate to Binder, in the southern prefecture of Mayo-Kebbi, and also approximately by 470 kilometers from N'Djamena, would be as little as US$57 per MT (470 X 47.50 = FCFA 29,735).

A ton of sorghum that had cost US$110 in the United States would have a final cost of more than US$400 when delivered to Abeche, calculated as follows:

One ton sorghum	US$110	(Commodity Credit Corporation value)
Ocean freight	110	(U.S. flag carrier)
Douala-N'Djamena	138	
N'Djamena-Abeche	105	
Total freight	US$463	

Using a non-U.S. carrier at US$50 per MT would bring the total to US$403. This is freight only and does not account for the costs of storage and management, for which figures are not readily available. This demonstrates why serious attention should be given to careful handling and storage practices.

6. STORAGE IN N'DJAMENA

The main storage area is a large complex of 25 warehouses in Chagoua, on the outskirts of N'Djamena, with a capacity of 24,500 MT. An additional 18 warehouses spread throughout N'Djamena have a capacity of 26,250 MT, according to the FAO. Of these, the WFP occupies 10, with a capacity of 16,950 MT; CARE has 6, with a capacity of 5,900 MT; and LICROSS has 5, with a capacity of 3,050 MT. The remainder are occupied by agencies or ministries of the Government of Chad.

The warehouses are generally well constructed and have been repaired since the recent fighting. It was not possible to visit

them all; limited time restricted the evaluation team to spot checks.

The CARE warehouses the evaluation team visited were exceptionally well managed. The bags were on pallets and stacked in an orderly fashion to make counting possible. The piles were away from the walls with sufficient space between them to allow good ventilation, and the floors were swept clean. The warehouses had recently been fumigated, and there were no signs of insect infestation.

The warehouse of the Chadian National Cereals Office (ONC) was also well maintained. The bags were on pallets and were stacked in an acceptable although not entirely orderly manner--an accurate tally would have been difficult.

Only two of the WFP warehouses were visited. In one, the bags were stacked in a disorderly fashion and piled too high. Any meaningful tally would be impossible, and the weight of the high piles will cause considerable breakage of the bags on the bottom. There was also a large quantity of broken bags lying around, which is likely to attract vermin. The second warehouse was in a much better state. It had just been restacked, the goods in the damaged bags were being rebagged, and the floor had been swept.

The team was told by the head of the WFP that they are giving serious attention to their storage methods, including proper stacking, ventilation, and fumigation, now that the pressure is off and the commodities in stock must be preserved for the next season.

At the time of the visit to the warehouse complex, the LICROSS warehouses were closed for the day, and there was no opportunity to make another visit.

7. REGIONAL STORAGE

The Regional Logistics Center in Abeche has two 2,000-MT capacity warehouses, which were completed in March 1985. During the team visit, two temporary warehouses of 500 MT each were under construction.

At the time of the visit, there was obvious infestation. There was considerable spillage, and the bags were piled haphazardly. No pallets were in use. The WFP representative said that it was difficult to fight infestation by fumigating the warehouse because new shipments often arrived infested and reinfested the existing stocks.

The Regional Logistics Center at Mao has a storage capacity of 2,500 MT. There was evidence of past infestation, but we observed no live insects at the time of our visit. We were told that the warehouse had just been fumigated. The commodities were reasonably well stacked, and the floor was clean. However, pallets were not used.

The Regional Logistics Center at Moundou has a reported capacity of 1,000 MT. At the time of the visit no pallets were in use, the piles were not stacked in an orderly manner, and there was evidence of infestation. One of the warehouses is at ground level and has no diversion ditches. During the rains, it had been flooded, resulting in damage to the entire bottom layer of bags.

Time did not permit a visit to the Mongo center, which has a reported capacity of 3,500 MT.

7.1 Findings

1. The cost of the food had multiplied four times between its procurement in the United States and its arrival at the regional warehouse. Because of the enormous distances between the ports of entry and the Chadian points of destination, the requirement that U.S. flag carriers be used, and the poor road conditions in the North, the initial cost of emergency grain had quadrupled by the time it reached the needy people in Chad. Rail transportation is cheaper than truck freight, although not feasible in all areas.

2. A large portion of the relief foods was improperly stored and showed signs of insect infestation. This was apparent in warehouses managed by donor organizations and those managed by the regional Chadian Government. It was not possible to determine how much grain was lost due to poor storage procedures, but there is evidence that improvements are being made.

3. USAID/Chad has funded the Food and Feed Grain Institute of Kansas State University to conduct a training course on proper cereal storage in April, 1986.

7.2 Conclusions

1. The poor road conditions contributed directly to higher transportation costs.

2. Each ton of food allowed to go bad is equivalent to losing over US$400.

3. Considerable food will be lost if the storage deficiencies in N'Djamena and the regions are not corrected.

4. There is a real need for training warehouse staff in proper storage methods and insect control.

7.3 Recommendations

1. Adequate funding should be assured by the donors to provide for fumigation, pallets, and so forth to ensure proper storage and handling of the food. Once the measures are implemented, periodic inspections should be conducted so that proper storage and handling is maintained.

2. All agencies handling and storing food should be encouraged to have their staff participate in the Kansas State training seminar. This will help ensure that the proper procedures are implemented during normal conditions and that the measures will continue to be implemented should another emergency arise.

8. TRANSPORTATION: FROM REGIONAL WAREHOUSE TO POINTS OF DISTRIBUTION

This is the point at which the greatest logistical problems were encountered because of the late arrival of appropriate vehicles. Most of the points of distribution were off the main roads and so required smaller vehicles to transport the commodities. During the rainy season these roads were accessible only to all-terrain vehicles.

It became apparent in February that there were not enough vehicles to move the 10,000-14,000 MT per month that the program required. Funding for purchase of additional trucks was requested and trucks were ordered. However, many, if not most, of the trucks did not arrive until July and August, making it impossible to pre-position much of the stock at the distribution level before the rains began. During the rains, even the all-terrain trucks had to reduce the size of their loads and move at a fraction of their normal rate, which greatly slowed the operation.

The majority of the short-haul trucks involved in the relief operations were operated by WFP, LICROSS, and CARE, with occasional assistance by trucks from the FAO fleet.

At the time of the team's visit in January 1986, the WFP had approximately 40 trucks of various sizes (20 tons and under) and in various states of repair. Most of their fleet are all-terrain vehicles that have suffered considerable wear and tear during the past rainy season. Among this number are 15 MAN ex-Federal Republic of Germany Army trucks that date back to 1965. These trucks were completely rebuilt prior to sending them to Chad, but they arrived without spare parts or service manuals. They carry only 5-7 tons and consume much more fuel per ton than do the newer Berliet and Mercedes trucks.

LICROSS has a fleet of 18 trucks--two 35-ton Mercedes semi-trailer trucks, ten 20-ton Steyrs, three 8-ton Mercedes, and three 5-ton Fiats.

The CARE fleet consists of 30 trucks, nearly all of them all-terrain. There are 10 Renault 6x6 15-tonners, which arrived by airlift during July and August 1985; 10 Renault 6x6 16-tonners, dating back to 1983; 7 Volvo 10-ton trucks from 1981; 4 Berliet 4x2 10-ton trucks from 1977; and 1 Renault 10-ton dump truck.

8.1 Findings

1. An inordinate amount of time passed between the recognition of the severity of the emergency and the request for more vehicles to assist in food shipments, resulting in higher costs and limiting the timely delivery of food distributed in Chad. Although the emergency appeal for 100,000 MT of food went out to the donors in November 1984, and CARE proposed augmenting its fleet with 10 heavy, all-terrain trucks in February, the trucks were not ordered until June 1985. Because of the delay in the funding and ordering of the trucks, it was necessary to airlift them in to Chad at great expense.

2. Further delays occurred when the trucks had to be equipped for the shipments they would be making. The trucks arrived between July 31 and August 4, 1985. On arrival, they had to be outfitted with cargo beds. The first truck went into action on August 16 and the last one on September 25.

3. Donors frequently donated trucks of the models that they preferred to give rather than of the type deemed most appropriate by those in the field. This often resulted in the donation of obsolete or inadequate vehicles incapable of serving the needs of an emergency operation.

8.2 Conclusions

1. Because of the delay in assured funding, ordering was delayed.

2. Had the funding and ordering occurred soon after the proposal was submitted, the trucks could have been shipped by sea to Douala and driven to Chad. This could probably have been done for under US$10,000 rather than the US$280,000 that resulted from the delay. This was a very costly, although by then necessary, operation.

3. Because of the delay, a large quantity of the needed food was not delivered before the rains began, which caused great hardship.

4. Frequently, the trucks contributed were not appropriate to the conditions. They were two-wheel drive when four-wheel drive was required. Some were old and nearly worn out, and spare parts were not readily available in-country. They will rapidly become obsolete.

8.3 Recommendations

1. At the very beginning of an emergency operation, the field should determine how many trucks and of what type will be needed.

2. A tally should then be made of the number of trucks already available and the number that must be ordered.

3. Funding should be secured and orders placed early to allow for timely delivery.

4. Donors should send the types of truck requested by the field, not those they may have on hand that they want to remove from their inventory.

9. REPAIR FACILITIES

There are few if any well equipped workshops in the private sector in Chad. Spare parts are hard to find and are very expensive. (This is probably the main reason that less than half the trucks of the Chadian National Truckers Cooperative are actually working at any given time.) As a solution to this dilemma, the UNDP, WFP, CARE, and LICROSS have set up their own workshops and import their own stocks of spare parts.

The UNDP has one large workshop at Chagoua, a suburb of N'Djamena. It is well equipped, relatively well stocked, and apparently well managed by a senior technician from Canada. They are able to make nearly any required repairs to keep their fleet on the road.

CARE has a very well equipped and managed workshop in N'Djamena that repairs and maintains the entire CARE fleet. They do not have workshops in the outlying regions, but bring their vehicles in for regularly scheduled maintenance. Other agencies have smaller workshops or, in some cases, mobile workshops that visit their various centers.

The WFP has workshops as a part of its logistics bases at Abeche, Mongo, and Mao. These workshops were set up by Swiss mechanics provided by Swiss Disaster Relief. They service the WFP vehicles as well as the fleets of several international organizations working in the regions.

The team was able to visit the workshops only at Abeche and Mao. Both bases are well equipped and are, for the moment at least, well maintained.

The absence of spare parts in the regional centers is a serious problem. When parts are required, they are ordered from N'Djamena by radio and dispatched by the first available carrier. Unfortunately, the U.N. center in N'Djamena does not have an adequate inventory of spare parts and must purchase them locally or order them from Europe. This system results in delays waiting for parts to arrive or scavenging from other vehicles that are also idled pending the arrival of parts.

The 21 MAN trucks donated by the Federal Republic of Germany, for example, are now going through this process. Parts are not available in West Germany because that model is no longer made. The vehicles remaining in Chad will be robbed successively to keep some of them on the road, obviously an unsatisfactory solution to the problem. All parts do not wear out evenly, and eventually the WFP will have 21 relics that no longer run or have parts to contribute to keep other trucks running. Enterprising Chadians may find uses for the scrap metal that will remain.

The training of Chadian mechanics was another problem encountered. The WFP has recruited several mechanic trainees who are being instructed by expatriate master mechanics. However, most of the Chadian trainees are illiterate and cannot read a service manual or the gauges necessary to accomplish their tasks. Another concern is the imminent departure of the Swiss master mechanic in Mao, for whom no replacement had been announced at the time of the evaluation team's visit.

These logistics bases are important because they can play a important role in the transitional programs as the agencies move into development activities. They would also be on-line in case of future emergency operations.

9.1 Findings

1. The workshops at the logistics bases are well-placed, well-organized, and present the only viable repair facilities in their particular regions. These workshops currently service the vehicles of the various international agencies in the region as well as official vehicles of Chadian Government offices. They are managed by expatriates and, in some cases, use innovative methods, such as keeping an entire inventory of spare parts on hand, to remain useful and effective.

2. Lack of readily available spare parts is a serious problem. Trucks sat idle while they awaited replacement parts, which often led to cannibalization to keep some of the fleet in running order. The result is a net loss in the number of functioning vehicles.

3. Untrained Chadians, most of whom are illiterate, are working as apprentice mechanics. Although Chadians were being trained to repair vehicles, serious problems arose because they were not skilled and could not read the manuals or the gauges.

9.2 Conclusions

1. Workshops in the areas where development programs are getting underway can make an important contribution to the development process.

2. The workshops fill a professional training role as well as a vital repair and maintenance function for the development agencies working in the area.

3. The lack of readily available spare parts causes serious delays in the repair of vehicles, which reduces the size of the operating fleet.

4. It is unrealistic to believe that illiterate men can become fully trained, functioning mechanics.

9.3 Recommendations

1. The workshops represent an important investment and should be funded and supported at least through December 1987.

2. A system should be devised for maintaining a partial inventory of spare parts at the centers and a complete inventory at the main shop in N'Djamena.

3. WFP should recruit a teacher of adult literacy for each workshop, and the apprentices should be encouraged to participate.

10. AIRPORTS

The only airport in Chad with a paved runway is the international airport at N'Djamena. It was capable of handling aircraft up to the size of the DC-10 and the Airbus, but it can no longer handle large aircraft because it was partially destroyed by Libyan armed forces. The runway can still handle the C-5 Galaxy. Many smaller airports with dirt strips provided access by light plane when time was a major constraint. In years past, these dirt strips have occasionally been used by C-130 aircraft.

11. COMMUNICATIONS

Several radio networks operate in Chad, including those of the WFP, LICROSS, CARE, and MSF, which are linked by short wave radio to their program outposts in the field. This allows the rapid exchange of information between program operations and central administration. When one agency's system is down, it is free to use another ageny's system where available. At least one agency, LICROSS, has a radio technician on hand to keep the system operating.

11.1 Finding

Radio communication was a standard feature of the relief operation.

11.2 Conclusion

Radio communication greatly facilitated the exchange of information between headquarters and the field, resulting in more efficient operations.

11.3 Recommendation

In case of emergency, donors should intervene at as high a level as necessary to obtain authorization for agencies operating in remote areas to access a radio net.

APPENDIX F

EMERGENCY FOOD ALLOCATION PROCEDURES AT THE REGIONAL LEVEL

Chad has a well-developed system for allocating food at the regional level involving a system of Regional Action Committees, chaired by the Prefect, in which the provincial government, its technical services, private voluntary organizations (PVOs), the United Nations, and donors active in that province or prefecture participate. There are also Distribution Committees at the subprefecture and canton levels.

The attached documents are samples drawn from Ouaddai and Kanem Prefectures that illustrate how the system works throughout the country. Generally, the committees were more organized and worked better in the Sahelian zone than in the Sudanian zone, the latter commonly having been organized for the first time in 1985. The following documents were drawn from the Sahelian zone:

-- Normal Distribution Path for Free Food Operations at Regional Level, Ouaddai Prefecture (World Food Program [WFP])

-- List of Participants at the Regional Action Committee Meeting for the Prefecture of Ouaddai, January 18, 1986

-- Minutes of the Regional Action Committee, Prefecture of Kanem, November 20, 1985

-- Record of Food Distribution to the Population of the Sultanate of Mao, December 14, 1985-January 10, 1986

-- List of Participants at the Regional Action Committee for the Prefecture of Kanem (Mao), January 21, 1986

World Food Program: Normal Distribution Path for Free Food Operations at Regional Level, Quaddai Prefecture

Nutritional Alert

-- Radio Message

-- Certified report by private voluntary organization or LOFP to the Regional Action Committee or to the Prefect

Evaluation Mission

-- Regional mobile team (EMR)

-- Committee assigned by Regional Action Committee if regional mobile team is not available

-- Same day departure for evaluation mission

Results of Mission

-- Radio contact (extreme emergency)

-- Medical-nutritional evaluation form given to WFP as to quantity to be sent

WFP Action

-- Preparation of food allotment

-- Logistics: dispatch invoice and truck

Distribution

-- Carried out by regional mobile team or local authorities directly to disaster victims (extreme emergency cases)

Distribution Report

-- Sent to WFP and Regional Action Committee

-- Report prepared by regional mobile team or administrative authorities

Control Mission

-- Prepared by regional mobile team 3-4 weeks later for the report on the evolution of the situation

List of Participants for the Regional Action Committee Meeting, Ouaddai Prefecture, January 18, 1986

Name	Title	Agency/Region
Miambe, Mbaillaou	Deputy Prefect (President of meeting)	Ouaddai
Ourada, Brahim Mahamat	Sultan of Dar Ouaddai	Ouaddai
Doutoum, Mahamat	General Secretary	UNIR/Ouaddai
Errest, Jack	Commander	U.S. Government
Baba, Abdedine	Subprefect	Urban Abeche
Tchombe, Hissene Mocktar	Subprefect	Rural Abeche
Sandjo, Michel	Director	WFP/Abeche
Dia, Harouna	Hydraulic Engineer	Africare/Abeche
Huso, Manuella	Forest Ecologist	Africare/Abeche
Zucca, Gianni	Representative	SECADEV/Abeche
Bachar, Borog	Chief of Logistics	MLCCN
Bire, Ahmat	Major Epidemics Section	Government of Chad
Boinde, Michel	Sector Chief	ONDR/Ouaddai
N'Guekidaira, Abdelkerim	Primary School Teaching Inspector	Government of Chad
Demro, Anos Mordjimngar	Chief of Territorial Surveillance	Government of Chad
Ferellec, Francoise	Representative	LICROSS/Abeche
Classcok, Julie	Representative	LICROSS/Abeche
MBang, M.	Chief of Security	Abeche

List of Participants for the Regional Action Committee Meeting, Ouaddai Prefecture, January 18, 1986 (cont.)

Name	Title	Agency/Region
Rozi, Maina	Commandant	Military Police/ Abeche
Waldier, Mahamat	Secretary	Ouaddai
Issa, Moustapha	Chief	ONPHV
Idriss, Ali Malloury	Deputy Chief	ONPHV
Ahmat, Youssouf	Deputy Chief	Swissaid/Abeche
Ngare, Adaw	Deputy Chief	Ministry of Forest and Water
Neugebauer, Joachim	Delegate	Agro Action Allemand
Mouta, Adji	Medical Corps Engineer, Recorder	Regional Action Committee/ Ouaddai

Minutes of the Weekly Meeting of the Regional Action Committee, Prefecture of Kanem, November 20, 1985

Today, November 20, 1985 the Weekly Meeting of Regional Action Committee, under the chairmanship of the Prefect of Kanem, took place. All the members of the said Committee were present.

The agenda of the day included the following:

1. Adoption of the minutes of the preceding session

2. Situation of supplies already sent out to the field; organization of their distribution

3. Plan of distribution for December

4. Situation of Nutritional Centers already existing and a study of new requests.

5. Various problems

The agenda of the day having been adopted, the Chairman of the Committee opened debate by giving a succinct resume of the preceding session because the majority of the members were absent; this absence prevented the resolution of many problems.

On the second point, the conference took note of the following:

The distributions were made at Moussoro, Michemire, Zigueye, Nokou, Rig-Rig, and N'Tiona.

As for N'Tiona, Mr. Richard Ball of CARE-Chad and the supervisor of the distribution, informed those assembled that in accordance with the evaluation made by the mobile team the anticipated delivery of 100 MT had been increased to 289 MT.

The speaker also let it be known to those present that more than one-half of the huts supposedly of displaced persons were empty and also that these people were from the Illili Canton. The Committee asked the Subprefect of Mao to verify this information because certainly there were people in the Illili Subprefecture who came from the Subprefecture of Moussoro. These are surely those displaced persons.

Finally, the meeting entrusted to the Subprefectural Committee the task of distributing supplies stored in the country warehouses. In addition, they deplored the lack of supplies in certain large population centers.

As to the third point, the representative of WFP in Mao had suggested that the mobile team provide more complete information about the food situation before any decisions concerning distribution were taken. The Prefect noted this year's production would not provide sufficient food aid over a period of several months.

Vegetable farming was only a temporary solution that could not replace the farming of the dunes. Taking into account this situation, he proposed that the previous allotment be increased. He finally expressed the desire to have the supplies destined for the seven cantons of South Mao transported directly from N'Djamena to the distribution centers.

The representative of WFP agreed to do this and agreed to receive at the warehouse only supplies destined for the 21 distribution centers of the Sultanate. After frank discussion, the following figures were selected for submission to the National Action Committee for the month of December 1985.

Subprefecture	Quantity	Observation
Mao		
Rural Mao	436 MT	
Urban Mao	300 MT	
Mao Sultanate	452 MT	
	1,188 MT	
Moussoro		
Rural Moussoro and Urban Cheddra	660 MT	
Michemire	200 MT	
Salial	100 MT	
	960 MT	
Nokou		
Nokou	100 MT	
N'Tiona	289 MT	
Ziguey	100 MT	
Rig-Rig	200 MT	
	689 MT	
Total	2,837 MT	

The meeting noted that the population of Rig-Rig had practically tripled because of the massive influx of nomadic herders from Batha and other areas. The number of nomads is estimated at 17,000 according to surveys conducted by the regional mobile team.

The WFP representative noted that the criteria employed by the donating countries is often at odds with the realities of the problems (e.g., difficult terrain) faced in an effective distribution of the supplies. He informed the attendees that the delay in the distribution of supplies was due to an insufficient number of vehicles.

The zone commissioner drew attention to the critical food situation that he noted while making his rounds in the countryside and asked that the Regional Action Committee accept the figures of the Minister for the Control of Natural Disasters

Concerning the situation of the existing nutritional centers, the Chairman of the meeting, after having complimented UNICEF, expressed his concern that the closing of certain centers could cause a recurrence of nutritional problems among children because parents lack resources to provide adequate diets for their children.

As for newly created centers, the Prefect asked that UNICEF study requests very carefully because it seems that certain officials have used the nutrition centers to satisfy their personal ambitions.

The UNICEF representative stated that for a center to be closed, the level of malnutrition must fall to 10 percent. He noted that the closed centers continue to be watched by UNICEF and could be reopened if the situation required it. He added that the closing of certain centers was due to insufficient logistical support, but that the situation would be corrected with the arrival of the Norwegian team.

Having covered all the points, the meeting was adjourned at 1:30 p.m.

Signed in Mao, 22 November 1985
For the Secretary of the Regional
Action Committee

Record of Food Distribution to the Population of the Sultanate of Mao, Kanem Prefecture, Subprefecture of Mao

December 14, 1985-January 10, 1986

We, as members of the Distribution Committee of Mao, named by Decision no. 18/PK the 27th of July, 1984 by the Prefect of Kanem, effect the distribution of supplies (rice and wheat) to the population of Sultanate (rural Mao) to the following Distribution Centers.

Distribution Center	Number of Villages	Population	Number of Sacks Received (90 + 50)
Royondou	51	5,628	162
Malili	45	4,061	270
Kole	89	8,705	522
Kededina	60	13,085	466
N'Gourtoula	63	8,005	344
Guiladinga	79	11,715	385
Kolito	33	4,688	166
Goumssou	26	3,502	254
Barkabelou	20	4,840	312
Barra	30	4,993	225
Wadjigui	23	2,610	87
Tarfe	32	5,857	362
Youno	23	3,027	104
Legra	33	4,133	157
Billa	35	6,479	410
Telelenga	27	9,834	125
Melea	20	9,811	119
Bouroukou	45	8,043	305
N'Guilea	44	8,875	330
Sidi Malari	98	21,921	957
Koumbagri	36	4,565	162
Total		154,091	6,224

We hereby hold the aforesaid to be true and valid.

List of Participants at the Regional Action Committee for the Prefecture of Kanem (Mao), January 21, 1986

El Hadj Mamadou, Affono	Kanem Prefect
Ali Adji, Abderassoul	General Secretary of Regional Committee of UNIR
Ali Nour, Tchele	Commander of Military Zone No. 8
El Hadj Tango	Representative of the Sultan
Mahamat Choucou Alhadji	Teaching Inspector
El-Hadj Mahamat, Nour	District Breeding Officer
Manamat, Goudja	Rural Village Hydromechanic
Bessane, Dr. Chrispin	Head Doctor and Medical Corps
Beramgoto	Representative ONDR
Patrick, Dr.	Medecins sans Frontieres
Marco, Mr. and Mlle. Liza	League of the Red Cross
Amine	UNICEF
Mbangui Dana, Koumadio	Adjunct Prefect
Galloum, Ngardjimti	Personal Secretary of the Prefect
Jato, Tcha Tokey	World Food Program
Gos-M'Bairo, Ngoniri	CARE

Signed and dated this day
22 January 1986
by K. Mbangui Dana
Deputy Prefect

APPENDIX G

STAFFING LEVELS OF ORGANIZATIONS WORKING WITH THE EMERGENCY FOOD SITUATION AND DISPLACED PERSONS

Organization[1]	Expatriate	Chadian
FAC	1	
UNDRO	2	
Africare	--	--
CARE	6	61
LICROSS	28	150
Germa Agro-Action	6	N/A
MSF	17	N/A
SECADEV	11	86
WFP	14	200
UNICEF	N/A	
ACRA	2	N/A
AICF	4	9
WVI	4	21
IHAP	5	
BELACD	N/A	
Swissaid	1	8
USAID	3	
Total	104	535

Chari-Baguirmi	Kanem	Guera	Ouaddai
1 SECADEV	4 LICROSS	2 AICF	3 LICROSS
1 CARE	1 CARE	4 LICROSS	2 MSF
2 MSF	1 WFP	2 WFP	1 WFP
2 IHAP	2 MSF	2 MSF	1 Agro-Action
	1 ACRA	3 SECADEV	1 SECADEV
			8 Swissaid

Biltine	Bathaa	Salamat	Mayo-Kebbi
3 LICROSS	3 LICROSS	1 AICF	
1 MSF	1 CARE	2 Agro-Action	
	3 MSF		

Moyen-Chari	Logone Oriental	Tandjile	Logone Occidental
1 LICROSS	2 LICROSS	2 LICROSS	1 WFP
2 MSF			2 WVI

[1]See Glossary for definitions of acronyms.

APPENDIX H

DESCRIPTION OF ACTIVITIES PERFORMED FOR THE EVALUATION

Before departure, the evaluation team received helpful briefings in Washington, D.C. at Devres, Inc., and from the U.S. Agency for International Development (A.I.D.) Bureau for Food for Peace and Voluntary Assistance and Bureau for Africa. The briefings covered the statement of work (see Appendix A), the situation in Chad, and subjects to be explored in the field of particular interest to briefing offices. Substantial documentation on emergency assistance activities in Chad and the USAID/Chad development program were reviewed.

In N'Djamena, the team met with the USAID/Chad Director, the U.S. Ambassador, the United Nations Development Program (UNDP) Resident Representative and the World Food Program (WFP) representative, the Director General of the Ministry for Control of Natural Disasters (MLCCN), the Directors General of Agriculture and Planning, and the heads of CARE, the International League of Red Cross Societies (LICROSS), World Vision International, International Human Assistance Programs (IHAP), Secours Catholique et Developpement (SECADEV), and Africare. Members of the team also attended a meeting of the Ministry's National Food Action Committee, which coordinates emergency assistance in Chad, and participated in the discussions.

Frequent formal and informal meetings were held with USAID/Chad's Food for Peace officer and his staff, and USAID/Chad's Agriculture and Health officers, as well as with UNDP/WFP, LICROSS, and CARE staffs.

The team made three field trips during its 19 days in Chad and was accompanied by a member of the USAID/Chad Food for Peace staff and a representative of the MLCCN.

The entire team visited Abeche in the Ouaddai Prefecture in eastern Chad for 3 days. Side trips were made to three villages, nearby food-for-work projects, wadi resettlements, a feeding center, and general distribution sites. Discussions were held with the Deputy Prefect, heads of local government technical services, the regional WFP coordinator, Africare, SECADEV, LICROSS, and others working at the regional level. The team attended a meeting of the Regional Action Committee in Abeche, chaired by the Deputy Prefect. Individual and group interviews were held with farm families, women, and men at the village level and at food-for-work sites.

Three of the team members visited the Kanem Prefecture, northeast of Lake Chad. They visited eight wadis and three towns selected for differences in populations (nomadic, semisedentary, sedentary displaced persons, indigenous sedentary farmers, reset-

tlement projects, and no projects). WFP's regional logistical base/garage, warehouse, and truck fleet were also examined. The Prefect and Subprefects, their technical service staff, CARE, WFP, and LICROSS regional representatives were contacted. Individual and collective interviews were held with men and women in work sites, villages, and towns.

Two team members flew to Moundou in the Logone Orientale Prefecture near the Cameroon border in the Sudanian zone, where they visited the WFP regional storage center, met with the World Vision International representative, and visited a feeding center. In the adjoining Tandjile and Mayo Kebbi Prefectures (Lai and Bongor), food-for-work projects managed by CARE were observed in fishpond culture, tree planting, urban drainage, irrigated perimeters, and related activities. Extensive conversations were held with the Chadian staff and the regional representative of LICROSS, who had carried out a large successful feeding program. Two standardized short interview forms were used for individual and group interviews. (These are described in Appendix D.)

Wherever possible, documentation was obtained from private voluntary organizations, the WFP, or Chadian Government representatives to extend the findings of the evaluation.

Prior to return to Washington D.C., the team spent a full day discussing its plans for the report and its findings with the A.I.D./Washington representative in Chad and members of his staff.

BIBLIOGRAPHY

Agency for International Development. "Emergency Projects." A.I.D. Handbook, Chapter 9. Washington, D.C.: A.I.D., January 19, 1981.

Agency for International Development. "Title II, Section 206 Program Guidelines." Washington, D.C.: A.I.D., post-1982. Draft.

Agency for International Development. "Policy Determination Using PL 480 Title II Food Aid for Emergency or Refugee Relief." Washington, D.C.: A.I.D., July 26, 1984.

Agency for International Development. "1983-1984 African Food Crisis, Lessons Learned." Internal Memorandum. Washington, D.C.: A.I.D., Bureau for Food for Peace and Voluntary Assistance/Bureau for Program and Policy Coordination, Revised June 6, 1985.

Agency for International Development. Chad Country Plan. Internal Document. Revision No. 1. Washington D.C.: A.I.D., Bureau for Africa, Sahel West African Affairs Office, June 1985.

Agency for International Development. Chad--Country Development Strategy Statement (CDSS) FY 1984. Washington D.C.: A.I.D., May 1986.

Agency for International Development. The U.S. Response to the Famine in Africa, 1984-1986. Vol. I. An Evaluation of the Emergency Food Assistance Program: Synthesis Report. Washington, D.C.: A.I.D., November 1986a.

Agency for International Development. The U.S. Response to the Famine in Africa, 1984-1986. Vol II. An Analysis of Policy Formation and Program Management. Washington, D.C.: A.I.D., November 1986b.

Berg, Allan. Malnourished People: A Policy Review. Washington, D.C.: World Bank, 1981.

Binkin, Nancy J., Mark LaPointe, G. Rao, and Dean G. Sienko. Chad Trip Report, January 29-February 19, 1985. Atlanta, Georgia: Centers for Disease Control, March 1985. Draft.

Bureau Interministeriel d'Etudes et de Programmation, Ministere d'Etat a l'Agriculture et au Developpement. Projet de Mise en Valeur des Ouaddis du Kanem en Faveur des Populations Victimes de la Secheresse. N'Djamena, Chad: Ministere d'Etat a l'Agriculture et au Developpement, April 25, 1985.

Bureau International du Travail. Programme Pilote de Travaux Publics a Haute Intensite de Main-d'Oeuvre Dans la Prefecture du Batha. Geneva: Bureau International du Travail, October 1985.

D'Altilia, D.P. Jean Pierre. Bilan d'Activite des Equipes Mobiles Medecins sans Frontieres. N'Djamena, Chad: Medecins san Frontieres, June-July-August 1985.

de Goyet, C. de Ville. The Management of Nutr'tional Emergencies in Large Populations. Geneva: 1978.

Equipe Mobile MSF and CARE Tchad/Mao. "Personnes Deplacees du B.E.T. dans la Region Nord-Est Kanem, Nord-Ouest Batha, B.E.T. Autour de Koreba." N'Djamena, Chad: Medecins sans Frontieres/CARE Chad/Mao, 1986.

Food and Agriculture Organization. Assessment of the Food, Agriculture and Livestock Situation Following the 1984 Drought--Republic of Chad. OSRO Report 03/84/E. Rome: FAO, October 1984.

Food and Agriculture Organization. Assessment of Agriculture and Drought in Chad. Report of FAO/WFP Mission of the United Nations. Rome: FAO, November 1985a.

Food and Agriculture Organization. Assessment of the Food, Agriculture and Livestock Situation in Chad. OSRO Report 03/85/E. Rome: FAO, 1985b.

Food and Agriculture Organization. Evaluation de la Situation de l'Alimentation de l'Agriculture et de l'Elevage au Tchad. OSRO Rapport No. 03/85/F. Rome: FAO, November 1985c.

Faure, Pierre. Compte-Rendu d'Activites, Octobre 1984-Septembre 1985. N'Djamena, Chad: Secours Catholique et Developpement, September 30, 1985.

Fiaga-Talamanga, Irene. Nutritional Implications of Food Aid. FAO Food and Nutrition Paper No. 33. Rome: FAO, 1985.

Finley, Michael, Sharon Gonzalez, and Reinhard Lindner. World Vision International: 1985 Annual Report, Regional Mobile Team. Internal Document. Moundou, Chad: World Vision International, December 11, 1985.

Institut National de la Statistique et des Etudes Economiques/ SEDES. Enquete Demographique au Tchad, 1964. Vol. 1. Paris: INSEE/SEDES, 1966.

Moench, Regina. LICROSS Final Report. N'Djamena, Chad: LICROSS, April-November 1985.

Moench, Regina, and Ermanna Favaretto. Programme d'Aide Alimentaire de la Ligue de la Croux Rouge et du Croissant Rouge au Tchad. Ligue des Societes de la Croix Rouge--Delegation Tchad. N'Djamena, Chad: Ligue des Societes de la Croix Rouge, July 1985.

National Service of Nutrition and Food Technology, Ministry of Health. Strategie Pour l'Evaluation de L'Etat Nutritionnel Au Tchad: Guide Pratique. N'Djamena, Chad: Ministry of Health, June 1985.

Remington, Patrick. "Foreign Trip Report (USAD): Chad Nutritional Surveillance, May 20-June 16, 1985." Internal Memorandum. Atlanta, Georgia: Centers for Disease Control, July 19, 1985.

Tuck, L. and J. Riordan. A Manual for Food Deficit Assessment, Prepared for Food for Peace and Voluntary Assistance. Washington, D.C.: Abt Associates Inc., 1985.

United Nations Office for Emergency Operations in Africa. Special Report on the Emergency Situation in Africa, Review of 1985 and 1986 Emergency Needs. New York, N.Y.: United Nations, Office for Emergency Operations in Africa, January 30, 1985.

United Nations Office for Emergency Operations in Africa. Status Report on the Emergency Situation in Africa as of 1 December 1985. Report No. OEOA/3/6. New York, N.Y.: United Nations, Office for Emergency Operations in Africa, December 1985.

U.S. General Accounting Office. "Draft of a Proposed Report for Emergency Food Assistance to Africa--Recommendations for Strengthening Program Management." Washington, D.C.: GAO, September 1985.

USAID/Chad. Basic Agricultural Information for Chad. N'Djamena, Chad: USAID/Chad, November 1985.

USAID/Chad. "PVO Development Initiatives." Project Paper, Chad (677-0051). N'Djamena, Chad: USAID/Chad, June 7, 1985.

Western, Karl A. The Epidemiology of Natural and Man-Made Disaster (Dissertation). Atlanta, Georgia: Centers for Disease Control, June 1972.

World Bank. Desertification in the Sahelian and Sudanian Zones of West Africa. Washington, D.C.: World Bank, 1985.

World Bank. "Ensuring Food Security in the Developing World: Issues and Options." Washington, D.C.: World Bank, Agriculture and Rural Development Department, July 1985. Draft.

World Food Program. "Progress Report on Approved Multipurpose Rural Development (Chad 2452) Project, N'Djamena, Chad." Undated draft.

World Food Program. "Infrastructure Logistique Pour l'Aide Alimentaire au Tchad." Note prepared for the 1985 FAO/WFP Food Assessment Mission Report. N'Djamena, Chad, 1985. Draft.