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United States Response to the Sahel Drought

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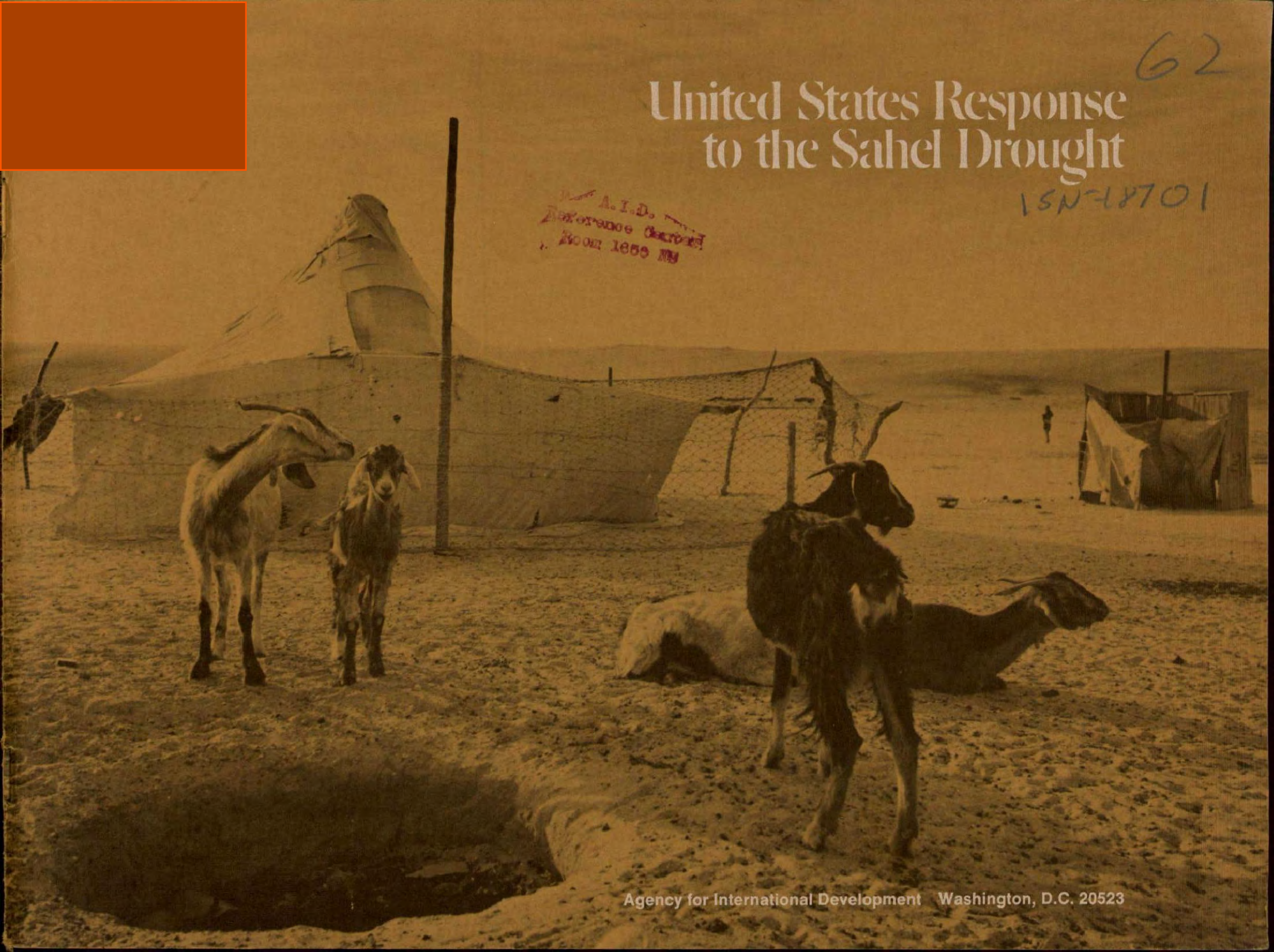
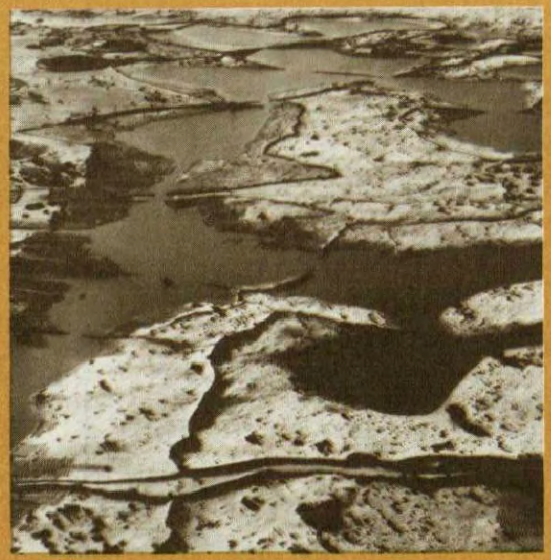


Agency for International Development Washington, D.C. 20523

3rd Special Report to the Congress on the Sahel Drought



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Introduction

Drought ravaged the Sahel region of West Africa in the late 1960's resulting in disastrous harvests in 1972-73 and triggering a large scale international relief effort in 1973-74. When the rains returned in 1974, seven years of severe drought and famine was ended for the 26 million people of Senegal, Mauritania, Mali, Upper Volta, Niger, Chad, Gambia and Cape Verde. But the effects of this recent catastrophe will continue to be felt for years to come in the Sahel-Sudano zone which spans West Africa from Senegal to Chad. This is a belt some 2,600 miles long extending from the edge of the Sahara Desert south to the northern fringe of the equatorial forests.

As many as 100,000 men, women and children may have died of starvation and disease. About one-third of the total population of the region was directly affected by the drought as large numbers of people migrated southward in search of pasturage for their animals, to the cities to seek employment for themselves or to refugee camps in search of food and medical care. This migration into the savannah areas and to the cities placed an added burden on the governments of the Sahel as well as coastal states and seriously crippled already frail economies. Not all of the people were able to return to their homes after the drought. National resettlement projects had to be undertaken. Emergency food grain shipments are still required in at least two countries, Mauritania and Chad. While cereal food crops over the past several years have been sufficient to obviate massive food shipments, total economic recovery has not been realized.

Although the impact of the drought on humans was extensive, the greatest impact was on the animal population. An estimated 50 percent of all cattle, camels, goats, and sheep was lost in 1973.

The drought, however, was not confined to the Sahelian area. It also blighted parts of Guinea, Ghana, Nigeria, Cameroon, Central African Empire, Sudan, Ethiopia, Somalia, Kenya and Tanzania.

When the drought came to world attention as a major disaster, the U.S. Agency for International Development had already begun shipping emergency food supplies to the stricken area. The United States was a major participant in the international response to the drought. This response came initially in the form of $25 million in special funding provided by the Congress under Section 639(A) of the Foreign Assistance Act of 1973 and subsequently through the Foreign Disaster Assistance Act of 1974, which made available an additional $85 million.

In authorizing the $25 million, Congress requested in Section 639(A) that: "The President shall report to the Congress as soon as possible on the solutions to

this problem of famine and further propose how any of these solutions may be carried out by multilateral organizations".

In sponsoring the 1974 Foreign Disaster Assistance Act, the Senate Foreign Relations Committee recognized that the full dimensions of the drought in the Sahel were not yet known. In its Report Number 98-835, the Committee stated:

"The Committee notes that the testimony before it demonstrates that the full magnitude of the ongoing and spreading drought . . . may well exceed the most pessimistic of current projections. With this in mind, the Committee requests AID to report fully on the extent of the drought damage of each African country which is presently an AID recipient, the estimated amount needed to relieve this damage and the amount of contributions scheduled to be made by the various local governments, by other donors and by the United States."

The 1974 rains, the response of the international donor community and the $110 million in special drought funds administered by AID led to broad improvements in food production, grain storage, public health and the overall economic situation of the Sahel and other affected West African countries. But the negative effects of the drought have been far-reaching and persistent, underscoring the fragile ecology of the region and the need for long-range, basic economic development.

This is the third report of the area by AID on the use of the special Sahel drought funds provided by the Congress. It is intended to inform the Congress on the current situation as of April 1, 1977. This document follows the first and second reports to the Congress, which described the situation as of June 30, 1974 and April 1, 1975, respectively.

United States Assistance

AID's development assistance to the Sahel dates back to the independence of these countries in the early 1960's. U.S. assistance, until the great drought of 1968-74, was modest and was channelled largely through African regional institutions and organizations. The early AID program emphasized basic agriculture and livestock development.

Emergency Food Assistance

U.S. emergency food assistance to the Sahel began in 1968 with grain deliveries and grants of Public Law 480—Title II food commodities for a grain stabilization program for five of the Sahel countries. As the dimensions of the drought became increasingly apparent, the United States increased the rate of delivery of concessional grains. Early awareness by the United States of the drought and readiness to provide emergency food throughout the crisis made

us the largest donor of food aid during the relief effort. The provision and transport of over 600,000 metric tons of food grains between 1973 and 1975 was the primary U.S. contribution to the emergency phase of the overall relief effort. An additional 27,000 metric tons (MTs) of grain were provided in Fiscal Year 1976 to meet local needs in Niger and Mauritania. These needs have persisted in Chad and Mauritania in 1977.

The main recipients of food at the height of the drought were Niger and Mali, which had the largest concentration of drought-affected populations. Smaller amounts were also sent to Mauritania, Upper Volta, Senegal, Chad, Guinea, Gambia and Cameroon. Most of the food was sorghum, a basic staple food in West Africa. Considerable quantities of special fortified food—corn-soy-milk and soy-fortified sorghum grits—were also provided to meet the needs of the most vulnerable segments of the population.

Between November, 1972 and October, 1975 over 1.5 million MTs of donated food were sent to the Sahel. Transporting this food into areas with rudimentary infrastructure required special airlifts by the United States to remote areas of Mali, Mauritania, and Chad; provision of trucks for inland transport; and making use of a deteriorated road network. (See Table I for a detailed listing of recipients of U.S. PL-480 food grains.)

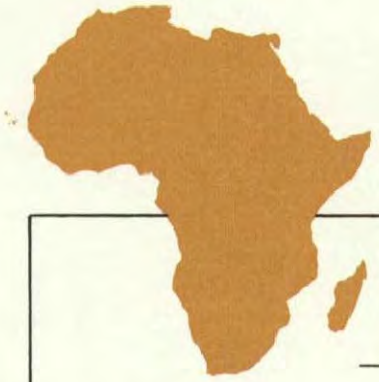


TABLE I

U.S. EMERGENCY FOOD AID TO THE SAHEL*

	FY 1973		FY 1974		FY 1975		FY 1976 (est)		TOTAL	
	MT	$000[1]	MT	$000[1]	MT	$000[1]	MT	$000[2]	MT	$000
TOTAL	**156,000**	**22,005**	**348,035**	**75,595**	**102,894**	**32,458**	**27,698**	**4,904**	**633,698**	**134,962**
Senegal	30,000	3,156	25,192	3,510	4,359	888	—	—	59,551	7,554
Mauritania	15,000	1,548	52,253	11,247	4,334	1,819	6,698	2,215	78,285	16,829
Mali	35,000	4,490	87,896	19,842	45,178	15,644	—	—	168,074	40,426
Upper Volta	25,000	4,153	37,080	8,596	5,079	1,980	—	—	67,159	14,729
Niger	46,000	7,738	112,114	26,450	28,329	8,439	21,000	2,689	207,443	45,316
Chad	5,000	288	25,500	4,600	349	191	—	—	30,849	5,261
Gambia	—	—	5,000	758	2,472	584	—	—	7,472	1,342
Guinea (other)	—	—	2,000	362	12,794	2,913	—	—	17,794	3,275
Cameroon (other)	—	—	1,000	230	—	—	—	—	1,000	230

* Title II

[1] Commodity and Transport (Transport estimated)

[2] Does not include Transport

NOTE: FY 1975 figures include donations through UNICEF. FY 73/74 figures do not include UNICEF donations (10,333 MT, value of about $4 million).

This was a major logistical, transportation and distribution operation unprecedented in the history of relief efforts. The U.S. government and cooperating U.S. private enterprises can be justly proud of the successful outcome of this operation.

Emergency Dollar Assistance

AID also made emergency personnel and equipment available and allocated funds for non-food emergency relief activities such as:

- cash grants to the United Nations Food and Agriculture Organization (FAO) Sahelian Zone Trust Fund;
- cash grants to UNICEF, U.S. voluntary agencies and the League of Red Cross Societies;
- U.S. military airlifts or airdrops in Mali, Mauritania and Chad;
- vaccines, medicines, emergency hospitals, medical equipment, water supply vehicles, tools, trucks and spare parts, fuel, seeds, grain sacks, tarpaulins and blankets;
- grain storage facilities;
- transport costs incurred by relief agencies;
- locust control;
- maintenance of relief transport routes;
- specialists to make crop reports, assess relief problems and bottlenecks and conduct nutritional and ground water surveys;
- trans-Saharan food shipment.

CILSS

To cope more effectively with the drought the seven contiguous African states most directly affected organized the Permanent Interstate Committee for Drought Control in the Sahel (CILSS). Since the international relief effort of 1973-74, Cape Verde has become independent and joined CILSS. Although Cape Verde is in the Sahelian Zone, there were no international relief activities undertaken there during the 1973-74 period. CILSS became the major African group for coordinating and designing, in concert with the donor community, the relief, rehabilitation and developmental activities for providing drought relief, for reducing the vulnerability of the Sahel to future droughts and for helping the region achieve food self-sufficiency.

Recovery and Rehabilitation

Coincidental with the emergency relief operations, the Sahelian states and the donor community began to consider more permanent measures to assist in drought recovery. As a first step in its support of the recovery effort in FY 1974, the United States committed $13.8 million to support a variety of projects designed to meet critical short-term recovery and rehabilitation (R & R) needs. AID established a simplified programming system with specialized personnel placed in each country to monitor these

R & R activities. While the specific activities financed under the R & R Program corresponded to the broad needs of the countries, a priority problem addressed was the deficiencies in the transportation and storage system which delayed or prevented the timely distribution of food grains.

A broad range of R & R projects was undertaken in each of the Sahel countries. In Niger, for example, these projects included accelerated production of rice along the banks of the Niger River, animal health and livestock feeding programs, construction of grain storage facilities, repairs to roads leading to remote areas necessary for grain distribution purposes, and pasture reseeding.

In Mauritania, R & R projects stressed strengthening food distribution systems, principally in terms of transport and storage, increasing vegetable and cereals production, and promoting animal health. In Upper Volta, R & R activities included the digging of wells, repair and construction of earthen dams, expansion of animal traction by fabrication of low-cost farm machinery, production of trypano-resistant oxen, supplementary feeding of livestock, multiplication and production of herds, construction of grain storage facilities, repair of key food distribution roads, and increasing rural public health activities.

Recovery and Rehabilitation projects agreed upon between the Senegal and United States governments include provision of pumps for wells, range rehabilitation, provision of human medicines and human and livestock vaccines, and improvement in agricultural production.

The R & R program in Chad was somewhat more modest, not because of lesser need but because of limited government capacity to absorb special aid programs. Recovery and Rehabilitation measures included development of grain storage facilities in deficit areas, establishment of an animal health program, accelerated grain and vegetable production under irrigated conditions in the Lake Chad area, construction and repair of village wells, and road repair work.

The program in Mali financed development of water resources for villages, rural health programs, improvement of maintenance on roads to remote distribution points, and improved grain storage facilities.

The R & R activities sponsored by the United States contributed to short-term recovery in such a way as to establish a base for longer-term development efforts. The close collaboration between government representatives and R & R program personnel was particularly encouraging. While the United States has always sought an active collaborative style in Africa, the R & R program served as a vivid example of host governments becoming active partners in their own development process.

Medium-Term Program

The collaborative effort continued into the next phase of the drought recovery effort. The immediate crisis had been met but the experience of the drought was that the fundamental problems of the Sahel were not being addressed and that unless a longer-term Sahel development strategy was formulated and carried out the region would continue to live in a disaster prone condition.

The Sahelian governments and the donor community recognized that special programs would be required in the immediate post-drought recovery period to prepare the region for long-term development efforts. In March, 1974, a team of AID experts consulted with individual Sahelian governments, with the CILSS and with other donors for the purpose of developing a medium-term development strategy; i.e., one which would produce measurable results within three to five years.

These medium-term projects addressed the most pressing problem in the Sahel—the adequacy of local production of food grains and livestock. As indicated in Table II, three fourths of the funds for medium-term programs have been allocated to agricultural and livestock projects. An example of a medium-term project which is already showing results is the Sahel Food Crop Protection Project, the objective of which is to improve the capacity of the Sahel to control pests which annually destroy 30-40% of the crops. The project will establish in each participating Sahel country a viable national plant protection organization to demonstrate to farmers efficient methods of pest control which will lead to increased agricultural production and farmer income.

Accelerated Impact Program

In the final phase of the drought program and based upon field experiences in 1974-76, AID introduced another effort aimed at quick impact in the region. This effort, called the Accelerated Impact Program (AIP), used simplified procedures similar to those developed under the R & R program to introduce small ($100,000 to $300,000) pilot, demonstration and experimental projects that could produce immediate results. These projects were also designed to lay the groundwork for medium-term projects funded under the Sahel drought appropriation and longer range projects funded under the soon-to-be organized Sahel Development Program. Sixteen AIP projects with a total dollar value of $3.9 million were obligated in FY 1976, the transition quarter and in FY 1977.

In summary, in the eight-country region of the Sahel and other affected African nations, AID assistance evolved from providing emergency food shipments to the provision of emergency equipment, supplies and services; to recovery and rehabilitation projects; to medium

AFRICA DROUGHT APPROPRIATIONS—FY 1974-1977

Africa-Wide Summary of Commitments
By Type of Assistance ($000)

	FY 1974				FY 1975			
	Emergency Assistance	Recovery & Rehab.	Project Assistance	Total	Emergency Assistance	Recovery & Rehab.	Project Assistance	Total
1. Sahel Countries	5,845	13,849	4,232	23,926	2,589	5,122	28,374	36,075
Chad	186	1,967	—	2,153	1,116	1,514	1,215	3,845
Mali	295	3,155	—	3,450	474	2,239	10,400	13,113
Mauritania	252	2,180	—	2,432	813	404	450	1,667
Niger	420	2,364	—	2,784	48	—	64	112
Senegal (includes OMVS)	2,936	1,421	—	4,357	117	500	6,543	7,160
Upper Volta	122	2,762	—	2,884	16	465	4,700	5,181
Regional	1,634	—	4,232	5,866	5	—	5,002	5,007
2. Other Central/W. Africa Regional	—	—	—	—	13	1,175	—	1,188
Central African Republic	—	—	—	—	—	—	—	—
Gambia, The	—	—	—	—	13	675	—	688
Guinea	—	—	—	—	—	500	—	500
TOTAL/Central West Africa Regional	(5,845)	(13,849)	(4,232)	(23,926)	(2,602)	(6,297)	(28,374)	(37,273)
3. Other African Countries	1,000	—	—	1,000	2,344	8,000	575	10,919
Ethiopia	1,000	—	—	1,000	423	8,000	100	8,523
Ghana	—	—	—	—	—	—	475	475
Somali Republic	—	—	—	—	624	—	—	624
Tanzania	—	—	—	—	1,297	—	—	1,297
Kenya	—	—	—	—	—	—	—	—
4. Operating Expenses	—	—	—	—	—	—	—	4,795
GRAND TOTALS*	**6,845**	**13,849**	**4,232**	**24,926**	**4,946**	**14,297**	**28,949**	**52,987**

* Totals for FY 1974 - FY 1977 amount to $110,000,000 which includes the following:

$ 25,000,000 appropriated in FY 1974
85,000,000 appropriated in FY 1975

$110,000,000 TOTAL APPROPRIATED

TABLE II

FY 1976				TRANSITION QUARTER				FY 1977 (estimated)			
Emergency Assistance	Recovery & Rehab.	Project Assistance	Total	Recovery & Rehab.	Project Assistance	A.I.P.	Total	Emergency Assistance	Project Assistance	A.I.P.	Total
628	955	14,305	15,888	—	1,832	2,371	4,203	102	4,995	1,278	6,375
22	—	—	22	—	730	1,362	2,092	90	1,780	—	1,870
—	500	1,500	2,000	—	373	—	373	—	—	660	660
—	335	—	335	—	—	107	107	12	—	—	12
10	—	5,912	5,922	—	—	350	350	—	—	550	550
6	120	4,439	4,565	—	—	289	289	—	—	68	68
400	—	100	500	—	—	263	263	—	50	—	50
190	—	2,354**	2,544	—	729**	—	729	—	3,165	—	3,165
5	549	—	554	13	—	—	13	—	—	118	118
—	500	—	500	—	—	—	—	—	—	118	118
5	—	—	5	—	—	—	—	—	—	—	—
—	49	—	49	13	—	—	13	—	—	—	—
(633)	(1,504)	(14,305)	(16,442)	(13)	(1,832)	(2,371)	(4,216)	(102)	(4,995)	(1,396)	(6,493)
3,020	150	711	3,881	—	—	—	—	91	814	150	1,055
68	150	—	218	—	—	—	—	91	—	—	91
—	—	—	—	—	—	—	—	—	525	—	525
—	—	—	—	—	—	—	—	—	—	—	—
2,952	—	—	2,952	—	—	—	—	—	—	—	—
—	—	711	711	—	—	—	—	—	289	150	439
—	—	—	—	—	—	—	—	—	—	—	—
3,653	**1,654**	**15,016**	**20,323**	**13**	**1,832**	**2,371**	**4,216**	**193**	**5,809**	**1,546**	**7,548**

**Includes Sahel Food Crop Protection, Project 625-916, a regional project: funds allotted to Dakar.

development assistance projects and to the accelerated impact programs. Table III summarizes the obligation of the Sahel drought appropriation from 1974 to 1977. In total, emergency dollar assistance was $15.6 million, most of it being obligated in the early years of the relief effort. The Recovery and Rehabilitation program used $29.8 million of the $110 million, most of these funds also being obligated in the first two years of the program since they were smaller projects designed in the field and carried out for the most part by host government officials. The medium-term program was more difficult to plan and carry out since more traditional AID procedures were followed. Some $4.2 million of the $53.7 million devoted to medium-term projects was obligated in FY 1974. But the bulk of the medium-term program was obligated in FY 1975 and 1976—$28 million in FY 1975 and $16 million in FY 1976 including the transitional quarter. All Sahel drought funds are now programmed and should be obligated by June 30, 1977.

The report that follows gives examples of what AID has done with the Sahel drought appropriation. The report does not attempt to describe every project undertaken with these funds since it would make the report too voluminous. This can be accomplished through a detailed review of agency financial and project records. We have attempted here only to highlight the major accomplishments through descriptions of selected activities and reflect upon the lessons learned from United States involvement and that of the host country.

The Sahelian Overview

The animal carcasses and undernourished children that were common sights during the height of the catastrophe in 1974 are gone in 1977. Their disappearance could lead to the false conclusion that there is no longer an urgent problem in the Sahel. The fact is that life in the Sahel is seldom more than a few steps from disaster. Drought is ever present. Not too deep into the bush or desert zones is unmistakable evidence that a delicate balance exists throughout the arid region. If even one rainfall cycle fails to produce its share of water, and that is often the case in the Sahel, people begin to go hungry, crop production drops off and livestock perish. If the drought continues, storage facilities are rapidly emptied and additional livestock die or are sold off at financial losses. As additional rainfall cycles fail to materialize, the already malnourished population becomes sick, become further weakened and begin to die in large numbers. And as even more rain cycles fail, the basic ecology and environment are negatively effected, some elements in an irreversible manner.

The impact of the great drought can be understood by examining the economic situation that existed before the drought. With the exception of Mauritania and Senegal, per capita income lagged below $100 annually, food imports and unfavorable trade balances were typical. As a rule, the Sahel economies were single-commodity economies, overly-dependent on one export commodity as a source of revenue. In Senegal and Niger, it was and still is the peanut; Mauritania relies almost exclusively on iron ore revenue; in Mali livestock is the prime source of national income. In Chad and Upper Volta cotton earns the foreign exchange.

With the coming of the drought, inadequate food production, storage and distribution facilities, scarcity of health facilities, high infant mortality, poor transportation facilities, illiteracy and unreliable water sources—were exacerbated. Now, the Sahel governments are struggling to return to even this pre-drought status. With the closing of the refugee camps, the challenge is to tackle the old problems in such a way as to provide the basic physical, institutional as well as human infrastructure that can withstand future disasters.

TABLE III

Disaster Relief Assistance Medium-Term Sahel Projects, by Country

(in thousands of dollars)

Country and Project	OBLIGATIONS				
	FY 1974	FY 1975	FY 1976	Transition Quarter	FY 1977
Chad					
Range and Livestock Development	—	1,215	—	500	—
LC Irrigated Agriculture	—	—	—	230	1,780
Mali					
Livestock Development	—	3,400	—	373	—
Livestock Sector Grant	—	7,000	—	—	—
Crop Production	—	—	1,500	—	—
Mauritania					
Range and Livestock Development	—	450	—	—	—
Niger					
Cereals Production	—	64	5,912	—	—
Senegal					
Cereals Production	—	3,358	489	—	—
Range and Livestock Development	—	2,225	400	—	—
Upper Volta					
Integrated Rural Development	—	3,063	—	—	—
Seed Multiplication	—	1,637	—	—	50
Agricultural Statistics	—	—	100	—	—
Regional Projects					
OMVS Agronomic Research	—	960	—	—	—
OMVS Environmental Assessment	—	—	2,500	—	—
OMVS Organ. Manpower and Training	—	—	48	—	—
Study Matam Perimeter	—	—	1,002	—	—
Sahel Crop Protection	—	—	947	200	—
Support to International Organizations	2,154	3,967	273	333	1,582
Development Studies—Sahel Sudano Zone	1,423	979	1,134	196	1,583
Sahel Technical Support	655	56	—	—	—
TOTALS	4,232	28,374	14,305	1,832	4,995

Chad

A vast landlocked country about the size of Texas with 4 million people, Chad has relatively few known natural resources and a per capita income of about $100 annually. Over 90 percent of its people are engaged in subsistence farming. During the drought, nomads and farmers were routed from their traditional homes. Many Chadians followed their herds into the Cameroon, the Central African Empire, Niger and Nigeria while still others gathered in refugee camps around the capital city, N'Djamena. Prior to the drought Chad was nearing self-sufficiency in food production and had obtained the status of being one of the largest producers of livestock in the Sahel. In fact, the country engaged in limited exportation of livestock to neighboring countries.

Severe crop failures in 1976 cancelled production gains made in millet and sorghum production since 1974. The impact of the drought was so extensive that emergency food grain shipments are again required in FY 1977.

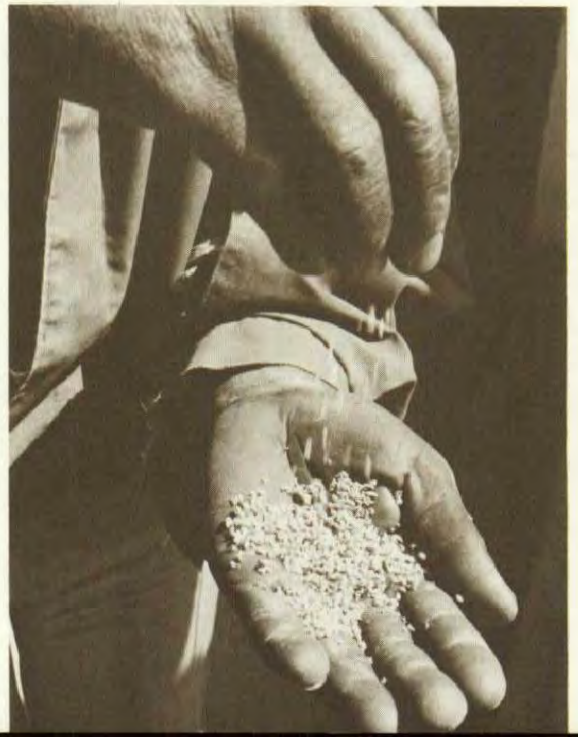
The U.S. is presently making large shipments of dried peas and other PL-480 food stocks that are being distributed as part of an ongoing Food for Work Program. (See Chart I, Page 8.) One of these projects is a CARE-supervised reforestation and tree nursery effort, which has given the parched country 550 hectares (1,200 acres) of new Acacia Albida and other drought-resistant trees that will serve as windbreaks and help to restore nutrients to the soil. Chadians plant and maintain these trees in exchange for regular payments in food commodities. In the vital area of grain storage, over $2 million in AID funds have been disbursed for warehouses, road maintenance and repair projects and for motor fuel. The Chagoua storage complex located north of N'Djamena now has three new 1,000-ton warehouses and three new 600-ton facilities built with Recovery and Rehabilitation funds. This has given Chad about 70,000 MTs of increased storage capacity.

Losses among Chad's livestock population were staggering and the country has a long way to go in herd reconstitution. Over $400,000 in AID funds have been expended to dig wells for the watering of livestock, increased food production and the treatment of animal diseases.

One of the greatest needs in Chad has been in the field of health. AID has provided the Lake Chad and Kanem regions in western and eastern Chad with vaccination equipment. Two medical teams have treated over 77,000 cases of cholera, smallpox, yellow fever, tuberculosis and measles over the past 18 months.

Chad received about 30,000 MTs of food from the United States during the drought. Food received from all donors totaled over 80,000 MTs. In moving food into Chad, the donors faced problems of transportation more serious than those in other Sahelian countries. The U.S. airlifted food into remote sections of Chad in 1973 and 1974. But in 1974, food deliveries were suspended by the President of Chad as a reaction to critical U.S. press coverage of food distribution within the country. On the dollar side, Chad received $1.4 million of emergency assistance, $3.5 million for R & R programs, $3.7 million for medium-term projects, $1.4 million for Accelerated Impact projects. (See Chart III, Page 15.)

With the termination of special drought assistance, health officials fear a new outbreak of diseases because the recent crop failures have triggered a new migration into the two regions. But the new food crisis may necessitate new funding to maintain even the most minimal living standards.



Faya-Largeau
Mao
Ati
Abéché
N'Djamena
Mongo
Am Timan
Gore

Mauritania

Because of its overwhelmingly desert character, Mauritania was especially hard hit by the drought. Mauritania is a coastal nation which borders Senegal, Mali and the Spanish Sahara. But the country is extremely dry and its 1.3 million people sustained extensive losses in food production and livestock population during the great drought. To meet the needs of the Mauritanian people, the United States provided 72,000 MTs of food valued at $15 million between 1973 and 1976. Continued shortages due to low rainfall in 1976 necessitated the provision of food by several other donors and an additional 7,000 MTs from the U.S. A substantial portion of the U.S.-supplied food aid consisted of high protein fortified foods. Total food aid to Mauritania between 1973 and 1975 came to about 186,000 MTs. (See Chart I, Page 8.) Movement of supplies from Dakar to the drought-affected areas of Mauritania was slowed by the poor condition of the river ferry at the Rosso border crossing. Food grain was subsequently airlifted into the remote eastern region in 1973 and 1974. A total of $4,553,000 in Special Drought Funds was provided. Of this total $1,077,000 came in the form of Emergency Assistance, $2,919,000 in R & R funds, $450,000 in Medium-Term project assistance and $107,000 in Accelerated Impact funding.

Although 85 percent of the population engages in farming or herding, only one-third of the country's land area is arable, the southern section near the Senegal border. Only Mauritania's fairly well developed mining sector prevented further economic deterioration. An estimated 70,000 nomads flocked into refugee camps around Nouakchott, the capital city, in 1973 to receive relief grain shipments. But the central government found itself without the capability even to channel emergency food to the drought victims. AID responded with an emergency airlift of 3,000 MTs of food grain which cost $595,086. In addition, fumigation sheets, grain bags and tarpaulins were provided to protect the supplies while they awaited shipment. AID also furnished 95,000 doses of measles vaccine, ped-o-jets for innoculations and accessory parts, costing $34,922. To speed transport, truck tires and fuel storage tanks were purchased for the cities of Aleg, Kiffa, Aioun, Kaedi and Nema. These emergency measures were soon reinforced with a series of Recovery and Rehabilitation projects that included the purchase of water trucks and water supply equipment, over $85,000 worth of multivitamins for distribution to children in the camps, rinderpest vaccine for livestock and other efforts. In addition, three 2,000-ton storage warehouses were constructed with AID funds at Aioun, Kiffa and Kaedi.

When the refugees filled the camps outside Nouakchott, drinking water had to be hauled into "tent city." Some $335,000 in Recovery and Rehabilitation funds were disbursed to establish a network of easy to use water pumping stations that was encased in concrete blocks to prevent contamination. Other projects include a women's training center that is teaching sewing, cooking, nutrition and other practical skills to former nomad women who now live in Nouakchott. This spring a new kindergarten school in the First Arrondissement of Nouakchott will open its doors to help absorb the thousands of additional pre-school age children that were brought to the capital by the drought. The $175,000 school was conceived with the idea of providing basic education to destitute nomads.

Mali

More than 90 percent of Mali's 5.7 million people are engaged in small-scale farming and livestock herding, which generates about $80 annually in per capita income. Mali's agriculture is based on the production of peanuts, millet, rice, sorghum, corn, cotton, and livestock. Before the drought, the country was a livestock exporter, even selling cattle to Niger and several other neighboring countries. But the drought decimated the herds and sent thousands of nomads into the refugee camps that quickly formed near the cities, particularly Gao and Timbuktu. As a result, Mali became the second largest recipient of U.S. food aid—almost 170,000 MTs valued at $40 million. Total food aid was about 403,000 MTs of commercial purchases granted on concessional terms. (See Chart I, Page 8.)

Given the landlocked nature of Mali, transport of food aid was difficult. The country's one railroad from the port of Dakar, Senegal was overburdened and alternative routes had to be utilized, including a route through the Sahara desert to Gao and airlifts in 1973 and 1974.

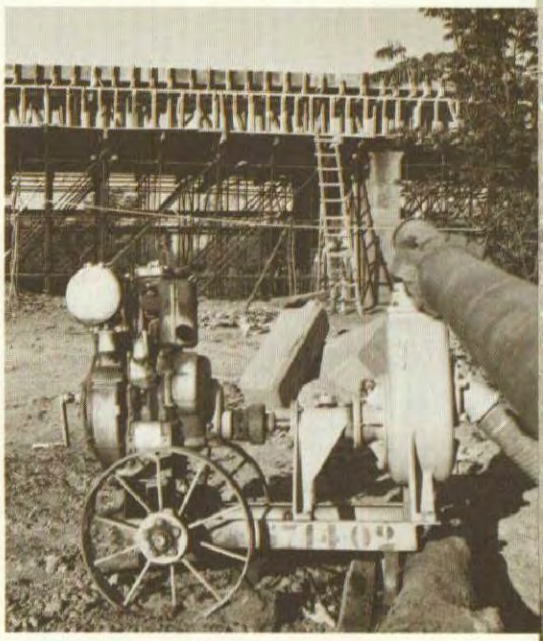
When the government mobilized to rush grain to hungry nomads in the camps of the northeast section of the country, it found that existing roads could not support the 30-ton trucks that were being called upon to haul precious relief grain and fuel. AID emergency, recovery and rehabilitation funds were provided for strengthening the road system in Mali. The Gao-Labbezenga Road was completed in June 1976 at a cost of slightly over $1 million. Malian truckers used it even while it was under construction to bring relief supplies to villagers near Gao and Ansongo. This all-weather artery is presently serving as a vital supply link to the port city of Cotonou in neighboring Benin. The $400,000 Mono River Bridge at Bougouni is expected to be completed within the next few months. It replaces a much smaller, aging structure that could not support the large transport trucks operating east of Bamako, the capital city. River transport of grain had to be abandoned because there wasn't enough water in the Niger River to sustain boat traffic during the 1973-74 period. AID supplied $665,233 worth of heavy-duty drill presses and repair equipment to help keep barges and freight crafts functioning on the river once the water level had returned to normal. The equipment went to workshops at Mopti and Koulikoro.

AID funds also made possible a massive dredging operation of the Timbuktu canal system that led to vegetable garden cultivation and a central reservoir of fresh water for the city.

Longer term projects included the construction of a vaccine production center in Bamako, which has strengthened the Mali livestock program by providing a steady supply of vaccine for the treatment of rinderpest, anthrax and pleuropneumonia.

A large livestock fattening pen is near completion at Koulikoro. It is equipped with grain silos and watering facilities. Pit silos have also been constructed in all six regions of the country near livestock grazing areas. Village drinking-water needs are being met through a series of wells dug at Nioro du Sahel, Yelimane, in the first region and at Tominian and Yorosso in the Fifth Region.

In Mali, a total of $19,596,000 in Special Drought Funds has been provided. Of this total, $796,000 went for Emergency Assistance, $5,894,000 for Recovery and Rehabilitation, $12,273,000 for Medium-Term project assistance and $660,000 in Accelerated Impact projects. (See Chart III, Page 15.)

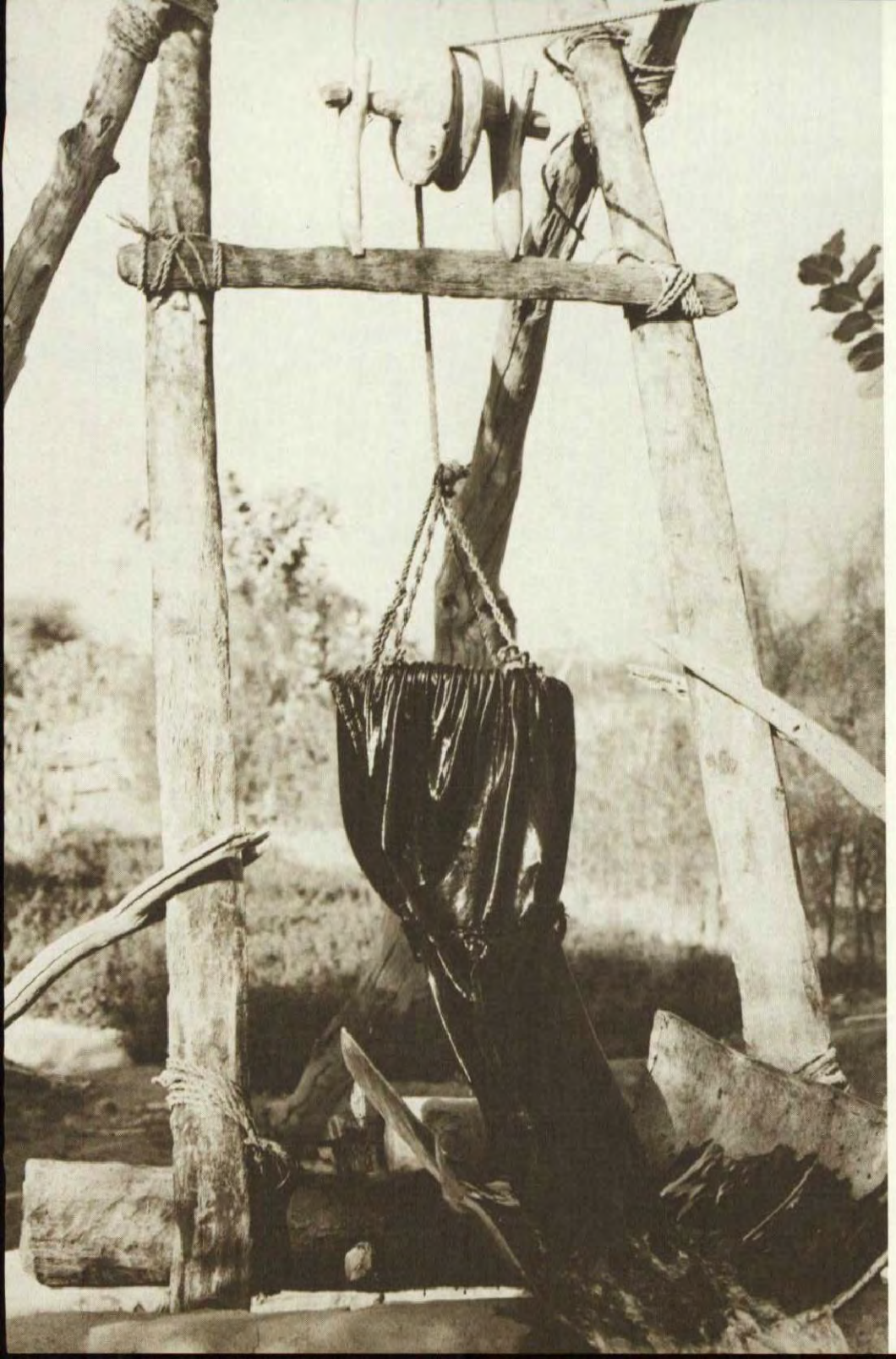


Niger

One of four large landlocked countries in the Sahel, some 75 percent of Niger's total land area is composed of desert or semi-arid zones. The current population of 4.7 million people is growing at about 3 percent annually causing a serious strain on arable land devoted to food production. Since the drought, deficits in the traditional millet crop have forced a virtual change in eating habits. The deficits prompted a request by the Government of Niger to AID for assistance in the development of the rice crop. As a result, Recovery and Rehabilitation funds were provided for the purchase of earthmovers and tractors to clear over 500 hectares (1,200 acres) of lowland adjacent to the Niger River near Mossa. The Accelerated Rice Project was funded at a cost of $370,000 and land is being prepared at such a pace that rice is expected to become a regular fixture in the diets of the people of Niger. As a supplement to this project, AID funded the training of agricultural extension agents, a local farmers cooperative and credit union, all which are involved in rice production. The Niger River Basin Cooperative Training Project cost $59,000. The two projects will provide the country with a staple alternative to sorghum and millet. Farm management training, the proper use of fertilizers, pesticides and preparation of a rice nursery for both dryland and wet-land agriculture will be emphasized. But, perhaps the largest efforts of these food production projects is the three-year-old Niger Cereals Project, which began in September of 1975. The government hopes to further increase the overall production of rice, millet and sorghum in the country by making widespread improvment in seed multiplication and grain storage activities.

The $5.9 million effort funded by AID was designed to reinforce all national cereal programs and will probably be adopted as a model for the entire country. Under the project, five seed multiplication stations will be built nationally. Centers have already opened in Niamey, the capital, and Maradi, and a network of grain storage hangers has been built and office buildings and dormitories for agricultural agents are under construction in various parts of the country. In addition, Nigeriens have been sent to several American colleges for degree training in various areas of seed multiplication.

Other R & R projects have been devoted to strengthening more specific drought-related infrastructure. A $263,000 road repair project was completed along the road linking the towns of Tahoua and Bambaye. A contribution of $217,000 helped supply 14 government mobile health units with vans, ped-o-jets, clinical supplies and medicines. In addition,



a $200,000 reforestation project was started in the southwest part of Niger and some $80,000 in seed grain was distributed to nomads turned farmers near Agadez.

A vital concern in the country is the status of the livestock population, which sustained 30 percent losses during the drought. AID supplied funds to the Niger Range and Livestock Management Project as well as other herd reconstitution efforts.

Niger was the largest recipient of U.S. food aid between 1973 and 1975. Some 186,000 MTs (valued at $43 million) of food commodities were provided and an additional 21,000 MTs distributed in 1976. The total for the 1973-75 period reached 303,000 MTs. (See Chart 1, Page 8.) These donations helped to meet the serious needs of the population, especially in the urban areas where conditions worsened under the heavy influx of nomadic refugees from neighboring countries. Transporting grain shipments over this huge arid terrain required an enormous effort. U.S. shipments were accelerated somewhat because we arranged to have the grain received in bulk and bagged in Apapa, Nigeria and moved inland. Niger received a total of $9,718,000 from the Special Drought Fund. Of this amount $478,000 was provided in Emergency Assistance, $2,364,000 in Recovery and Rehabilitation projects, $5,976,000 in Medium-Term project aid and $900,000 under the Accelerated Impact Program.

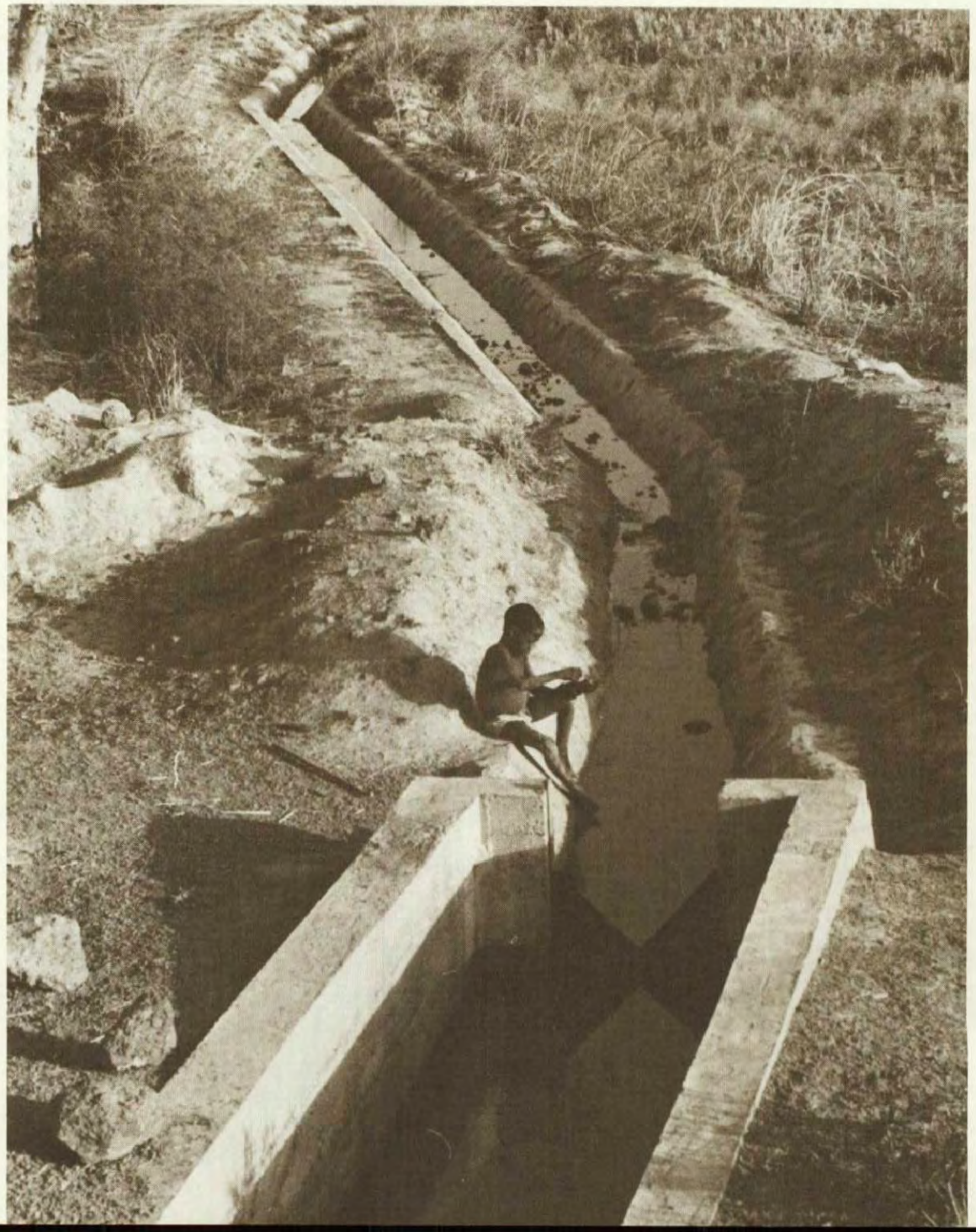
Upper Volta

Animal traction and water resource development are the apparent keys to answering immediate food demands among Upper Volta's population of 6 million which is concentrated mainly in the Mossi Plateau area. AID Recovery and Rehabilitation funds have enabled Voltans to make steady progress on both fronts. About 90 percent of the people of Upper Volta reside in the rural areas where they earn about $70 annually in per capita income. The drought forced people to migrate to the cities. But what is more alarming is the fact that an estimated 200,000 Voltans depart for Togo and the Ivory Coast each year in search of work. The Matourkou Agricultural Training Center near Bobo-Dioulasso is trying to help nomads make the transition from herding to sedentary farming. Agricultural equipment manufacturing schools in Bobo-Dioulasso and Ouagadougou, the capital, are focusing on teaching Voltans how to make plows, harrows and well-digging equipment, all essential to drought recovery efforts. Both activities are assisted by AID. In addition, the Matourkou Agricultural Center is the site for cross-breeding experiments aimed at producing sleeping sickness-resistant oxen that will also be strong enough for animal traction. The project is seeking to develop a sturdy breed based on the union of local Ozaouak cattle with the Ndama stock, which are imported from other parts of Africa. The Matourkou project received $394,000 from AID.

In the eastern section of Upper Volta near Pleila, which lies on the fringe of the Sahelian zone, some $395,000 in AID funds were used to construct three new earthen dams and to repair four others. The dams now control water for animal watering and vegetable crop irrigation. The work was done by local villagers and supervised by a Catholic Relief Services volunteer. The farmers have begun to cultivate tomatoes, rice and onions to help offset the huge deficit in this year's millet crop.

Water resources were improved by the $300,000 grant which AID devoted to digging of 300 village wells throughout the country under the direction of the Peace Corps and the Rural Hydraulics Service.

Another $46,000 went to support the Upper Voltan Ministry of Labor in the training of masons and well diggers. Upper Volta expanded its tree nurseries and established a 100-hectare tree plantation for soil conservation and fuel wood under AID funding. Nearly two million seedlings were provided to the forestry service at a cost of $115,000.



Also, seed multiplication and production efforts aimed at improving millet, rice, sorghum and corn varieties were financed.

Finally, Recovery and Rehabilitation funds were used to establish infrastructure that did not exist before the drought: 17 warehouses with 300 square meters of floor space were built at five different locations; the Dori-Markoye road was repaired; and UNICEF public health teams were kept operational in Upper Volta.

Somewhat less affected by the drought than the rest of the Sahel, Upper Volta was provided only 67,000 MTs of food grain out of a total of 161,000 MTs provided by all donors. (Chart I, Page 8.) Food distribution was easier in Upper Volta because of its relatively small size and did not present serious problems to the U.S. and other donors.

A total of $8,878,000 in Special Drought Funds has been provided with $538,000 for Emergency Assistance, $3,227,000 in Recovery and Rehabilitation funds, $4,851,000 in Medium-Term project assistance, and $263,000 in Accelerated Impact projects.

Senegal

An extremely development-conscious nation, Senegal, which has a population of slightly over five million and a per capita income of $330 annually, had its plans for economic development upset as the drought cut heavily into cereal production in the northern region and into peanut production in the central basin. The crisis has passed but its effects remain and Senegalese officials, with the assistance of the United States and other donors, are trying to complete recovery before another severe drought occurs.

The annual flooding of the Senegal River, which provides water for the rice fields in the river basin, was considerably reduced last year due to the lack of rain throughout the basin. The result was a deficit in the rice crop.

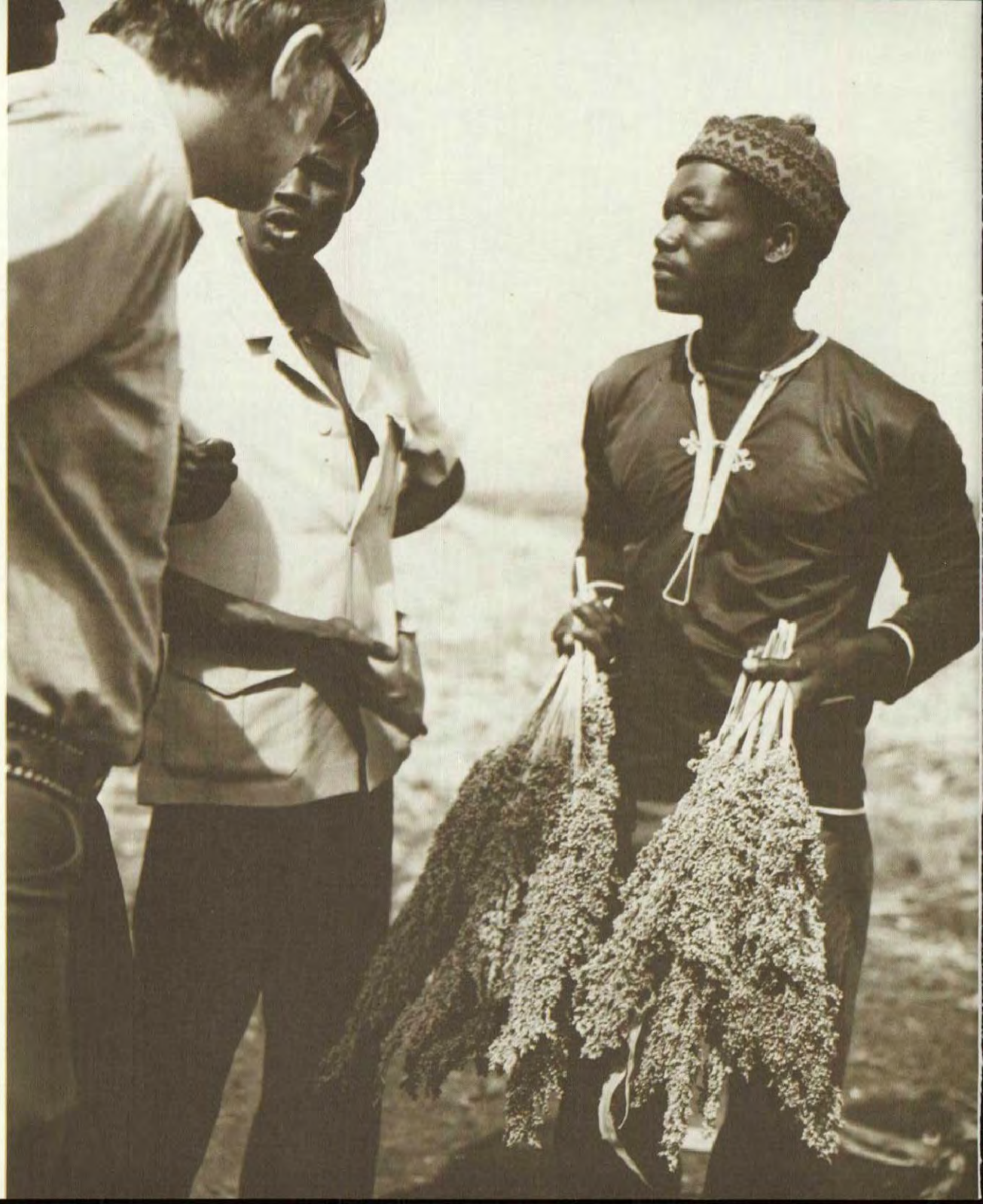
In the important groundnut and dry land cereal (millet) production area, the rains came late and ended abruptly. Subsequently, cereal production declined and there were virtually no peanuts for export. The peanut crop constitutes about 70 percent of the country's agricultural income and is the primary source of foreign exchange income.

AID-supported efforts prevented further deficits last year. For example, a group of energetic young men in the northern village of Ronkh cultivated 400 hectares (988 acres) of tomatoes and rice, which had a yield of 600 tons and 300 tons respectively. An AID-supplied rice thresher and two water pumping stations made it possible. The youths had turned to AID when government funds were not available and their efforts succeeded in feeding their entire village of 1,400 people, with enough produce left over to help relieve deficits in other parts of the country. The $122,000 food project made the village self-sufficient. In the central region, the national cereals project, also funded by AID, has produced new varieties of millet and sorghum and 120 newly-trained extension agents who are teaching local farmers new farming techniques. The cereals project costs $3.8 million. Recovery and Rehabilitation funds in Senegal totaling over $1 million helped hydraulic workers repair or construct 88 wells at livestock and village watering sites throughout Senegal. The funds allowed the Ministry of Rural Development to replace 57 obsolete motors and worn-out pumps. Overgrazing in the delta forests near St. Louis was partially corrected by an AID-assisted reforestation project that covered 150 hectares (370 acres) of drought- stricken

terrain. In addition the OMVS, the Senegal River Basin Authority, utilized $960,000 in AID funds to help support agricultural research which will not only benefit Senegal but Mauritania and Mali.

United States food aid donations to Senegal were smaller than those to other Sahelian states, due largely to the country's compact size, coastal location and fairly well developed transportation network. Few obstacles blocked shipments of grain to distressed areas in the country. Approximately 60,000 MTs of such food aid were provided for a total of 172,000 MTs. (See Chart I, Page 8.)

A total of $16,439,000 in special Drought Funds was provided to Senegal. Of this amount, $3,059,000 was provided in Emergency Assistance, $2,041,000 in Recovery and Rehabilitation, $6,472,000 in Medium-Term project assistance and $357,000 in Accelerated Impact projects. The Medium-Term project assistance includes $4,510,000 for aid provided through the Senegal River Basin Development Authority (OMVS) whose headquarters are located in Dakar, Senegal.



Louga
Linguére
Diourbel
Dakar
Kaolack
Tambacounda
The Gambia
Banjul

Elsewhere in Africa

KENYA

A $1,150,000 Special Drought fund appropriation was provided to Kenya—$1 million for Medium-Term project assistance in FY 1976 & 1977 and $150,000 programmed for accelerated import activities in FY 1977. Of particular importance was a $28,725 study funded by AID to explore the agricultural potential of two marginal and semi-arid land areas as a prelude to water resource development. The study will feature soil surveys and land-use assessments to determine the potential for exploiting other natural resources.

SOMALIA

Somalia received $624,000 worth of Emergency Assistance in FY 1975. Shipments of 25,000 tons of PL-480 Title II food grain valued at $16 million were also made available to Somalia during the drought. The shipments fed an estimated 268,000 nomads in northern relief camps and an additional 10,000 tons of food aid were distributed in resettlement villages. As a result, the camps were dissolved soon after the 1974 rains.

ETHIOPIA

The United States contributed approximately $35 million in food and non-food assistance through the end of 1976 to Ethiopia which was especially hard hit by the drought. Of the $9.8 million in projects, $8 million was used for activities ranging from construction of relief roads, accelerated food production for nomads and the drilling of emergency wells. Some $1.2 million has gone toward the development of the Sidamo pastoral area. This project involved the digging of 10 ponds, 200 kilometers (120 miles) of access roads and other water points. All work will be completed by the end of FY 1977. The importance of road construction and repair cannot be overemphasized in drought relief. In Ethiopia, $4.5 million in AID funds were set to the task of improving some 845 (507 miles) kilometers of roads. It is believed that 900,000 people benefited from the effort.

On-the-farm training of nomads along the Wabe Shebelle River in southern Ethiopia generated 4,000 MTs of grain for the previously deficit area. And a network of emergency pesticide stores was established by trained plant protection agents to reduce crop losses caused by insects. The network served also as a pest warning system and required $1.2 million in funding. Other projects included the training of well-drilling technicians through World Vision International and a program of supply and equipment procurement to assist nomad resettlement activities.

THE GAMBIA

At the height of the drought, the population of this former British colony was just under 500,000. One of the smallest nations in Africa, a flood of refugees from the more severely stricken countries of Mali and Senegal put tremendous pressure on the country's resources. Encouraged by a good harvest during the 1974-75 season, the country has embarked on an ambitious plan to achieve self-sufficiency in food crop production by 1980.

Recovery and Rehabilitation funds were used to finance a government vegetable/onion growing demonstration project. The goal is to promote rural nutrition and provide employment primarily to women. It also sought to strengthen local marketing of produce. Funds were provided also for replacing automatic sluice gates at the Jakhally swamp with an improved manual gate to control the flooding of rice swamps. AID funds concentrated heavily on backing agricultural schemes in the Gambia, but mobile units were set up to support agricultural extension service agents at a cost of $131,000. The funds went toward the purchase of an excavator, motorbikes and hand tools that were turned over to the Department of Community Services for use in seed multiplication and rural development activities.

A total of $693,000 in Special Drought Funds have been provided to the Gambia. Of this total, $18,000 was provided in Emergency Assistance, and $675,000 were in Recovery and Rehabilitation funds.

Evaluation of Projects and Funding

The most recent chapter of the drought in the West African Sahel has been brought to a close. AID projects under the Special Drought Appropriation have been successfully completed or are in their final stages. But, as long as drought continues to menace this poverty-stricken area, there exists the possibility that the international donor community could again be called upon for emergency assistance. This possibility will exist as long as the Sahelian states lack the institutional infrastructure and capital to cope with continuous shifts in the weather and the environment that reflect adversely upon the social and economic life of the people.

Contributions and projects by outside donors, which included extensive AID involvement, had the immediate effects of reducing the number of human deaths and livestock losses. AID assistance sought to consolidate gains made by emergency feeding programs. Medium-term projects were adopted to help provide infrastructure to assist the governments in dealing with present and future emergencies.

Projects using the Special Drought Fund provided by the Congress established infrastructure that never existed in the Sahel, or repaired infrastructure that had deteriorated as a result of the drought and as a result of the low economic condition of the area. For example, roads and bridges constructed in northern Mali and in the area southeast of the capital, Bamako, now allow for the passage of heavy equipment and, more importantly, large transport trucks that will speed development in those areas and carry emergency food should it again become necessary. In Niger, people are learning to diversify their eating habits in order to insure their survival. The Accelerated Rice Project, just north of Niamey, promises to develop a broad strip of land near the Niger River for rice production. And the national cereal project, funded by AID, will reinforce national efforts by Nigeriens to feed themselves.

But the continued low level of development, particularly in Mauritania and Chad, indicates that involvement by the international donor community will continue to be sorely needed. Young and inexperienced national bureaucracies had all they could do to funnel emergency grain shipments to their populations, and assist them in the

return to normal conditions; normal, that is, for the Sahel. U.S. assistance was successful in reducing the death and suffering that resulted from severe food shortages, and AID funds bought time for the Sahel governments to prepare for the next battle with the environment that is certain to come. But more importantly, as a result of the recent rehabilitation effort, the governments have begun to abandon their fatalistic attitudes toward drought and have now come to realize that use of appropriate new technology can help insure survival of their people.

Drought in this region is always menacing and unpredictable. The last drought comparable in severity came in 1914. But the people of the region have now learned that they must and can be prepared for droughts that are extreme. They have now come to realize that they must have minimum storage facilities and a basic supply of grain on hand in cases of crop failure. In the area of livestock development, they know now that water resources must be developed widely to guard against the devastating losses that periodically sweep through the Sahel. Animal health and animal traction for food production are other key concerns. Sahelian officials realize that cattle must be vaccinated and bred to insure a disease-resistant stock.

AID successes in the Sahel through use of the Sahel drought appropriation provided by the Congress have paved the way for support of large scale development activity for the Senegal River, River Niger and the Lake Chad basins. It is hoped that long-term development can indeed "roll back the desert." The concern and involvement of the American people cannot terminate when the Special Drought Funds have been exhausted. The Sahel drought has created a new area of interest for U.S. foreign policy. It has brought to world attention the plight of a people in a large portion of the world and it has challenged the technology and experience of developers. Some of the major ecological, economic and social problems facing the world today are currently being tackled in the Sahel. World response to the drought demonstrated emphatically what can be accomplished if imagination and determination are applied.

To put this new awareness and knowledge into effect, the Sahelian states have created the CILSS, the Permanent Interstate Committee to Fight Drought in the Sahel and the donors and Sahelians have created the *Club des Amis du Sahel* to plan and implement a long-term development program for the region. The goal of this group is to make the region more resistant to droughts in the future. The first meeting of the Club des Amis du Sahel was held in Dakar, Senegal, in March of 1976. It appointed a working group to prepare the strategy and program for this long-term effort. The next meeting of the Club, to review the results of the working group's effort, is scheduled for May 1977 in Ottawa, Canada. In order for the United States to continue to be an active participant in this important world effort toward Africa, the foreign assistance budget now before the Congress requests $200 million for a new Sahel Development Program, of which $50 million is requested for FY 1978. The success achieved using the Sahel drought appropriation and the success anticipated under the Sahel Development Program should go a long way toward making the area resistant to future drought and should form the basis for a permanent long term transformation of the area.

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