

OFDA Annual Report FY 1991



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OFDA ANNUAL REPORT

FY1991

The FY 1991 Annual Report of the Agency for International Development/Office of U.S. Foreign Disaster Assistance was researched, written, and produced by Franca Brilliant, Jan Coffey, Gabrielle Dennis, Faye Henderson, Dennis J. King, Valerie Newsom, and Beverly Youmans of Labat Anderson Incorporated in Arlington, Virginia, under contract number PDC-0000-C-00-8153-00. "New Directions in PMP" was written by Suzanne Burgess of Basic Health Management, Inc.



Photo 1. A Sierra Leonean mother and her child in a displaced persons camp in Guinea

Photo by LeVonne Harrell, AID/FHA/OFDA

Photo 2. The Panama earthquake left huge ground fissures

Photo by Alejandro James, OFDA/Costa Rica

Photo 3. Daily traffic continues on a flooded city street in Cambodia

Photo courtesy of U.S. Committee for Refugees

TABLE OF CONTENTS

Message from the Director	6
Summary of U.S. Foreign Disaster Assistance	8, 9
New Directions in PMP	10
Prior-Year and Non-Declared Disasters	14

FY 1991 DISASTERS

ASIA

Bangladesh Cyclone	18
Cambodia Floods	25
Laos Floods	29
Maldives Storm	31
People's Republic of China Flood	33
Philippines Typhoon	36
Philippines Volcanic Eruption	39
Thailand Accident	46
Other Asia Declared Disasters	48
Afghanistan Earthquake/Floods	
Burma Fire	
Burma Floods	
Indonesia Earthquake	
Malaysia Accident	
Pakistan Earthquake	
People's Republic of China Typhoons	
Sri Lanka Floods	

AFRICA

Angola Displaced Persons	56
Burkina Faso Drought	61
Chad Epidemic	63
Ethiopia Displaced Persons	65
Ethiopia Drought/Civil Strife	67
Madagascar Cyclone	76
Malawi Floods	78
Mozambique Civil Strife/Drought	81
Somalia Civil Strife	85
Sudan Drought/Civil Strife	90
West Africa Civil Strife/Displaced Persons	99
Other Africa Declared Disasters	106
Benin Floods	
Cameroon Food Shortage	
Chad Civil Strife/Drought	
Congo Accident	

Djibouti Displaced Persons	
Ethiopia Explosion	
Guinea-Bissau Displaced Persons	
Madagascar Civil Strife	
Mauritius Cyclone	
Niger Epidemics	
Niger Food Shortage	
Rwanda Displaced Persons	
Swaziland Drought	
Zaire Emergency	

EUROPE & NEAR EAST

Albania Emergency	116
Iraq Displaced Persons	119
Lebanon Civil Strife	129
Other Europe and Near East Declared Disasters	131
Kuwait Emergency	
Romania Floods	
Soviet Union Earthquake	

LATIN AMERICA & THE CARIBBEAN

Costa Rica Earthquake	137
Honduras Floods	140
Panama Earthquake	142
Peru Epidemic	145
Other Latin America Declared Disasters	150
Argentina Volcanic Eruption	
Chile Floods/Mudslides	
Costa Rica Earthquake	
Costa Rica Floods	
Haiti Civil Strife	
Haiti Emergency	
Jamaica Floods	
Panama Floods/Mudslides	
Peru Earthquake	

ACRONYM LIST

U.S. Private Voluntary Organizations (PVOs) and Private Groups

ADRA Adventist Development and Relief Agency
ARC American Red Cross
CARE Cooperation for American Relief Everywhere
CCF Christian Children's Fund
CRS Catholic Relief Services
CWS Church World Service
FHI Food for the Hungry International
HKI Helen Keller International
IRC International Rescue Committee
LWR Lutheran World Relief (U.S.)
MAP Medical Assistance Programs, International
MCI Mercy Corps International
SCF/US Save the Children Federation/U.S.
WVRD World Vision Relief & Development
YMCA Young Men's Christian Association

International Non-Governmental Organizations (NGOs)

CAFOD Catholic Agencies for Overseas Development (U.K.)
SCF/UK Save the Children Fund/U.K.
MSF Medecins sans frontieres (Doctors Without Borders)

International Organizations

EC European Community
FAO U.N. Food and Agriculture Organization
ICRC International Committee of the Red Cross
IDNDR International Decade for Natural Disaster Reduction
IOM International Organization for Migration
LRCS League of Red Cross and Red Crescent Societies
LWF Lutheran World Federation
PAHO Pan American Health Organization
UNDP U.N. Development Program

UNDRO U.N. Office of the Disaster Relief Coordinator
UNHCR U.N. High Commissioner for Refugees
UNICEF U.N. Children's Fund
WCC World Council of Churches
WFP World Food Program
WHO World Health Organization

U.S. Organizations

AFB Air Force Base
A.I.D. Agency for International Development
CDC Centers for Disease Control (U.S. Department of Health & Human Services)
CINCPAC Commander-in-Chief Pacific (DOD)
DART Disaster Assistance Response Team
DOD Department of Defense
FFP Food for Peace Office (A.I.D.)
FFW Food-for-work, aid program
FEWS A.I.D.-sponsored Famine Early Warning System
FY Fiscal year
OFDA Office of U.S. Foreign Disaster Assistance (A.I.D.)
RP Bureau of Refugee Programs (U.S. Department of State)
Southcom U.S. Southern Command (DOD)
USAID A.I.D. overseas Missions
USFS U.S. Forest Service
USG United States Government
USGS U.S. Geological Survey (U.S. Department of the Interior)

Other

DP displaced persons
ORS oral rehydration salts (a sugar-salt combination for diarrheal diseases)
PMP Prevention, Mitigation, and Preparedness
TDY temporary duty (assignment)

MESSAGE FROM THE DIRECTOR

“Prompt United States assistance to alleviate human suffering caused by natural and manmade disasters is an important expression of the humanitarian concern and tradition of the people of the United States. . . [T]he President shall insure that the assistance provided by the United States shall, to the greatest extent possible, reach those most in need. . .”

These few, simple words of United States law, authorized by the Congress, provide the essential mandate of the Office of U.S. Foreign Disaster Assistance. The pages that follow report on our efforts in 1991 to meet this mandate from the American people.

The social, political, and ideological tumult that shook the world in 1991—the breakup of the Soviet Union, the Gulf War, multiple crises in the Horn of Africa—swept OFDA as well. OFDA’s 45 staff and advisors responded to a near-record number of disasters, from the cataclysmic Mt. Pinatubo eruption, to the multiple humanitarian crises following the breakup of the Mengistu dictatorship in Ethiopia, to the massive Kurdish relief effort.

The world’s efforts to reach a stable new order achieved real successes in 1991. The reconfiguration of the Soviet Union and much of Central Europe, the transitional control over nuclear weapons stockpiles, and the resolution of several East-West regional conflicts were attained.

But this reordering in the international system also spawned regional instability and humanitarian crises, causing widespread human suffering in places like Kurdistan. In fact, the Kurdish relief effort exemplifies the milieu in which humanitarian relief operations must often operate in the 1990s.

OFDA employees and other relief workers increasingly focus on reaching disaster victims in environments of conflict. In addition to traditional skills like measuring child malnutrition or shipping plastic sheeting for emergency shelter, emergency specialists are grappling with demining assessments, the needs of demobilized soldiers, negotiations with armed groups for the passage of needed food supplies, and methods to bring available military resources into the disaster relief effort.

The summaries of the Kurdish, Somali, Ethiopian, and numerous other disaster responses on the following pages describe this modern—and dangerous—environment. These summaries also describe the creative and courageous response of the women and men who attempt to deliver disaster assistance in these circumstances.

Two other developments in 1991 are of particular importance as we try to improve our ability to assist the children, men, and women who are suffering because of natural or man-made disasters. The first is significant reform of the U.N. system for managing disaster response. The second is further progress in OFDA’s development of prevention, mitigation, and preparedness programs.

At the United Nations, member states—with strong U.S. backing—created a new Department of Humanitarian Affairs to coordinate and speed up the response of U.N. agencies to humanitarian crises. The new unit is intended to lead an integrated response of all U.N. agencies when a disaster strikes. OFDA is working closely with the new Undersecretary General for Humanitarian Affairs to ensure that the world can increasingly rely on rapid, effective U.N. leadership in the disaster assistance field—including conflictive crises.

At OFDA, we continued to increase our investment in the prevention, mitigation, and preparedness activities—before disaster strikes—that are critical to saving lives and lessening human suffering when disasters do occur.



Temporary shelter being constructed with OFDA plastic sheeting in Costa Rica

Photo by Alejandro James, OFDA/Costa Rica

The staff completed a major study in 1991 of the world's most disaster-prone countries and an analysis of those investments—for example, development of drought resistant seeds; zoning in landslide-prone areas; market-related insurance incentives to encourage hurricane- or earthquake-resistant building techniques—that pay the biggest dividends in lives saved and economic progress preserved.

One final note: anyone reading OFDA's 1991 report cannot fail to be impressed with the ubiquitous references to the many American private voluntary organizations—"PVOs" in the Washington jargon—active in the disaster assistance field. As the new director of the Office of U.S. Foreign Disaster Assistance, I am repeatedly amazed at the courage, resourcefulness and dedication of these "PVOs" and their workers. I believe I speak for the entire OFDA staff in saying that we could ask for no better partners in delivering American humanitarian assistance to disaster victims around the globe.

James R. Kunder

Director

Office of U.S. Foreign Disaster Assistance



Kurdish refugees at Kairi Masi way station, on their way down from the mountains

Photo by Ronald Libby, OFDA/Forest Service

U.S. FOREIGN DISASTER ASSISTANCE SUMMARY BY FISCAL YEAR

FY	NO. OF NEW DIS- ASTERS	NO. OF COUNTRIES	NO. KILLED	NO. AFFECTED	DISASTER RESPONSE IDA FUNDS	OTHER USG ASSISTANCE
1964	29	23	3,112	3,992,241	\$2,928,499	\$3,305,661
1965	46	32	46,943	14,504,499	\$2,438,872	\$18,722,703
1966	46	35	7,044	4,672,245	\$652,458	\$1,038,740
1967	57	40	17,441	106,415,973	\$3,743,051	\$8,567,586
1968	48	36	3,844	5,521,382	\$1,355,888	\$9,509,891
1969	36	32	1,018,534	31,311,680	\$4,446,757	\$24,822,542
1970	50	36	72,915	8,518,309	\$6,263,804	\$11,859,373
1971	51	40	522,183	74,289,081	\$15,822,511	\$21,930,000
1972	29	27	115,381	13,435,589	\$1,452,783	\$210,289,507
1973	30	27	111,619	217,776,063	\$14,062,254	\$158,631,843*
1974	20	19	101,608	12,819,240	\$2,542,979	\$31,827,590*
1975	25	23	61,233	46,310,336	\$7,006,385	\$121,265,640*
1976	25	23	78,262	38,375,279	\$12,056,098	\$123,410,000*
TQ	6	5	6,589	708,700	\$5,479,245	\$277,108
1977	25	22	8,568	7,932,836	\$21,445,529	\$13,394,451
1978	33	27	28,269	52,134,391	\$24,452,367	\$1,720,101
1979	41	33	34,514	11,049,072	\$24,548,448	\$24,559,600
1980	32	27	1,635	7,760,985	\$12,898,071	\$68,312,206*
1981	22	19	11,527	4,607,227	\$6,613,724	\$51,752,000*
1982	35	29	43,352	40,463,621	\$10,742,757	\$51,040,088
1983	45	36	4,775	43,980,670	\$8,016,403	\$83,219,912*
1984	47	39	3,463	34,233,123	\$15,097,749	\$51,378,416*
1985	47	39	577,388	30,474,549	\$19,863,848	\$105,002,195*
1986	47	38	26,311	8,313,429	\$9,480,105	\$79,218,789*
1987	56	45	94,171	48,585,076	\$24,991,031	\$132,666,233*
1988	66	46	379,538	137,355,138	\$20,511,211	\$76,463,891*
1989	58	42	40,693	127,521,207	\$22,926,142	\$127,303,347*
1990	53	44	81,754	52,158,794	\$16,057,244	\$147,604,596*
1991	65	48	190,047	393,294,149	\$26,451,018	\$710,404,010*
TOTAL		1,170	3,692,713	1,578,512,884	\$344,347,231	\$2,488,497,797

*Includes funds from other A.I.D. accounts and/or supplemental appropriations administered by OFDA

NEW DIRECTIONS IN PMP

Disaster Prevention, Mitigation, and Preparedness (PMP)

When a disaster strikes a developing country, disaster assistance organizations, including OFDA, focus on rescuing and treating survivors and restoring normal services as quickly as possible. OFDA also looks beyond the actual disaster and assists countries by designing and implementing measures for the prevention, mitigation, and preparedness of future disasters. Disasters will always occur, but by performing PMP activities, lives and economic and social assets are saved, and the cost for disaster recovery and rehabilitation is lowered.

Disaster *Prevention* activities are those "taken to prevent a natural phenomenon or potential hazard from having harmful effects on either persons or economic assets." Some prevention activities are safely destroying outdated hazardous chemicals or building dams or berms to prevent flooding.

Disaster *Mitigation* "concentrates on reducing the harmful effects of a disaster." While accepting that disasters will occur, mitigation projects, like installing hurricane straps to reduce wind damage to roofs, "limit their effects on human suffering and economic assets."

Disaster *Preparedness* "aims to limit the impact of a disaster by structuring the response and providing quick and effective actions after the disaster." By training their citizens and setting up early warning systems, developing countries use preparedness activities to reduce loss of lives. OFDA provides preparedness activities geared for both the pre-disaster and post-disaster phases.

In the past, PMP was a component of OFDA's work, but now OFDA has placed greater emphasis on PMP, especially mitigation, as a means of enhancing A.I.D. development activities.

Rationale

The rationale behind this new emphasis (and the creation of a new PMP division within OFDA) is that without PMP measures in place, disasters will affect more lives, and years of development efforts and investment will be lost in minutes. Because the number and severity of disasters are rising each year, OFDA is

assisting with an increasing number of disasters. People in developing countries suffer the greatest impacts from disasters due to the often unsound construction and unsafe location of their homes, key public facilities, and infrastructural "lifelines", as well as the degradation of the environment.

Through PMP measures, such as early warning systems and public awareness projects, death tolls are reduced when a catastrophe strikes. By implementing PMP activities, such as structural and non-structural mitigation measures, the effects of earthquakes, cyclonic storms, and other natural disasters can be alleviated. Since OFDA response is targeted on the most disaster-prone developing countries, PMP activities are cost-effective because lives are saved and development efforts are protected.

OFDA has, in fact, supported PMP initiatives since 1964. Several illustrative examples (in the box on the following page) of OFDA's projects are provided. They are:

- Peru—La Punta Tsunami Study
- Latin America and Caribbean (LAC) Regional—OAS Risk Natural Hazards Project
- Global Agro-Climatic Impact Assessment
- LAC Disaster Management Training

History

Based on lessons learned during its early experience, several activities and changes led to the development of OFDA's PMP Strategy:

- Increasing attention began to be placed on early warning systems, particularly following the Guatemala earthquake of 1976 and droughts in Africa and Haiti.
- New approaches to disaster mitigation in the housing sector also arose in the late 1970s.
- Beginning in the 1980s, a new emphasis was placed on a field-based approach, and the need to tailor programs to better meet the needs of the host country governments and professionals, particularly in preparedness training.

PRIOR-YEAR AND NON-DECLARED DISASTERS

In FY 1991, OFDA obligated a total of \$1,940,168 to continue funding relief and rehabilitation activities begun in prior fiscal years or to replace commodities drawn down from OFDA stockpiles for prior-year emergencies. Included also in this total are some Africa projects that were not country specific and were not declared disasters, as well as a contribution of \$110,000 from a Congressionally mandated orphan earmark for a project in Haiti. (Other contributions from the orphan earmark are described in "Angola Displaced Persons" and "Ethiopia Drought/Civil Strife" in this volume.) The Federal Emergency Management Agency (FEMA) will reimburse OFDA a total of \$994,316 for items used from the OFDA stockpiles for cyclones in Truk, Palau, Yap, and Guam, and Hurricane Hugo in St. Croix. Other USG offices also provided continuing assistance in some disasters. All funding obligations for prior-year or non-declared disasters are summarized below.

**Africa Regional - Civil Strife
(Non-Declared FY 1991)**

OFDA provided a grant to Air Serv for the overhaul of two OFDA-owned Twin Otter aircraft used for the relief effort in Sudan and Ethiopia (\$215,000).

TOTAL \$215,000

**Africa Regional - Insect Infestation
(Non-Declared FY 1989)**

Funds were provided to Litton Aero Products for additional equipment (\$10,000).

TOTAL \$10,000

Caribbean - Hurricane Hugo (FY 1989)

To replace stockpile items used in response to Hurricane Hugo, OFDA procured 16 3,000-gallon water tanks (\$31,392) and paid shipment costs of the tanks, 500 pairs of gloves, and five individual support kits (\$1,826).

TOTAL \$33,218

Cote d'Ivoire - Displaced Persons (FY 1990)

In response to the continuing emergency caused by the influx of Liberian refugees, RP provided \$371,805

through Africare for seeds and tools for refugees in Cote d'Ivoire. (see "West Africa - Civil Strife/ Displaced Persons" in this volume.)

Total Other USG \$371,805

TOTAL \$371,805

FEMA Reimbursement (FY 1991)

OFDA replaced in the Guam and Panama stockpiles, the following items used by the FEMA after cyclones in Truk, Palau, Yap, and Guam (FY 1991) and Hurricane Hugo in St. Croix (FY 1989): plastic sheeting, water containers and tanks, blankets, tents, and chain saws. The procurement and shipping costs (\$994,316) were to be reimbursed by FEMA.

TOTAL \$0.0

Guinea - Displaced Persons (FY 1990)

Continuing assistance to Guinea, in response to the needs of refugees from Liberia and Sierra Leone, RP provided \$63,528 through IRC to finance education services. (see "West Africa - Civil Strife/Displaced Persons" in this volume.)

Total Other USG \$63,528

TOTAL \$63,528

Haiti - Orphan Project (Non-Declared FY 1991)

OFDA provided \$110,000 to USAID/Haiti to fund the construction of an orphanage to house 50 children in Boucan Carre.

TOTAL \$110,000

Iran - Earthquake (FY 1990)

OFDA provided a grant to the ARC to cover remaining airlift costs (\$54,625), procured 40 3,000-gallon water tanks (\$78,480), and shipped the following replacement items to the Leghorn stockpile: 439 tents, four support

kits, 1,000 hard hats, 1,000 pairs of gloves, 10,000 masks, 160 water jugs, and 2,940 blankets (\$10,000).

TOTAL **\$143,105**

Jamaica - Hurricane (FY 1988)

Shipping costs to replace 3,960 five-gallon water containers to the Panama stockpile were paid out of FY 1991 accounts (\$1,138).

TOTAL **\$1,138**

Jordan - Displaced Persons (FY 1990)

OFDA funded shipping costs to replace 1,000 tents, eight tent repair kits, and 16,440 wool blankets to the Leghorn stockpile (\$30,000).

TOTAL **\$30,000**

Mexico - Floods (FY 1990)

For this disaster, declared in late FY 1990, the U.S. Ambassador's Authority was used for the purchase of household items for the disaster victims (\$25,000).

TOTAL **\$25,000**

Panama - Emergency (FY 1990)

OFDA paid shipping costs to replace 100 rolls of plastic sheeting (\$2,516), 1,000 blankets (\$1,200), and 250 pairs of gloves (\$62) to the Panama stockpile.

TOTAL **\$3,778**

Philippines - Earthquake (FY 1990)

OFDA paid shipping costs to replace 427 rolls of plastic sheeting, 6100 blankets, four support kits, 500 hard hats, 500 pairs of gloves, and 5,000 face masks to the Guam stockpile (\$18,700), as well as additional shipping costs for 102 rolls of plastic sheeting from the manufacturer

to Guam (\$3,985) and replacement and freight charges for 380 wool blankets (\$1,739).

TOTAL **\$24,424**

Sierra Leone - Displaced Persons (FY 1990)

Continuing assistance to Sierra Leone for the displaced persons emergency created by civil war in neighboring Liberia and in Sierra Leone itself, OFDA provided a total of \$1,294,982 in commodities and services in FY 1991. This included a two-person assessment team sent to Sierra Leone and Guinea (\$11,531 funded from disaster travel and program accounts). (see "West Africa - Civil Strife/Displaced Persons" for details of the USG contribution.)

TOTAL **\$1,294,982**

Somalia - Civil Strife (FY 1990)

OFDA funded the services of a contractor to coordinate PVO and donor responses (\$24,357). This disaster was redeclared on March 25, 1991 (see "Somalia - Civil Strife" under "FY 1991 Declared Disasters".)

TOTAL **\$24,357**

Soviet Union - Earthquake (FY 1989)

To replace stockpile items used in this disaster, OFDA purchased four 3,000-gallon water tanks (\$7,848) and paid shipping costs for 4,863 five-gallon water containers (\$2,000).

TOTAL **\$9,848**

Sri Lanka - Civil Strife (FY 1990)

OFDA funded the services of a contractor to assess continuing needs in Sri Lanka as a result of ongoing civil strife (\$15,318).

TOTAL **\$15,318**

FY 1991 Declared Disasters

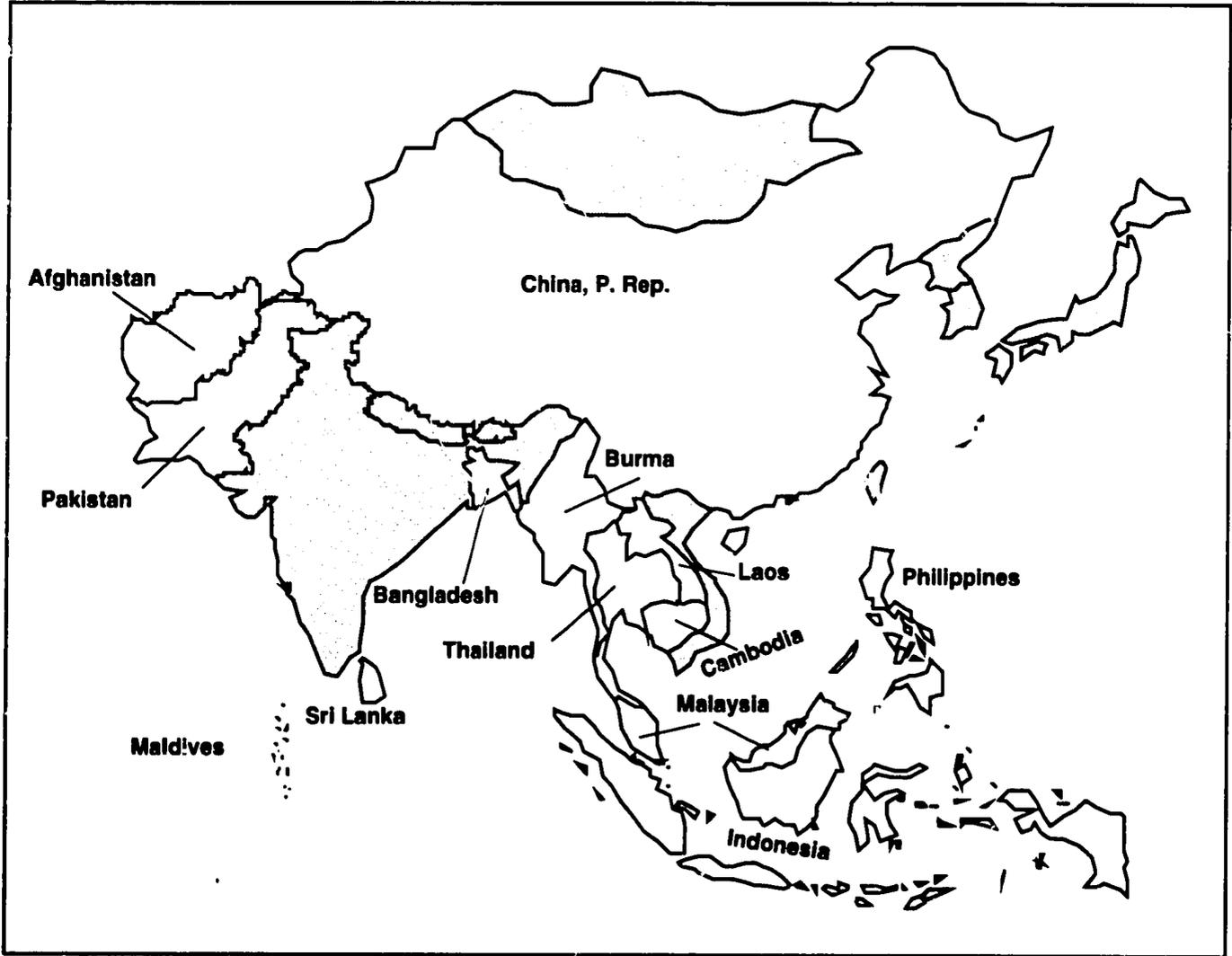
The case reports in this volume cover the period of the USG's fiscal year, Oct. 1, 1990, through Sept. 30, 1991. During FY 1991, OFDA responded to 62 new "declared" disasters—i.e., those in which the Chief of the U.S. Diplomatic Mission in an affected country determined that a disaster existed which warranted a U.S. response.

Many of the disasters required a complex mix of financial and staff resources. For those disasters which required considerably less OFDA resources, usually those declarations which were under \$200,000, a summary is included at the end of each regional section.

In the disaster case reports, the listings of assistance by the U.S. Voluntary Agencies and the International Community are compiled from reports submitted voluntarily to OFDA. It is not always possible to verify the accuracy of these reports nor the value of in-kind contributions. Accordingly, the total dollar values indicated should be taken as representative figures.

Asia

Asia and the Pacific



BANGLADESH - Cyclone

Date: April 30, 1991

Location: Islands and districts along the southeastern coastal area of Bangladesh, including Chittagong, Cox's Bazar, Sandwip, Kutubdia, and Moheshkali

No. Dead: 138,866 (BICG figures)

No. Affected: 13,400,000; over 138,849 injured

Total USG Assistance: \$27,856,202

The Disaster

Bangladesh has been the scene of some of the worst cyclone disasters ever recorded. Its generally flat terrain, high population density, and location at the head of the Bay of Bengal make it especially vulnerable to severe storms that often form in the Bay during the pre- and post-monsoon seasons. Historically, the greatest danger has been from the accompanying storm surges that inundate coastal areas and offshore islands, especially when they coincide with high tides. The deadliest cyclone to hit Bangladesh in modern times was on Nov. 12, 1970, which, with a storm surge of six to eight meters, claimed the lives of 300,000 to one million people.

The cyclone that swept across the southeastern coast of Bangladesh on April 30, 1991, did not reach the record set by the 1970 event for destruction of human life. Nevertheless, it will go down in the annals of world catastrophes as one of the worst rapid onset disasters of the late twentieth century. Cyclone Marian formed in the Bay over several days and crossed the Chittagong - Cox's Bazar coast near the Meghna estuary at about midnight, lashing the area with winds up to 210 km. per hour, gusting to 235 km. per hour. A storm surge of over six meters submerged coastal areas and small offshore islands (chars), causing massive loss of life and destruction.

The death toll mounted steadily as sea waters receded, uncovering more bodies. As of May 21, the official figure had reached 138,866, with the number of injured listed at 138,849. An FAO/WFP survey in June reported that about 13.4 million people lived in the affected

areas. Of those, some 1.255 million were in the most severely affected upazilas and Chittagong City, and another 1.835 million lived in badly affected areas in the immediate coastal belt. Four districts - Chittagong, Cox's Bazar, Noakhali, and Bhola - were the most heavily damaged. Nearly 80,000 people died in Chittagong, where the country's main port was wrecked and some 20 navy and cargo vessels sank. On Sandwip Island, in Chittagong District, some 35,000 people perished, 60% to 70% of houses were washed away, and 70% of crops were lost. Heavy loss of life was also reported in Cox's Bazar District. Government sources reported that from a pre-cyclone population of 110,000 on Kutubdia, an offshore island in Cox's Bazar District, 20,000 people died and 2,000 were missing. An aerial survey by USAID staff revealed that 80% to 90% of all structures were destroyed and all livestock lost on Kutubdia. Entire populations were wiped out on some of the smaller islands.

Many of the storm's survivors remained marooned without shelter or in overcrowded temporary shelters for days after the storm. Continuing rain and rough seas hampered rescue and relief efforts. The lack of a safe water supply and proper sanitation caused a dramatic rise in the incidence of diarrhea and dysentery, with as many as 300,000 possible diarrheal cases and up to 2,000 associated deaths during the first three weeks after the cyclone. A shortage of oral rehydration salts (ORS) and materials for local production delayed treatment of early cases.

Damage was widespread and severe in all sectors. According to government estimates, 780,000 homes were destroyed, and 9,300 schools and 655 health centers were damaged or destroyed. Power, water, and communications lines were cut to the affected areas, and train, road, and air service to Chittagong was disrupted. More than 190 km. of coastal embankments were destroyed and 940 km. were damaged. Numerous tubewells in the stricken area were damaged or contaminated. In many areas, surface water was salinized, including ponds used for bathing and cleaning. Almost all industries in the port area of Chittagong suffered heavy damage. The port itself was left in shambles, with numerous beachings and sinkings of vessels, damage to container facilities, and the loss of channel buoys and markers.

The agricultural sector sustained serious disruptions. The FAO/WFP survey reported that 247,000 tons of cereal crops, and 35,000 tons of vegetables, tubers, and other crops were lost. Although net "toro" rice crop losses from the ongoing harvest represented only about 1% of national production, prospects for the main "aman" crop (June - October) were less favorable because of the cyclone's damage to coastal embankments, high salinity in some areas, and a shortage of tools, seeds, and fertilizers. According to official estimates, 224,000 head of cattle, 218,000 goats, and 2.4 million head of poultry perished in the storm. Surviving livestock were in poor health and lacked sufficient feed. The massive loss of cattle represented a serious constraint to the cultivation of crops, since cattle are almost the only source of draught power.

Losses in the fisheries sector were equally calamitous, with extensive damage to 31,000 ha. of shrimp farms as well as to fish processing plants, vessels, and stocks. The forestry sector suffered considerable losses of fuel wood and timber, as well as damage to coastal mangrove plantations which increased the possibility of serious coastal erosion in the future. Estimated production losses totaled 15 million cubic feet of softwood and 3.3 million cubic feet of hardwood. The loss of income generating assets in all sectors (e.g., tools, boats, nets) and of agricultural employment were expected to be serious obstacles to the return to a prior means of livelihood for the affected population. The cost of reconstruction and rehabilitation was put at \$1.78 billion by a U.N. task force that investigated the cyclone's impact.

Action Taken by the Government of Bangladesh (BDG)

The Bangladesh Red Crescent's (BRC) Cyclone Preparedness Program was credited with saving many lives by issuing cyclone warnings and evacuating 350,000 people to storm shelters. NGOs and press corps members who visited the area after the storm reported that casualties were significantly lower in areas where people made use of existing cyclone shelters. The number of shelters was not adequate, however, for the number of people at risk. Many of the BRC volunteers in the program lost their own homes and possessions as well as some of the equipment essential to their trade, such as megaphones, signal lights, and transistor radios.

The early warning system for the country was established in the 1970s when a satellite ground station was put in place in Dhaka by the Bangladesh institution, the Space Research and Remote Sensing Organization. In 1978, OFDA provided funds to upgrade the system to Low Resolution Picture Transmission capability. Two years later, OFDA funded a further upgrade to High Resolution Picture Transmission capability. OFDA funding for this project, implemented by NASA, amounted to \$749,000. USAID has continued to provide financial assistance for this activity for a total of over \$6 million.

On April 30, Prime Minister Begum Kalida Zia flew over the devastated area and promptly issued an appeal for international assistance. An emergency committee headed by the Prime Minister was appointed, and a Prime Minister's Relief Fund was established. The Ministry of Relief and Rehabilitation was responsible for relief operations which were carried out from two main zones - Chittagong and Barisal. The External Relations Division (ERD) of the Ministry of Finance was designated as the contact point for international donors and assumed an overall coordinating role reinforced by interdepartmental links. The ERD Secretary convened a meeting of representatives of embassies and international organizations on May 7 to present an estimate of aid requirements. Local coordination cells comprising Bangladesh army units, the U.S. Task Force (see "Assistance Provided by the U.S. Government"), district administrators, and NGOs operated after May 18 to improve distribution of relief supplies and services. The BDG had allocated \$300 - \$400 million from its own resources as of July 16 for relief and rehabilitation.

The BDG's priorities, in the immediate aftermath of the storm, were providing victims access to clean water and food, and restoring communications to urban and rural areas. Military and civilian teams, under army coordination, were deployed to deliver food, clothing, and other relief items from government stocks. Food supplies were available in sufficient quantity in Bangladesh, the main causes of shortages being delivery problems and the loss of home stocks. Food and other essentials were airdropped or delivered by boat, but relief operations were initially hampered by a shortage of helicopters and speed boats to reach remote areas, and by continuing rain and rough seas. Flooding and

tornadoes in other areas of the country added to the difficulty of the BDG's response. As of May 13, the BDG had distributed 8,775 MT of rice, 5,100 MT of wheat, 2.7 million water purification tablets (WPT), and 4.7 million packets of ORS to cyclone victims. With U.S. military assistance, air and sea lifts were reaching all islands by May 20. Some 1,348 Bangladesh medical teams also were deployed to the stricken area to treat the sick and injured. The municipal Expanded Program of Immunization (EPI) began a measles campaign in Gazipur, Chittagong, and Cox's Bazar to forestall an epidemic.

The BDG quickly began the task of restoring vital services. By May 2, train, air, and road service to Chittagong had been restored. The government engineering bureau initiated a road rehabilitation program to reestablish accessibility to settlements cut off by the storm. By May 8, the Chittagong port was open to vessels of limited draft (seven meters instead of the normal eight and one half). Full recovery of the port, however, was expected to take as long as a year. With the help of UNICEF, the BDG Department of Public Health Engineering sank new tubewells and repaired existing ones, providing near universal access to tubewell water for all the affected population by May 20. By late May, international phone service and a trunkline between Dhaka and Chittagong had been restored, ferry service from Chittagong to offshore islands had resumed, and most industries in the port area had returned to at least limited production. Also, as an essential part of recovery, the BDG began a food-for-work program, initiated by WFP and executed by the Bangladesh Water Development Board, to repair and reconstruct embankments. The repair of protective embankments encouraged people who had fled offshore islands to return home. Despite a shortage of building resources in some areas, considerable repair and rebuilding of homes and shops got underway within weeks of the disaster. Only the very destitute remained in temporary shelters by the end of May.

Local NGOs also played a vital role in disaster relief. The BRC mobilized about 30,000 personnel and operated in all affected areas, providing food, shelter materials, WPTs, and ORS packets. The BRC targeted assistance to 300,000 people in 100 relief centers for 30 days. Bangladesh Rural Advancement Committee teams also provided food and relief goods and committed

about \$300,000 in cash and kind. The Christian Commission for Development in Bangladesh (CCDB) sent a survey team and provided food, clothing, WPTs, and other relief supplies. Rangpur Dinajpur Rural Service (RDRS), an NGO funded by international church donors, gave \$380,000, distributed 20 tons of local supplies, and delivered 180 tons of relief supplies that arrived on four chartered flights.

Assistance Provided by the U.S. Government

U.S. Ambassador William B. Milam issued a disaster declaration on April 30, releasing \$25,000 under his Disaster Assistance Authority to the Prime Minister's Relief Fund. Five USAID-funded NGOs dispatched staff to do a rapid assessment for USAID/Bangladesh. Ambassador Milam toured the Chittagong area on May 1.

USAID/Bangladesh had delivered 5,500 lbs. of DOD medical supplies, worth about \$2 million, to the Health Ministry the day before the cyclone struck. Additionally, 5.9 million sachets of ORS remaining from the 1988 flood response had been donated to UNICEF and other organizations three weeks earlier to combat diarrheal diseases, including cholera outbreaks. A USAID-sponsored project fielded surveillance teams to determine the prevalence of diarrheal disease.

Strongly supporting the BDG's priority to restore safe water supplies, USAID requested that OFDA provide an initial grant of \$100,000 to enable NGOs/PVOs to locally purchase water purifying agents (bleach and alum.), ORS, and other relief items. The remaining USAID/Bangladesh stocks of WPTs, worth \$14,000, were disbursed to local governments and NGOs/PVOs. The International Center for Diarrheal Disease Research in Bangladesh increased its domestic production of ORS with funding from USAID to conduct 24-hour shifts. While Bangladesh does not produce WPTs, the country produces enough ORS to meet its needs under normal circumstances.

Subsequently, OFDA provided a total of \$4,025,452 in USAID/Bangladesh allotments to be used for grants to NGOs/PVOs for the provision of ORS, food, water purifying agents, health education, tubewell repair, emergency shelter materials, and other relief supplies and services. Grants were provided to CARE, SCF/US,

WVRD, the Asia Foundation, Pathfinder, HKI, and ICDDR. A portion of the funds (\$7,823) was used by USAID to purchase ORS packets from Pakistan. The health and nutritional surveillance component of the HKI project included frequent surveys of the nutritional status of cyclone victims, prices, and wages over the following few weeks to guide continuing interventions. Additionally, OFDA purchased four million WPTs from a manufacturer in Switzerland at a cost of \$512,000.

When the cyclone hit, a contingent of soldiers from the U.S. Army Corps of Engineers in Bangladesh was deployed to Chittagong to help rehabilitate the airport. On May 10, a DOD DC-5 aircraft arrived in Bangladesh from Saudi Arabia laden with food and medical supplies. On the same day, a DOD C-141 transported over 20 MT of medicine, clothing, and hand tools to Bangladesh from DOD stocks in Okinawa. Transport costs for the two airlifts came to \$500,000, and the commodities were valued at over \$2.5 million.

On May 13, a major DOD response got underway when a DOD transport plane arrived in Dhaka from Okinawa carrying five Army UH-60 Blackhawk helicopters, crews, military air traffic controllers, construction workers, and an environmental preventive medicine unit. This was followed by the arrival of a disaster relief force of nearly 8,000 military personnel diverted to Bangladesh while returning to the United States from the Persian Gulf. The 4,600 U.S. marines and 2,900 sailors who arrived May 15 aboard seven ships of a Navy amphibious group assisted with ferrying food and clothing by helicopter to the cyclone victims in inaccessible areas, and with water purification. The amphibious vessels also carried 28 helicopters and 10 landing craft that were used in the relief effort.

In carrying out "Operation Sea Angel," U.S. military C-130 flights transported personnel and supplies from Dhaka to Chittagong, where a support base had been established. As of June 8, helicopters, C-130s, and water craft had carried a total of 5,691 tons of relief supplies to about 1.7 million people. Relief items included water, food, plastic sheeting for shelter, water containers, storm lamps, cooking fuel, and preventive medicine. Six teams with communications, medical, and engineering expertise completed assessments in the hardest-hit areas, and military engineers constructed warehouses on Sandwip and Kutubdia, and repaired roads leading to

relief centers. Six water purification units and teams operated at Sandwip, Kutubdia, and Chittagong. The USS St. Louis arrived May 29 with 28 more water purification units and smaller landing craft. The preventive medicine unit, working with the local medical staff, set up a field laboratory and epidemiological surveillance center on Sandwip. The amphibious forces departed from the Bay of Bengal on May 29, and all other elements of the Joint Task Force had left by June 15. The activities of "Operation Sea Angel" were fully integrated into the BDG relief operation. Costs incurred by "Operation Sea Angel" were covered by Presidential authority (Section 506 A) which allows for the draw-down of articles and services from DOD stocks for disaster relief and rehabilitation. Additionally, DOD provided excess equipment from U.S. Army and U.S. Navy stocks, including radios, trucks, landing craft, and spare parts. The total draw-down amounted to \$14.3 million.

The USG funds a \$130 million annual program in development assistance in Bangladesh that has significantly enhanced disaster preparedness in the areas of health, hygiene, and food security. This includes a large P.L. 480 program from which up to 55,000 MT of wheat consigned to CARE was authorized for release for emergency feeding. CARE finally used 9,850 MT of the amount authorized; this contribution was valued at \$1,132,750 for the wheat, and \$738,750 for transport.

Mrs. Marilyn Tucker Quayle, chairman of A.I.D.'s International Disaster Advisory Committee, accompanied by OFDA Director Andrew Natsios, Deputy Assistant Administrator for the A.I.D. Asia Bureau George Laudato, and A.I.D./Bangladesh Desk Officer David Frederick, visited Bangladesh on May 21-23 to review the relief effort. They met with Prime Minister Khalida Zia, other BDG officials and relief personnel, and with U.S. military personnel.

To assist the rehabilitation effort, the A.I.D. Asia Bureau announced the provision of \$2 million above current FY 1991 funding to be used for rural electrification projects.

Summary of USG Assistance

Ambassador's Authority	\$25,000
Initial grants to PVOs	\$100,000
Mission allotments for grants	\$4,025,452
Purchase of WPTs.....	\$512,000
Travel costs of Mrs. Quayle's team	\$8,250
Medical supplies in-country (DOD).....	\$2,000,000
Airlifts of relief supplies and commodities (DOD).....	\$3,000,000
Value of "Operation Sea Angel" activities and DOD equipment (DOD)	\$14,300,000
Water purification tablets (USAID).....	\$ 14,000
Funding for rural electrification (Asia Bureau)	\$2,000,000
Value of 9,850 MT of P.L. 480 wheat (includes transport) (FFP).....	\$1,871,500
<i>Total OFDA</i>	<i>\$4,670,702</i>
<i>Total FFP</i>	<i>\$1,871,500</i>
<i>Total DOD</i>	<i>\$19,300,000</i>
<i>Total Other USG</i>	<i>\$2,014,000</i>
TOTAL	\$27,856,202

Assistance Provided by U.S. Voluntary Organizations

ADRA - established a feeding program for 20,000 cyclone victims, and had a medical team in Chittagong.

American Express Foundation - approved \$100,000 to provide grants (\$25,000 each) to International Child Health Foundation for ICDDR, ARC, the Prime Minister's Relief Fund, and the American Express employees who lost their homes.

ARC - donated \$585,000 for relief and planned to contribute a further \$100,000 for rehabilitation activities.

AmeriCares - airlifted 30.8 MT of relief supplies with an estimated value of at least \$300,000.

AMURTEL - sent a medical team.

CARE - had 320 staff people working on the relief effort distributing survival kits, food, plastic sheeting, blankets, WPTs, and ORS to 200,000 people. CARE had 24 medical teams staffing dispensaries in the disaster area and assisted the BDG in clearing relief supplies as they arrived in Dhaka. To assist the rehabilitation effort, CARE procured salinity-resistant rice and vegetable seeds and helped to restore fish and shrimp production. CARE received a total of about \$3,000,000 (exclusive of the USG grant), as well as in-kind contributions from several donors for its relief and rehabilitation work in Bangladesh.

CWS - sent \$5,000 and issued an appeal.

FHI - provided \$10,000, personnel, and vehicles.

LWR - committed \$50,000 to the Lutheran World Federation for cyclone relief.

Mennonite Central Committee - supplied vegetable seeds.

SCF/US - provided food, shelter, and medical assistance in Chittagong and Cox's Bazar at a cost of \$238,357.

World Concern - provided supplementary feeding for 1,000 families, and financial assistance to 200 families to build cyclone-resistant houses.

World Relief Corporation - sent an initial \$10,000.

WVRD - committed \$2,500,000 to provide food, clothing, medical supplies, tents, WPTs, and blankets to 25,000 families in Cox's Bazar and Chittagong. WVRD also planned rehabilitation assistance.

Assistance Provided by the International Community

International Organizations

EC - pledged \$12,195,120 to procure 45,000 MT of wheat, 1,500 MT of vegoil, tents, and blankets. In May

and July, the EC announced further allocations of \$72,000,000 and \$30,000,000 for food, multi-purpose cyclone shelters, and technical assistance.

FAO - with WFP, conducted an assessment of agricultural damage. To support rehabilitation, FAO approved three emergency projects valued at \$800,000.

International Islamic Relief Organization - sent a relief team.

LRCS - issued an appeal and carried out a joint relief program with the BRC. LRCS provided \$100,000.

OPEC Fund/Vienna - contributed \$100,000 through UNDRO.

UNDP - made an emergency grant of \$50,000 and worked with the U.N. task force to identify priorities for immediate and post-emergency assistance, such as improved coordination, early warning systems, land use, and coastal protection.

UNDRO - gave \$50,000 and launched an appeal. The UNDRO director arrived in Bangladesh on May 5 to meet with BDG officials and conduct an assessment. UNDRO headed a U.N. task force to work with the BDG to formulate a report on medium- and long-term rehabilitation and reconstruction. The report, "The 1991 Cyclone in Bangladesh: Impact, Recovery, and Reconstruction," was presented at a meeting of the international community at U.N. Economic and Social Council headquarters in July.

UNICEF - issued an appeal and had implemented relief operations costing \$2,523,000 as of July 6, mainly in the area of health, water, and sanitation.

World Bank - at the BDG's request, convened a series of donor meetings to discuss reconstruction requirements and identify potential donors. A high priority was the construction of cyclone shelters, in view of reports of poor accessibility of shelters to the population affected by the April 30 cyclone.

WFP - allocated 21,000 MT of wheat and vegoil, partially valued at \$1,500,000, and, with FAO, assessed crop damage and food needs in early June. WFP operated a program for two million people for three

months and launched a food-for-work program to repair embankments in collaboration with the BDG.

WHO - sent an assessment team, and provided health kits for 480,000 people. WHO worked with the BDG Ministry of Health to coordinate medical assistance. Total allocation as of June 6 was \$650,000.

Governments

Australia - donated \$2,216,000 and pledged food aid.

Austria - provided \$164,000.

Burma - sent 500 MT of rice.

Canada - gave \$2,522,000 to the BRC, UNDRO, and Oxfam, as well as food.

China, People's Rep. - provided \$2,000,000 in aid, including tents, medical and food supplies, and helicopters.

Denmark - provided \$50,000.

Egypt - sent 85 MT of food and clothing.

France - provided \$86,000; 20,000 MT of wheat and powdered milk; and an additional \$520,000 for the local purchase of rice and plastic sheeting. France also assessed the electricity system in Barisal.

Germany - contributed a total of \$3,081,000.

India - provided \$700,000 and the loan of six helicopters, as well as an additional \$5,000,000 for relief in kind. India also sent 100,000 WPTs, bleaching powder, 5,000 MT of rice, and other items.

Iran - sent 90 MT of supplies.

Ireland - donated \$198,000 through UNDRO and Irish CONCERN.

Italy - allocated \$8,000,000 for the purchase of food, medicine, and medical supplies, and sent four helicopters and 40 army personnel to assist the relief effort.

Japan - contributed \$9,600,000, and sent two helicopters and a 50-person relief team.

Korea, Rep. - contributed \$100,000, and provided anhydrous glucose and foil needed for the manufacture of ORS in Bangladesh.

Nepal - gave \$100,000.

Netherlands - donated \$3,200,000 through LRCS and local NGOs, and pledged over \$5,000,000 to repair the Karnaphuli bridge.

New Zealand - donated \$5,120,000 through the EC and NGOs.

Norway - gave \$367,300 and financed the import of 22,500 MT of wheat by the BDG.

Pakistan - sent two helicopters, and donated \$4,515,000 in cash and \$1,670,000 worth of food and clothing.

Philippines - sent medicine.

Saudi Arabia - airlifted tents, blankets, and medicines and donated \$100,000,000 to the relief effort. In addition, Saudi Arabia made three C-130 planes available.

Sweden - approved a donation of \$3,461,000.

Switzerland - dispatched five delegates, including a communications expert, along with 36 MT of high protein food and tarpaulins. The Swiss contribution was partially valued at \$494,000.

Thailand - contributed \$75,000 and 5,000 MT of rice.

United Kingdom - donated a total of \$24,338,000 for emergency relief. The United Kingdom also provided two helicopters and a naval supply ship equipped with medical facilities.

Non-Governmental Organizations

CARE/Australia - sent 90 MT of relief goods, including food, blankets, and drugs to combat diarrhea and malaria.

Caritas International - donated \$422,300.

Corps Mondial Secours - dispatched a medical team and relief items.

Medecins du Monde (France) - set up a hospital in Cox's Bazar.

Oxfam/UK - distributed WPTs, food, candles, and matches from stocks already in country.

Red Cross and Red Crescent Societies - contributed at least \$4,719,719 (excludes ARC).

Secours Catholique - donated relief goods worth \$265,490.

South African Muslim Community - collected relief and medical supplies.

WCC - sent a team and supplies by chartered ship at a cost of \$650,000.

CAMBODIA - Floods

Date: August - September, 1991

Location: Ten provinces, including Kompong Speu, Kandal, Takeo, Prey Vang, Kratic, and Kompong Cham, and Phnom Penh suburbs

No. Dead: Not reported

No. Affected: At least 650,000 (132,000 families) in 10 provinces

Total USG Assistance: \$443,941

The Disaster

A weakened Typhoon Fred trailed over Cambodia in late August 1991, bringing several days of continuous, torrential rains that resulted in the worst flooding the country had experienced in 37 years. Compounding the situation was the flooding upstream in Laos that added to the water level in Cambodia's major rivers, especially the Mekong, Tonle Sap, and Tonle Bassac. Ten provinces crossed by these rivers were affected by the floods. Hardest hit were the provinces of Takeo, Kompong Speu, Kandal, Prey Vang, Kompong Cham, and Kratic, and the suburbs of the capital city of Phnom Penh. Hundreds of villages were inundated and many of them isolated by the rising flood waters. The Mekong River in Phnom Penh reached 10.8 meters on Sept. 10, passing the critical mark of 10.5 meters and causing widespread damage in the city of over one million inhabitants.

No official figure was released for the number of confirmed dead. Relief officials, however, estimated that the number could be over 100. The final assessment of flood damage reported by UNDRO in December indicated the following: 650,000 people in the 10 affected provinces in need of food aid; 3,000 homes totally destroyed; 243,000 ha. of rice fields flooded and 143,000 ha. of rice paddy destroyed; and massive livestock losses. Major damage to roads, bridges, irrigation structures, and other infrastructure was also reported.

Cambodia had experienced below average rainfall during the 10 years prior to the 1991 floods as well as three years of drought in the most severely affected

provinces. After 12 years of war and several years of drought, the health and welfare of the majority of flood victims was already in a precarious state before this latest disaster.

Action Taken by the Government of Cambodia and Non-Governmental Organizations

A ministry-level Health Committee for Flood Victims, formed in August, requested specific assistance to provide emergency drugs for 420,000 people for three months, as well as communications equipment, inflatable boats, and water systems equipment. On Aug. 23, the Minister of Foreign Affairs convened a meeting of NGOs and donor agencies operating in Cambodia to launch an appeal for emergency assistance. A formal request for international assistance was issued on Aug. 26. An appeal for humanitarian assistance was also issued by Prince Norodom Sihanouk, the country's hereditary monarch, who headed the Supreme National Council (SNC). *(Note: Subsequently, Prince Sihanouk was restored as head of state, after four rival factions agreed to a formal settlement on Oct. 23, 1991. The Phnom Penh government, in power at the time of this disaster and one of the rival factions, had been installed by invading Vietnamese in 1978. The three resistance factions included the Khmer Rouge communists who killed at least one million Cambodians during a four-year rule in the 1970s.)*

National authorities provided trucks and boats for relief and rescue operations, installed temporary bridges, and distributed food and medicine to the flood victims. As flooding threatened Phnom Penh, civilians were mobilized to sandbag key installations, including 15 km. of protective dikes and the Pochentong airport. Local NGOs and the U.N. system procured sandbags from neighboring Thailand and Vietnam. A group of local NGOs provided \$17,000 for the purchase of sandbags.

The Red Cross of Phnom Penh (RCPP) distributed rice provided by the WFP, as well as blankets, clothing, and medicine. RCPP first-aid workers offered medical assistance to flood victims, using UNICEF kits. With the support of LRCS, the RCPP planned to initially assist 200,000 people affected by the floods. *(Note: Each of the four military/political factions in Cambodia had an organization it referred to as the "Cambodian Red Cross". None of these organizations, however, was*

recognized by ICRC or LRCS at the time of this disaster, because none was an independent national organization. The RCPP, however, did have a staff and representatives in the provinces. Lacking any other indigenous humanitarian agency in Cambodia through which relief assistance could be channeled, the United Nations and donor governments supported the RCPP's relief efforts.)

As flood waters began to recede, a government post-flood assessment team was formed, comprising the ministers of agriculture, health, and transportation, and representatives of the United Nations, the Red Cross, and other NGOs. Government authorities worked with the U.N.-organized Flood Disaster Management Team (FDMT), which set up technical teams of experts to assess immediate, medium, and longer-term needs arising from the flood. Identified requirements included rice and rice seeds, building supplies, shelter kits, and vegetable seeds. The FDMT also recommended the establishment of a disease surveillance system and the stockpiling of emergency drugs and medicine for potential outbreaks of flood-related diseases.

Assistance Provided by the U.S. Government

The United States did not recognize the Phnom Penh regime as the legitimate government of Cambodia. However, in view of the magnitude of the disaster, which exceeded the ability of authorities and NGOs in Cambodia to respond, Acting Assistant Secretary of State for Asian and Pacific Affairs, Desaix Anderson, issued a disaster declaration on Aug. 26. He requested that OFDA determine the extent of the emergency and coordinate the appropriate response. He proposed that in response to Prince Sihanouk's appeal as SNC president, the USG extend assistance to one or more NGOs already operating in Cambodia.

On Aug. 30, OFDA arranged with DOD to transport 300 rolls of plastic sheeting (780,000 sq. ft.) to Phnom Penh from the Guam stockpile to be used for emergency shelter. (Note: To allow time for grommets and reinforced stitching to be added to the plastic sheets, OFDA plastic was exchanged for Oxfam plastic sheeting which had been earmarked for war displaced persons whose needs were less urgent than the flood victims. The OFDA plastic sheeting was reserved for later distribution.) OFDA also provided a grant to WVRD for

the purchase and transport of boats, motors, and survival kits. Distribution of the OFDA-provided commodities was carried out by the RCPP.

A three-person OFDA assessment team visited Cambodia from Oct. 6-20 to assess the impact of USG relief assistance already provided as well as to identify additional needs to which OFDA might respond. The team included specialists in food and health and a Cambodian-American fluent in the country's languages.

Summary of USG Assistance

FY 1991

DOD airlift of 300 rolls of plastic	\$150,000
Grant to WVRD	\$154,360
Travel costs of three-person assessment team	\$46,982
Total OFDA (FY 1991)	\$351,342

FY 1992

Replacement of 300 rolls of plastic to stockpile	\$84,480
Shipment costs to replace plastic	\$8,119
Total OFDA (FY 1992)	\$92,599

TOTAL \$443,941

Assistance Provided by U.S. Voluntary Agencies

American Friends Service Committee - gave \$28,700 for animal vaccination.

CARE - donated relief kits worth \$40,000.

CWS - purchased animal vaccines at a cost of \$150,000.

WVRD - with a program already in Cambodia, acted as the channel for USG assistance and facilitated the work of the OFDA assessment team. Additionally, WVRD provided \$192,000 for sandbags, survival kits, and agricultural inputs.

SCF/Australia - donated \$13,000 worth of sandbags.

Thailand Red Cross - gave relief items worth \$8,500.

WCC - contributed \$36,000 worth of sandbags, seedlings, and seeds.

LAOS - Floods

Date: September 1991

Location: Southern provinces of Khammouane, Savannakhet, and Champassak

No. Dead: None reported

No. Affected: 332,000

Total USG Assistance: \$1,593,651

The Disaster

Heavy seasonal rainfall created severe flooding conditions in southern Laos in September 1991. The water level in the southern Mekong River was reported to have risen three-and-a-half meters above normal. Hardest hit were the provinces of Khammouane, Savannakhet, and Champassak. Paddy fields were submerged over 1.8 meters for several days in some areas. Flood damage to agriculture, combined with earlier crop losses from drought and insect pests, was expected to result in a shortfall of over 300,000 MT in rice production for the 1991-92 season. Later estimates reduced the total deficit to about 177,000 MT. Some 332,000 people in farm families suffered major losses due to the floods.

Authorities also feared an increase in the incidence of typhoid, cholera, malaria, and dysentery as flood waters receded. A survey by the FAO resident representative observed a dangerous lack of medicine to treat such ailments should they occur.

Action Taken by the Government of Laos (GOL)

The GOL alerted external donors and began mitigative measures to counteract the effects of the drought in the south and the Vientiane Plain. Following the flood disaster in the southern provinces, the GOL fielded an assessment team and facilitated the further assessment of the flood- and drought-affected areas by teams from OFDA and FAO. An official GOL escort accompanied the OFDA and FAO teams on their survey missions.

Assistance Provided by the U.S. Government

Based on reports that an urgent need for medicine was expected in the wake of the floods, U.S. Charge

d'Affaires Charles B. Salmon issued a disaster declaration on Sept. 10 and donated \$25,000 under his Ambassador's Authority to the Lao Red Cross. The funds were used for the purchase of medicine to treat flood-related diseases in the provinces of Khammouane, Savannakhet, and Champassak.

In October, OFDA assembled a five-person team to travel to Laos to assess immediate relief needs and the longer-term requirements for mitigating the effects of future flood and drought disasters. The team was led by OFDA Deputy Director Dayton Maxwell, and consisted of specialists in agriculture, health, food, and rural development. Four members of the team were fluent in Lao.

The team met with GOL officials, interviewed farmers and rice merchants, and visited five sites of flood damage in Savannakhet, Champassak, and Khammouane from Oct. 12-19, joining an FAO/WFP assessment team at one site. The team concluded that the population submitted inflated requests to the government. The resulting credibility gap contributed to the government's inability to estimate the real emergency needs that went beyond the normal ability of the population to cope and adjust to the frequent floods and droughts. Following the on-site assessments, the USG agreed to contribute to an initial WFP emergency operation to distribute 8,000 MT of rice to 166,000 farmers most severely affected by floods in southern Laos.

FFP provided vegoil to the WFP program in India to offset WFP purchasing 4,000 MT of rice in Thailand for the Lao emergency program. The cost of the rice, internal transportation, and a WFP team to assist with distribution, monitoring, and reporting amounted to \$1,192,400 from FY 1992 accounts.

As a result of an FAO report completed prior to the emergency period, which concluded that the rice deficit is a structural problem and will result in a probable shortfall in food production in Laos for the rest of the decade, the OFDA team further recommended that the USG support the development of a contingency planning capability in Laos to be used in future shortages. In response to the team's recommendation, OFDA provided a grant for \$357,494 to WVRD for a famine mitigation relief project. The activity provided for public works projects that would enable 1,000 households to

supplement family diet for three months during the off-season in 1992. The projects would also provide specific relief inputs, such as rice seed, draft animals, supplementary foods, and various nutrition and health-related contributions to reduce the incidence of illness and death resulting from diarrhea, respiratory infections, and malaria. Funding for the WVRD grant came from FY 1992 accounts, as well as travel costs of the OFDA team which amounted to \$18,157 (from disaster travel funds). OFDA also funded the in-country travel of the UNDP representative in Laos who accompanied the team on its assessment mission.

<i>Total OFDA (FY 1991)</i>	<i>\$25,000</i>
<i>Total OFDA (FY 1992)</i>	<i>\$376,251</i>
<i>Total FFP (FY 1992)</i>	<i>\$1,192,400</i>
TOTAL	\$1,593,651

Assistance Provided by the International Community

Australia - contributed 1,500 MT of rice, worth about \$396,000, to the WFP program.

EC - donated 2,500 MT of rice to the WFP emergency operation.

FAO/WFP - conducted assessments in Laos to determine emergency food requirements in the flood-and drought-affected areas and to project agricultural production figures for the rest of the decade. WFP carried out an emergency program to distribute 8,000 MT of rice to 166,000 severely affected farmers.

MALDIVES - Storm

Date: May 27 - June 1, 1991

Location: Nationwide, especially northern and southernmost atolls

No. Dead: None reported

No. Affected: 23,849 displaced

Total USG Assistance: \$319,357

The Disaster

At the end of May, a violent windstorm accompanied by heavy rains swept the islands of the Republic of Maldives causing immense destruction, especially in the northern and southernmost atolls. The 1,190 small coral islands, clustered into atolls that form the Maldives, are low-lying and vulnerable to storms, but have been spared by regional cyclones in recent years. This year, however, gusting winds destroyed houses throughout the republic, leaving an estimated 23,840 homeless.

The national meteorological station in Male, the capital city, received some warning of the impending storm through satellite photographs, which indicated an unusual density of clouds and some circular patterns. Despite the station's issue of a preliminary warning to government officials, it only became evident at 11:00 p.m. on May 29 that the storm was potentially destructive. By then, attempts to warn the general population were largely ineffective as the national television and radio had ceased operations for the night. In Gan, the southernmost island, the full force of the storm hit at about 2:00 a.m. on May 30, blowing the roof off the local meteorological station. At that time, wind detection instruments registered winds of at least 90 knots, the highest winds ever recorded in the Maldives.

No deaths were reported among the total population of 220,000 who inhabit 280 islands. The winds, however, destroyed houses and crops, primarily in Addu Atoll along with three other southern atolls and three northern atolls. Gales of wind and rain continued to rage over the 500-mile atoll chain for several days, hampering relief efforts and accurate assessments. Over 3,400 houses were severely damaged and the storm uprooted hundreds

of thousands of trees, destroying over 30,850 timber trees, and almost 152,000 plantain trees, a major cash crop. The fishing sector (fish is a major source of protein in the Maldivian diet) was momentarily disrupted during the hiatus of activity surrounding the storm, but resumed shortly thereafter.

Action Taken by the Government of the Republic of Maldives (GORM)

On June 1, the GORM formed a disaster relief committee to respond to the storm. Officials in all inhabited islands were asked to develop detailed damage reports, and acting on the information provided, the committee established priorities for donations and distribution of relief food, medical supplies, and shelter. The disaster relief committee provided cash grants to those affected by the storm as reimbursement for damaged homes, crops (primarily plantain and other fruit trees), and boats. The Ministry of Foreign Affairs contacted potential donors by phone, canvassing the donor community for interest, and followed the calls with formal requests for assistance.

Assistance Provided by the U.S. Government

On June 5, a USAID representative from Colombo, Sri Lanka, traveled to Male to join the U.N. Disaster Response Committee for an on-site assessment of affected areas by helicopter. The helicopter was provided by the Maldivian Ministry of Foreign Affairs. The joint assessment report was used by other international donors to determine levels of adequate assistance.

On June 7, Charge d'Affaires Donald B. Westmore determined that a disaster situation existed in the Maldives, and released his Ambassador's Authority fund. OFDA channeled \$25,000 through the UNDP trust fund for the Maldives to rehabilitate existing shelter for victims of the storms and surges. OFDA later allocated an additional \$275,000 for rehabilitation of damaged housing in affected islands, and recommended that storm resistant techniques be used in the rebuilding process. In November, OFDA sent a team from INTERTECT to study the need for various disaster preparedness measures and to make recommendations to the GORM and USAID/Colombo on the most effective actions and

alternatives. The INTERTECT team's travel expenses amounted to \$10,357, from FY 1992 accounts.

TOTAL **\$319,357**

Assistance Provided by the International Community

International Organizations

FAO - provided technical assistance valued at \$125,000.

UNICEF - gave a \$25,000 grant towards medical lab equipment for mothers and children.

UNDP - established a trust fund for housing rehabilitation throughout the republic, and contributed \$50,000.

UNDRO - donated \$20,000.

WHO - provided five emergency health kits, each covering the needs of 1,000 people for three months.

Governments

Australia - contributed \$100,000 to the UNDP housing rehabilitation fund.

Canada - donated \$10,000 to the UNDP housing rehabilitation fund.

France - gave \$24,500 to the UNDP housing rehabilitation fund.

Germany - allocated \$277,420 to the UNDP housing rehabilitation fund.

India - contributed medicine, 1,000 MT of rice, 800 MT of sugar, and 800 MT of flour. The Government of India also provided two transport planes, two helicopters, and one naval ship for use in relief operations. The total value of all contributions was \$1,213,592.

Japan - provided \$20,000 to the UNDP housing rehabilitation fund.

Norway - contributed \$30,000 to the UNDP housing rehabilitation fund.

Pakistan - donated sugar, flour, medicine, and building materials, with a total value of \$434,783 (including transportation).

Sri Lanka - gave 1,000 kg. of tea leaves, corrugated roofing sheets, coconut rafters, and plantation seedlings.

United Kingdom - provided \$78,500.

PEOPLE'S REPUBLIC OF CHINA - Flood

Date: May - July 1991
Location: Anhui, Jiangsu, and Henan provinces were primarily affected.
No. Dead: 2,470
No. Affected: 320 million, with 18.4 million seriously affected
Total USG Assistance: \$785,000

The Disaster

Torrential rains that began on May 18 caused massive flooding in eastern China. A series of downpours generated flooding of the Yangtze River and its tributaries, and heaped over 1.54 meters of water on the provinces of Anhui, Jiangsu, and Henan, causing immense devastation to the lives and properties of local residents. Reports indicated that 15 other provinces were also affected by the floods.

The Government of the People's Republic of China (GPRC) reported the total death toll at 2,470 as of Aug. 14, with an affected population of 320 million. Inundations injured almost 24,000 and forced the evacuation of at least 13.9 million people. The flood contaminated the water supply in the region, causing an increased incidence of water-borne diseases. In affected areas, up to 25% of the population reportedly suffered from dysentery and malaria. Poor environmental and food hygiene conditions led to an increased hepatitis occurrence.

Floods knocked out the power and water supply in many provinces and caused extensive damage to industrial and commercial enterprises, road and communications infrastructure, and irrigation systems. According to GPRC estimates, 2.1 million houses collapsed, and an additional 4.1 million houses, along with 1,800 hospitals, were damaged. Over 1,000 km. of roads were washed away, rendering communication and travel difficult. By mid-July, the main Beijing-Shanghai railroad line was functioning normally. Economic loss was estimated at \$7.5 billion, with much of the loss coming from the over 19.3 million ha. of agricultural crops totally or partially destroyed by the floods. This led to a prospective loss of 13.2 million MT of grain.

Existing flood waters were expected to delay planting of autumn crops. In Anhui, an important grain producing province and the area worst hit by the floods, over 80% of cropland was covered by flood waters. About two million MT of grain was lost in Jiangsu Province. Significant damage was also reported in neighboring provinces of Hubei, Sichuan, Zhejiang, Guizhou, and Hunan, with Hubei reporting 17 counties under water. Floods also wreaked havoc in the northeastern provinces of Heilongjiang and Jilin, where hundreds of villages were reportedly damaged or underwater, at least 106 people were killed, and over 60,000 houses were destroyed.

Action taken by the Government of the People's Republic of China

In response to the severe flooding, the GPRC launched an appeal for international assistance. The General Secretary of the Communist Party of China, Jiang Zeming, the Prime Minister, Li Peng, and other officials visited the disaster area to inspect the damage, provide guidance to relief workers, and express sympathy to victims. Local and central governments in Anhui and Jiangsu provinces provided more than \$75 million in disaster relief funds, and over 700,000 MT of relief goods and materials. The Chinese army, the Chinese Red Cross, and other local relief organizations were mobilized to combat floods, build dikes, drain flood waters, and deliver relief assistance. The People's Liberation Army and the China Armed Police deployed 360,000 troops, who worked with local citizens to provide relief. An additional 58 medical teams were dispatched to Anhui for relief and disease control, and over 80,000 medical workers were sent to fight the spread of water-borne diseases in the most affected areas.

Assistance provided by the U.S. Government

On June 28, U.S. Charge d'Affaires, B. Lynn Pascoe, declared that the floods constituted a disaster and released \$25,000 to the UNDP emergency relief project for flood disaster victims in Anhui Province. OFDA contributed \$100,000 to MSF/France who worked with UNICEF to provide emergency medical assistance, potable water, and emergency shelter in affected areas. OFDA also contributed \$400,000 directly to UNICEF to be used in Anhui, Henan, and Hubei provinces to

procure and restock 12 township-and village-level maternal and child health clinics with essential drugs. DOD donated and airlifted 70 tons of blankets worth about \$260,000. The blankets arrived in Shanghai on Aug. 9.

Summary of USG Assistance

Ambassador's Authority (OFDA)	\$25,000
Grant to MSF/France (OFDA)	\$100,000
Grant to UNICEF (OFDA).....	\$400,000
Airlift 70 tons blankets (DOD)	\$260,000
TOTAL	\$785,000

Assistance Provided by U.S. Voluntary Agencies

AmeriCares - chartered a flight to carry food, medicine and nutritional supplements, donated by a number of U.S. corporations, to flood victims in Anhui and Jiangsu provinces. The relief supplies were turned over to the All China Women's Federation and the China Children and Teenagers' Fund for distribution.

CWS - contributed \$5,000 through the Amity Foundation.

WVRD - provided \$605,560.

Assistance Provided by the International Community

International Organizations

EC - donated \$571,428 for tents, medicine, disinfectants, and food.

FAO - contributed \$400,000 for agricultural rehabilitation.

LRCS - worked with the China Red Cross to assess needs and conduct relief activities.

UNDP - gave \$50,000 and worked with UNDRO to coordinate international funds to provide medicine, water purification facilities, bleaching powder, tents,

blankets, and building materials for temporary shelters for flood stricken areas.

UNDRO - contributed \$20,000.

UNHCR - gave \$50,000.

UNICEF - donated \$25,000 to provide medicine for children affected by the floods.

WHO - approved a donation of \$15,000 for the local procurement of medical supplies and water purification facilities.

Governments

Australia - gave \$234,000 to UNDP to purchase medicine and building materials. The State of Victoria contributed \$78,000 to Jiangsu.

Burma - contributed 1,500 MT of rice.

Canada - contributed \$87,719 through UNDRO and \$87,719 through the LRCS. A Canadian private organization donated 18,000 blankets.

Denmark - donated \$20,000.

Finland - gave \$46,948.

Germany - donated \$277,778 through UNDRO and provided 4,700 MT of rice.

Hong Kong - contributed \$83,500,000.

Italy - provided \$374,531 through UNDRO.

Japan - provided \$300,000, as well as 3,780 blankets, 25,000 water purification doses, and two sets of medical instruments, all valued at \$172,059.

Korea, Dem. People's Rep. - gave 20,000 MT of cement.

Netherlands - donated \$49,504.

New Zealand - gave \$28,901.

Norway - contributed \$281,936.

Pakistan - donated 5,000 MT of rice.

Spain - provided 250 tents, 2,500 kg. medicine, and 10,000 water purification pills totaling \$353,982 including delivery costs.

Thailand - gave disaster relief goods valued at \$200,000 and 100,000 MT of rice.

United Kingdom - donated \$100,000 and provided \$20,000 for an UNDRO delegate.

Non-Governmental Organizations

MSF/France - conducted relief operations in affected areas.

Red Cross societies from Australia, Austria, Canada, Finland, Japan, Germany, Iceland, Korea, Rep., and Switzerland contributed a total of \$604,770.

PHILIPPINES - Typhoon

Date: Nov. 12-13, 1990

Location: Visayan Islands and northern Mindanao

No. Dead: 503; 240 missing

No. Affected: 1,009,655 families (about 5,048,275 people); 222,004 families homeless; 1,274 injured

Total USG Assistance: \$523,361

The Disaster

The strongest typhoon to hit the Philippines in the 1990 season bore down on the country's central islands on Nov. 12-13 with sustained maximum winds of over 250 km. per hour. Typhoon Ruping (international code name Mike) left a path of destruction as it swept across Samar, Leyte, Cebu, Negros, and Panay Islands in the Visayas, and Cagayan de Oro Province in northern Mindanao. According to a USAID assessment, the following provinces were the most seriously affected: Iloilo in Region 6, including Iloilo City and Guimaras; Negros Occidental in Region 6, including Bacolod and Silay cities; Cebu in Region 7, including Cebu City; and Northern and Southern Leyte Provinces in Region 8, including Tacloban and Ormoc cities. Cebu City, the country's second most important industrial center, was hit full force by the storm and sustained severe damage.

The death toll mounted as reports from areas cut off by the storm finally reached Manila. The final count was 503 dead, 240 missing, and 1,274 injured. At least 17 of the dead were caught in a mudslide in Negros Occidental. The homeless numbered some 1.1 million, as the storm destroyed 222,004 homes and seriously damaged another 630,885 dwellings. By GOP estimates, more than five million people were affected by the typhoon's strong winds and storm-generated flooding.

The storm knocked out power and communications lines in nearly all the affected areas and washed out roads and bridges. The media reported that 77 cargo and passenger vessels sank at the height of the storm, many of them moored at the Cebu wharf. A commercial vessel slammed into the bridge connecting Cebu City and Mactan Island (where the airport is located). The

agricultural sector suffered a serious blow from the large loss of livestock and damage to maturing crops. Total damage to the infrastructure was estimated by the GOP at approximately \$720 million.

Action Taken by the Government of the Philippines (GOP) and Non-Governmental Organizations

President Corazon Aquino declared 30 provinces in Regions 4, 5, 6, 7, 8, 10, and 11 to be calamity areas, giving them priority for relief and rehabilitation efforts, while also mobilizing all GOP departments and agencies concerned with disaster relief. The National Disaster Coordinating Council (NDCC), under the Department of Defense, monitored relief operations, and local disaster relief councils were put on alert. The Philippine National Red Cross (PNRC) and the Department of Social Welfare and Development (DSWD) were joined by units of the armed forces in assisting the relief effort. The Secretary of Defense ordered the airlift of 150 tents from armed services supplies into five affected cities.

The PNRC and other local NGOs set up evacuation centers to shelter thousands of storm victims who had been forced to flee from their homes. Red Cross workers in Iloilo rescued crewmen from storm-battered boats, and their counterparts in Suragao del Norte helped with the evacuation of people residing along coastal areas before the typhoon struck. The PNRC coordinated with the NDCC for the airlift of relief supplies to stricken areas, and sent two truckloads of supplies from national headquarters to the Bicol and eastern Visayas in preparation for the typhoon.

Government agencies, the military, and private groups responded promptly to the needs of the storm victims. The GOP Department of Health sent 5,500 lbs. of assorted drugs and medicines to Iloilo City for distribution to provincial health offices in affected provinces. The DSWD airlifted relief goods, consisting of food, clothing, and flashlights, to the cities of Dumaguete, Cebu, Tacloban, Iloilo, Bacolod, and Roxas, and to the province of Palawan, coordinating with local government units and NGOs in stricken areas. The Philippine air force airlifted at least 443,500 lbs. of relief supplies from the PNRC, the DSWD, and the Bigay Puso Foundation to affected areas. The Philippine navy sent ships laden with relief goods to typhoon-

ravaged provinces. As of Nov. 28, President Aquino had authorized the release of \$3.83 million in assistance to line agencies involved in disaster operations, and to local government units for ongoing relief in their respective areas. By Dec. 3, more than 470,000 families had been provided with emergency supplies by government agencies and the PNRC. Local newspapers, television and radio stations, and local civic organizations raised an additional total of \$178,500 for typhoon relief.

Assistance Provided by the U.S. Government

Upon hearing reports from the U.S. Consulate in Cebu City of the magnitude of the storm's destruction, U.S. Ambassador Nicholas Platt declared a disaster on Nov. 14 and released \$25,000 under his Disaster Assistance Authority to the PNRC for immediate relief needs.

A plane from the Embassy defense attache's office flew to Cebu on Nov. 15, carrying communications equipment, personnel, and other supplies from USAID to do an assessment. Subic Naval Base also sent an aircraft to Cebu with a team of six engineers and a salvage expert to assess damage in Cebu and recommend appropriate U.S. military assistance. A U.S. Air Force plane from Clark AFB flew over northern Mindanao and the Visayas on Nov. 15 to determine the extent of damage to areas other than Cebu.

At the request of USAID/Manila, OFDA provided \$150,000 to the Mission on Nov. 19 for the local procurement of shelter materials, cotton blankets, clothing, water containers, and food, as well as for the transportation and distribution costs of these items. The local NGOs working with USAID purchased local building supplies (nipa shingles, sawali mats, and coco lumber) when available. However, since extensive storm damage to such materials had driven up their cost, USAID/Manila recommended that OFDA make available plastic sheeting as supplementary shelter for the homeless. OFDA arranged with DOD to transport 325 rolls of plastic sheeting (845,000 sq. ft.) from the Guam stockpile to the Philippines.

USAID signed the following grants with four local NGOs from the \$150,000 made available by OFDA: (1) the Philippine Business for Social Progress worked through partner organizations in Antique, Iloilo, and

Southern Leyte, distributing food, indigenous shelter materials and OFDA plastic sheeting; (2) the Ramon Aboitiz Foundation, Inc., provided relief supplies to 3,135 families in Cebu City; (3) the Negros Economic Development Fund used its USAID grant to procure and distribute water containers and shelter materials to 4,994 families in Bacolod, Negros Occidental; and (4) Kauswagan Victorias Foundation distributed food and relief items to 3,034 families.

As further assistance to the rehabilitation effort, OFDA funded the cost of deployment and support of U.S. Navy electricity transmission repair teams from the "U.S.S. Duluth" for 14 days to help restore power to Cebu City.

To make food available for emergency distribution, USAID authorized the release of P.L. 480 Title II food (corn, soya blend, and bulgur wheat), valued at \$570,913, from PVO regular program stocks.

Summary of USG Assistance

Ambassador's Authority	\$25,000
DOD airlift of plastic sheeting	\$83,000
Partial replacement of 325 rolls of plastic sheeting.....	\$59,361
OFDA allotment to USAID/Manila for local procurement of relief supplies	\$150,000
OFDA allotment to USAID/Manila for the deployment of power line teams	\$69,000
Value of P.L. 480 Title II food	\$570,913
Total OFDA	\$386,361
Total FFP.....	\$570,913
TOTAL	\$957,274

Assistance Provided by U.S. Voluntary Agencies

ARC - gave \$100,000 to the PNRC for typhoon relief.

CARE - distributed food and blankets to the typhoon victims.

Christian Children's Fund - sent \$150,000 to its office in the Philippines for affiliate projects.

Caritas/Italy - gave \$8,800.

CRS - provided \$25,000 as an initial contribution to the relief effort and also distributed tents, blankets, medicine, and P.L. 480 food from its regular program stocks.

Caritas/Netherlands - contributed \$59,200.

LWF - provided \$15,000.

SCF - assisted in evacuation efforts on the Island of Panay and donated \$10,000.

Secours Catholique Francais - donated \$49,240.

WVRD - gave \$40,000 for relief assistance.

Assistance Provided by the International Community

International Organizations

LRCS - channeled \$153,850 donated by Red Cross and Red Crescent societies to the PNRC.

UNDRO - gave an emergency grant of \$20,000.

UNDP - donated \$50,000 worth of relief supplies.

UNICEF - provided water purification tablets and other medical supplies worth \$28,710.

Governments

Belgium - donated \$90,252 to Cebu and carried out a project to construct the Pasil fishing port in the city.

Denmark - contributed \$25,950.

Germany - gave tents and medicine valued at \$132,450.

Japan - donated \$400,000 for rehabilitation and reconstruction.

Sweden - gave \$17,950 worth of relief items.

United Kingdom - provided medicine worth \$36,900, and shelter materials and seed valued at \$19,400.

Non-Governmental Organizations

Caritas/Australia - gave \$47,500.

Caritas/Germany - donated \$133,400.

PHILIPPINES - Volcanic Eruption

Date: Eruption began June 8, 1991

Location: Mt. Pinatubo in southwest Luzon

No. Dead: 932

No. Affected: At least 1,200,000

Total USG Assistance: \$48,331,650

The Disaster

Mt. Pinatubo, a volcano located about 100 km. northwest of Manila, began erupting on June 8 after lying dormant for six centuries. Philippine and U.S. scientists had been monitoring the volcano for several weeks after it began to show signs of coming alive in April.

The evacuation of Aeta tribesmen living in villages on the volcano's slopes began on June 8 as steam clouds billowed over Pinatubo. Subsequent fiery explosions, and sustained, violent eruptions on June 14 and 15, sent mushroom clouds as high as 30 km. and unleashed avalanches of molten rock, ash, gas, and mudflows that cascaded down the volcano's flanks. Ashfall was deposited up to 40 km. from the volcano. Rain from Typhoon Yunya (Diding) combined with falling ash created mud deposits that caused roofs of buildings to collapse, accounting for many of the early deaths.

In Angeles City, some 20 km. east of Mt. Pinatubo, ashfalls 8-10 cm. thick caused the collapse of 5% to 10% of roofs. A hospital wing in Olongapo caved in, killing eight people. The international airport in Manila was closed to jet traffic until June 25 because of the danger posed by volcanic ash clogging aircraft engines. Thick ash deposits on roads in the affected area and flooding from the typhoon and seasonal rains hampered ground traffic as well.

The two largest U.S. military bases in the Philippines, Clark Air Force Base and Subic Naval Base, were seriously damaged by the volcanic eruptions, prompting the evacuation of 20,000 military dependents and over 4,500 non-essential personnel back to the United States. Because of the thick ashfall that covered runways and buildings, the U.S. military officially closed Clark AFB in November.

In the weeks following the cataclysmic eruption, heavy rains generated by typhoons and the southwest monsoon triggered lahars (mudflows carrying volcanic debris) and flooding, which caused further widespread damage in the most seriously affected provinces of Pampanga, Zambales, and Tarlac. Many of the major rivers in central Luzon, heavily silted by volcanic ash and debris, changed course and overflowed their banks, threatening densely populated areas. Several drownings and deaths in mudflows were reported.

Prior to the major eruptions, thousands of Filipinos were evacuated from cities and towns near the volcano. The migration to evacuation camps and large cities continued over several months as new areas were threatened by mudflows and flooding. Emergency shelters were located in schools, churches, local sport centers, and tent cities. The number of people sheltered at evacuation camps varied from day to day, as people returned to their homes only to be forced back to camps by new ashfalls or mudflows. The government's Department of Social Welfare and Development (DSWD) reported that 326,769 people were assisted at the camps. As of Oct. 25, about 100,000 people were still living in the camps. Hundreds of thousands of other evacuees found refuge with friends or relatives. For the Aetas and many of the displaced lowlanders, a return to their ancestral homes was impossible. Resettlement appeared to be the only option.

Poor sanitation, malnutrition, and epidemics of childhood diseases took a severe toll in the evacuation camps. Over half of all deaths were attributed, either directly or indirectly, to the volcanic eruption. As of Sept. 28, the GOP reported 426 deaths in the camps, the majority of whom were Aeta children under the age of four. The leading causes of death were measles, diarrhea, and pneumonia. Volcano-related deaths from all causes reached 932, according to DSWD estimates. At least 1.2 million people were directly affected by Mt. Pinatubo's eruption.

The volcanic eruptions, mudflows, and flooding caused extensive economic losses and heavy damage to crops, roads, bridges, buildings, and other infrastructure. Some 108,000 homes and numerous hospitals, health centers, and schools were destroyed or damaged, as were at least 28 bridges, 17 water systems, and five irrigation systems. The affected bridges included the Abacan and

Bamban bridges on the north Luzon tollway, north of Angeles City, and the Cabatican bridge, west of Angeles. Flooding and mudflows overran portions of the cities of Concepcion and Angeles and inundated the towns of Bacalor and Guagua in Pampanga. Many towns were inundated repeatedly and entire barangays (small communities) in some areas were washed out or isolated by mudflows. Agricultural losses included not only the immediate damage to crops, livestock, and fisheries, but also the potential losses due to the silting of irrigation canals and the loss of arable land to ashfall and lahars. The government estimated that eruptions and lahars caused more than \$260 million worth of damage to public and private property. Due to the ongoing nature of the Mt. Pinatubo disaster, estimates for reconstruction costs, future income, and infrastructure losses are likely to rise much higher.

Although scientists believed that the most violent eruptions ended after the June 14-15 paroxysms, the alert level for the volcano remained at five (the highest on a scale of one to five that designates the degree of danger) for several months due to continued seismic activity and intermittent eruptions. The major threat, however, was from massive mudflows expected to continue for several rainy seasons to come. Experts estimated that the amount of volcanic material spewed out by the volcano was five to eight cubic kilometers, roughly 20 times that emitted by Mt. St. Helens in 1980. As little as 5% of the pyroclastic material deposited on the mountainside by the June eruption had been eroded in the form of mudflows by the end of the 1991 rainy season. Another 25% of the debris will be washed away in the next three years, and 50% of the volcanic material will be eroded by the time lahars subside at the end of the century. The remaining 50% of the debris is expected to remain on the mountain.

Action Taken by the Government of the Philippines (GOP)

Scientists from the Philippine Institute of Volcanology and Seismology (PHIVOLCS) began monitoring the volcano in early April. They appealed to the USGS to assist by sending U.S. volcanologists and equipment. The relatively low casualty figure directly attributable to the volcanic eruption was due to the early warnings made possible by the continuous monitoring. USGS expert, Dr. Christopher Newhall, helped lead the USGS/

PHIVOLCS preparedness efforts leading up to the eruption, including preliminary visits to villages near the volcano. Dr. Newhall also provided timely advice to disaster managers in the Philippines on decisions to evacuate populations at risk during the eruption.

The Philippine Civil Defense and local authorities organized massive evacuations when the volcano first threatened to erupt. Officials subsequently carried out search and rescue, and evacuation operations to save families whose homes had been submerged by mudflows or floods. Several teams of volcanologists surveyed the volcano's slopes to determine where the threat of mudflows was the greatest. Philippine Armed Forces troops were also deployed to stricken areas to assist with relief operations.

President Corazon Aquino declared a state of emergency in the affected municipalities and ordered government agencies to mobilize for a major relief and rehabilitation effort. The Philippine National Red Cross (PNRC) and the DSWD were the primary relief agencies working in the shelters and with the affected population. The GOP Department of Health (DOH) attempted to address the health care problems aggravated by the disaster, especially to ensure immunization coverage for the vulnerable population and improved sanitation in the semi-permanent evacuation sites. As of Sept. 4, 1991, GOP relief agencies, local NGOs, and private groups had provided assistance of about \$25.5 million. The National Food Authority had released about 3,000 MT of rice to the DSWD for emergency feeding as of the same date.

The Department of Public Works and Highways began clearing ash and volcanic debris, where possible, and repairing roads and electric and water systems. Protective barriers were built in some locations to protect bridges, roads, and settlements against damage from mudflows. In addition, warning systems were established, and evacuation plans drawn up. The GOP consulted with the USGS and a team from the U.S. Army Corps of Engineers to design engineering interventions to mitigate the effects of future lahars and flooding.

President Aquino created a task force consisting of four committees to identify and set priorities for rehabilitation activities. The task force published a

report focusing on infrastructure, resettlement, livelihood, and social services. The National Economic Development Authority (NEDA) further defined the proposed projects, to be carried out in three phases. Phase I covers continuing rescue and relief activities and has as a major component to improve the warning system and emergency preparedness measures. Phase II, which deals with rehabilitation and recovery, includes projects to repair infrastructure, and help disaster victims resettle and regain a means of livelihood. Phase III involves long-term reconstruction projects. President Aquino met with the diplomatic corps on Oct. 9 and provided a summary of the GOP's plans for an \$824 million long-term reconstruction program. The GOP also announced plans to build at least 16 new towns as permanent resettlement areas for displaced people.

Besides the major relief effort carried out by the PNRC, other Philippine NGOs also responded. The Philippine Business for Social Progress (PBSP) established a network to distribute relief goods in Zambales, Pampanga, and Tarlac. The assistance was channeled through an inter-agency network of voluntary agencies and a corporate network for business groups. As of Sept. 30, the Corporate Network for Disaster Response (CNDR) had dispatched 14 container vans, 12 trucks, and three busloads of relief goods to NGO partners in the affected provinces, benefiting some 37,562 families.

Assistance Provided by the U.S. Government

On April 22, USAID/Manila invited a team from the USGS to join Philippine scientists in studying the volcano and making recommendations to the Mission, the U.S. military, and the GOP. Equipment carried by the team performed seismic measurements and other analyses of the volcano. The equipment was part of a Volcano Crisis Assistance Team (VCAT) cache provided by the USGS and OFDA and kept at the Cascades Volcano Observatory for deployment around the world in volcano emergencies. Dr. Christopher Newhall of the USGS initiated the response, well before most others in the scientific community outside the Philippines were aware the risks.

The USG replaced equipment lost during the major eruptions and donated that and the remaining equipment to the Philippines for the probable long-term need at Pinatubo. The donated equipment was valued at

\$316,680 which included mudflow sensors. OFDA purchased monitoring equipment for the VCAT cache to replace the equipment donated to the Philippines. The replacement equipment, valued at \$281,280, will be used to monitor Mt. Pinatubo until the crisis ends. Because of the long-term and largely mitigative nature of the monitoring activities, OFDA funding for the VCAT equipment came from the PMP account.

The expenses of the USGS scientists and the cost of field operations for the period April 22 to June 9, 1991, were \$193,850 and paid for by USGS, USAID, and the U.S. Air Force (for aircraft). The costs through July 31, borne by OFDA, were \$291,829 (PMP account). Expenses of the USGS teams through Sept. 30 amounted to approximately \$392,500, paid partly by DOD (\$211,000) and the remainder (\$181,500) by USGS. NOAA's provision of satellite imagery of the volcano was valued at \$100,000, and the support of four National Science Foundation (NSF) personnel working with PHIVOLCS cost about \$25,000. USGS volcanologists, including mudflow experts, remained at the volcano site in 1992 to monitor events.

On June 10, U.S. Ambassador Nicholas Platt determined that the volcanic eruptions constituted a disaster. He released \$25,000 under his Ambassador's Authority to donate to the PNRC for the relief effort. At the request of USAID/Manila, OFDA provided a \$500,000 grant to PBSP to purchase water containers, food, shelter materials, and medical supplies for displaced persons in Zambales, Pampanga, and Tarlac provinces. PBSP managed the grant, which was implemented by four NGO partners.

OFDA sent an expert on the health effects of breathing volcanic ash to Manila on June 21. Dr. Peter Baxter of the University of Cambridge, United Kingdom, worked with the DOH to set up a volcanic ash monitoring and analysis system. The cost of Dr. Baxter's travel, funded by OFDA, was \$14,810. In addition, OFDA located a soils expert to assess the mid- and long-term effects of ashfall on soils, and the fertility of the soil for future crop production. Dr. Steve Holzhey, a senior scientist with the Soils Conservation Service of USDA, spent two weeks in the Philippines. His expenses were estimated at \$8,000.

OFDA approved a grant for \$445,000 to CARE for tools, shelter materials, tents, and cash wages paid to evacuees who assisted the GOP in the clean-up of ash deposits. The beneficiaries were mainly the Aetas. OFDA also provided \$125,000 to assist the DOH in its effort to maintain an acceptable level of health in the evacuation camps. USAID used the funds to purchase 16 generator units, 10 water trailer tanks, two units of portable declogging equipment, portable latrines, and emergency lights.

USAID authorized the release of P.L. 480 Title II food commodities from regular program stocks to be distributed by CRS and CARE to the evacuees. The food was valued at \$324,866. Additionally, USAID provided \$100,000 to the Philippine Department of Agriculture for agricultural rehabilitation.

USAID/Manila hired three experienced Filipino disaster managers and sent them on continuous reconnaissance travel around the volcano to collect the most current information on volcanic hazards, mudflows, and the conditions at displaced persons camps. They reported periodically to USAID/Manila. There were also numerous field visits by American disaster managers from USAID/Manila and A.I.D./Washington. In July, USAID contracted with Louis Berger International, at a cost of \$102,000, to send a four-person team to conduct an in-depth infrastructure damage assessment in Region III.

DOD provided an estimated \$3.5 million worth of MREs (meals ready to eat) to the DSWD for distribution to victims of the disaster, as well as blankets, water containers, and other relief supplies. U.S. Naval forces worked with some 30 relief organizations to distribute over 100 truckloads of relief supplies and construction material. Navy personnel helped to repair schools, hospitals, and other structures and provided medical and dental services. The value of the civic action assistance was estimated at \$7.8 million.

On July 27, OFDA authorized the payment of \$160,000 to DOD to airlift a shipment of relief supplies from the A.I.D. stockpile in Guam to Manila. The shipment of 493 rolls of plastic sheeting (1,281,800 sq. ft.), 5,916 cotton blankets, and 8,420 wool blankets arrived in Manila on July 30. Two OFDA-funded housing experts traveled to the Philippines in mid-August to advise on

the correct use of plastic sheeting for temporary shelter. Demonstrations were held in Botolan (Zambales) and Concepcion (Tarlac) on Aug. 13 and were attended by representatives from the PNRC, DSWD, and various NGOs and government offices. A second shipment of 500 rolls of plastic sheeting and 6,000 cotton blankets was transported from the Singapore stockpile by DOD in September at a cost to OFDA of \$118,000. To meet continuing emergency needs, OFDA dispatched a third shipment of plastic sheeting (350 rolls) via DOD aircraft, to the Philippines on Nov. 7 at a cost of \$84,245 for transport. Some of the plastic went to provide shelter for victims of flooding in Leyte caused by Tropical Storm Thelma (Uring).

OFDA arranged to send a four-man team from the U.S. Army Corps of Engineers (USACE) to work with the GOP Department of Public Works in studying ways to ameliorate the continuing impact of mudflows and flooding. The team, which arrived in the Philippines on Sept 6., surveyed the damage to irrigation systems, transportation facilities, villages, and other infrastructure. Their report was used by the Philippine government and the USAID/Manila to aid in setting priorities for future mitigation and rehabilitation activities. The Army paid team salaries, amounting to \$25,000, and OFDA obligated \$15,000 for travel and per diem.

A team of consultants from INTERTECT visited the Philippines from Nov. 21 to Dec. 4 to review the emergency response, identify gaps in the rehabilitation effort, and recommend priorities. USAID/Manila used the findings and recommendations of the team as a focus for its program to lead a coordinated response by donors to the future needs of Mt. Pinatubo's victims. OFDA funded the team's expenses of \$17,518.

As of March 1992, USAID/Manila had reprogrammed \$24 million from prior year development assistance funds for the Mt. Pinatubo Disaster Relief and Rehabilitation program. This included \$2 million in Project Design funds for the engineering design of schools; \$10 million from the Regional Development Fund for the construction or rehabilitation of schools and for the design of the Olongapo City General Hospital; and \$12 million from Rural Infrastructure Projects funds for USACE, the construction of schools, and the Olongapo City Hospital. Major activities to be undertaken under a long-term USAID contract with

USACE included the evaluation and assessment of existing pyroclastic and sediment deposits, and the identification of possible alternatives for controlling sediment run-off and flood waters. USACE activities also included the aerial mapping of the Mt. Pinatubo area. USAID/Manila planned to reprogram an additional \$8 million from FY 1992 Economic Support Funds for the reconstruction of schools and hospitals, bringing the total in reprogrammed funds to \$32 million.

Also, from FY 1992 funds, USAID/Manila provided a grant for \$740,740 to the J.V. Ongpin Foundation, Inc., for Aeta health care, as well as a \$250,000 grant to PHIVOLCS to support volcano and hydrological monitoring.

Summary of USG Assistance

FY 1991

OFDA Assistance

Ambassador's Authority	\$25,000
Grant to PBSP	\$500,000
Expenses of medical expert	\$14,810
Expenses of soils expert (USDA/RSSA)	\$8,000
Grant to CARE.....	\$445,000
Grant to GOP Dept. of Health.....	\$125,000
First DOD airlift of stockpile items	\$160,000
Second DOD airlift of stockpile items.....	\$118,000
Replacement cost of 8,420 wool blankets.....	\$34,101
Replacement cost of 993 rolls of plastic sheeting and grippers.....	\$293,320
Expenses of housing experts (\$6,115 from travel funds)	\$11,530
Travel of USACE team	\$15,000

Expenses of USGS team (6/10-7/31)
(PMP funds) \$291,829

Donated volcano monitoring equipment
(PMP funds) \$316,680

Replacement cost of VCAT equipment
(PMP funds) \$281,280

FFP Assistance

Value of P.L. 480 food..... \$324,866

DOD Assistance

Value of MREs

Civic action assistance

Partial expenses of USGS team (7/31-9/30).....

Salaries of USACE team

Other USG Assistance

Initial expenses of USGS team (4/22-6/9)
(USAID, USGS).....

Partial expenses of USGS team (7/31-9/30)
(USGS).....

Cost of satellite imagery (NOAA)

Expenses of NSF personnel (NSF)

Assistance to GOP Dept. of Agriculture
(USAID)

Louis Berger assessment (USAID)

Reprogrammed funds for rehabilitation
(USAID)

Total OFDA \$2,639,550
Total FFP..... \$324,866
Total DOD \$11,536,000
Total Other USG \$24,702,350

Total FY 1991 \$39,202,766

FY 1992

OFDA Assistance

Third DOD airlift of stockpile items..... \$84,245

Expenses of INTERTECT team..... \$17,518

Transport to replace blankets and plastic
to stockpile \$36,381

Other USG Assistance

Grant to Ongpin Foundation (USAID) \$740,740

Grant to PHIVOLCS (USAID) \$250,000

Reconstruction activities (USAID)..... \$8,000,000

Total OFDA *\$138,144*

Total Other USG *\$8,990,740*

Total FY 1992..... *\$9,128,884*

TOTAL **\$48,331,650**

Assistance Provided by U.S. Voluntary Agencies

ARC - donated \$40,000 and provided 440 tents, 96 rolls of plastic sheeting, 1,000 water containers, and eight pallets of medical supplies, valued at \$125,000.

Baptist World Alliance - provided medical assistance through its Philippines affiliate.

CARE - drilled wells at evacuation camps and provided water containers, tents, and tarps for more than 7,000 families. CARE also donated 175 rolls of plastic sheeting and distributed 200 MT of food.

CRS - donated \$22,900.

LWR - gave \$15,000 through the Lutheran World Federation.

Pearl S. Buck Foundation - provided \$27,000 for food relief.

St. Vincent de Paul (New York) - donated 1,800 blankets.

WVRD - gave \$380,000 to the relief effort, providing rations for three months for 1,000 families in evacuation centers, powdered milk for 500 children, and shelter material for 500 families.

Assistance Provided by the International Community

International Organizations

Asian Development Bank - announced the availability of funds for immediate needs within the Angeles-San Fernando corridor. In this zone, ADB would meet infrastructure needs of three resettlement sites and finance income generation projects for the resettled.

EC - contributed \$361,446.

FAO - gave \$50,000.

International Labor Organization - gave \$30,000 for technical assistance.

LRCS - issued an appeal on June 21 on behalf of the PNRC and sent a delegate to the Philippines.

UNDP - donated \$500,000 for rehabilitation and \$50,000 for tents and blankets.

UNDRO - made an emergency grant of \$25,000, sent a volcanologist to assist local authorities, and launched an international appeal. An UNDRO team conducted an 11-day mission to help assess damage and coordinate the international response.

UNICEF - authorized the release of \$250,000 for the purchase of relief supplies.

World Bank - planned a 10-year infrastructure rehabilitation project.

WFP - sent assessment teams and donated \$50,000. WFP also provided rice, dried fish, cooking oil, and food packs, as well as transportation, at a total cost of \$867,752.

WHO - donated \$15,000 for drugs and medical supplies.

Governments

Australia - gave \$311,500 for relief and rehabilitation, and \$64,000 for medical supplies and equipment for the Olangapo hospital.

Belgium - contributed \$13,514.

Canada - channeled \$184,794 through the PNRC and other NGOs.

China, People's Rep. - gave \$20,000.

China, Rep. - provided \$215,385 and 200 large tents.

Denmark - contributed \$30,534 to the PNRC.

Finland - gave \$100,000.

France - donated \$17,331 to the PNRC.

Germany - donated relief supplies worth \$57,692, along with \$150,427 to the PNRC.

Japan - donated cash and relief items and provided technical assistance, including mudflow early warning systems and expert survey teams for mudflows, flood control, volcanic monitoring, and communications. Total assistance was valued at \$1,500,000. Japan also planned to send experts to help the GOP develop resettlement plans and to assist with infrastructure rehabilitation.

Korea, Rep. - provided \$100,000.

Netherlands - donated \$76,923.

New Zealand - gave \$30,769.

Norway - provided \$227,906 to various relief organizations.

Saudi Arabia - contributed 140 tons of food and three mobile clinics.

Singapore - donated 250 large tents and 100 small tents.

Spain - gave 20 tons of canned food and other relief items, all valued at \$309,735.

Sweden - gave \$307,692 to the PNRC and \$30,769 to Scandinavian Children Mission.

Thailand - contributed \$77,973, as well as medicine worth \$116,959 and rice valued at \$148,148.

United Kingdom - channeled \$271,902 through various NGOs.

Non-Governmental Organizations

Caritas/Germany - donated \$55,556.

Caritas/Norway - gave \$78,459

Danchurchaid - contributed \$15,267.

Diakonisches Werk - provided donations totaling \$289,619 through several other NGOs.

Enfant et Developpement (EED) (France) - working under the EC, carried out a food-for-work program in Angeles City. A total of \$64,248 had been appropriated by EED as of Aug. 30 for clearing, rehabilitation, and health services.

Japanese club in Manila - gave \$38,462.

Red Cross Societies from Australia, Brazil, Canada, Finland, the United Kingdom, Iceland, Japan, Korea, Rep., Norway, and Sweden donated a total of \$694,782.

THAILAND - Accident

Date: March 2, 1991

Location: Bangkok; Klong Toey port area

No. Dead: At least 9

No. Affected: More than 15,000 residents of Klong Toey suffered some ill-effects; some 5,000 were left homeless

Total USG Assistance: \$62,985

The Disaster

A series of explosions ripped through warehouses at Bangkok's main port on the morning of March 2, leaving at least five people dead and many more injured. Highly volatile chemicals stored in a warehouse at the Klong Toey port apparently ignited spontaneously when exposed to heat on a particularly warm day. The initial explosion set off a chain reaction in the warehouse and in two adjacent buildings. A slum neighborhood (Koh Lao) near the port was completely destroyed by the ensuing fire which smoldered for hours. The local fire department was unable to control the blaze because of a lack of appropriate material to extinguish a chemical fire. Also, the nature of the chemicals was not known. The use of water to attempt to put out the fire only exacerbated the situation, creating more explosions and fire. At least three chemical fires had occurred in the same area during the preceding 20 months. Since many of the commercial chemicals unloaded at the port and stored in warehouses are never claimed by local consignees, and some are apparently waste chemicals, port authorities find it difficult to identify the chemicals.

More than 5,000 residents of the Koh Lao community lost their homes and all their belongings in the fire. A potentially more serious consequence of the disaster, however, was the threat to public health posed by the release of unknown chemicals. All of the deaths and most of the serious injuries following the explosion occurred in the residential area close to the chemical storage areas; however, residents further away in the Klong Toey community also became ill. According to initial estimates, more than 50% of the 30,000 residents of Klong Toey suffered some ill-effects, many of them requiring medical attention at nearby hospitals. Symptoms included red, watery eyes, skin rashes, chest

pain, dizziness, and respiratory difficulties. At least four more deaths were attributed to the disaster, when an infant and three adults who had been exposed to large amounts of burning or spilled chemicals died on March 21.

Action Taken by the Royal Thai Government (RTG)

Government agencies responded promptly to the victims' needs, providing medical attention, food, and clothing at the scene. The RTG Ministry of Public Health (MOPH) established clinics in Klong Toey and conducted door-to-door surveys to identify survivors in need of medical treatment or evaluation. Realizing deficiencies in the MOPH to assess health effects of the chemical release, officials requested USG technical assistance in identifying the agents involved and in monitoring the effects on people exposed to chemicals by inhalation of smoke, including the potential damage to unborn infants.

Over 650 families were evacuated from the contaminated area and removed to a tent camp about one kilometer away. Materials to construct new dwellings for the homeless were to be provided by the Bangkok Metropolitan Authority, the port authority, and the Thai military. Publicity surrounding the explosion and fire prompted a generous outpouring from private citizens and public institutions to meet emergency needs of the victims.

Assistance Provided by the U.S. Government

U.S. Ambassador Daniel A. O'Donahue made a disaster determination on March 4 and released \$25,000 under his Disaster Assistance Authority to respond to the immediate needs of victims of the explosion and fire. The Mission Disaster Relief Officer (MDRO) made multiple visits to the disaster site, meeting with senior staff of the Director General of the Department of Social Welfare to discuss emergency needs of the victims. On March 25, the MDRO and a USAID public health officer met with physicians from the Thai Ministry of Public Health, who issued an official request for USG technical assistance in identifying the chemicals and evaluating the medical needs arising from the disaster.

The request was relayed to OFDA, which arranged to send a health/environmental team to Thailand from the United States. The team, comprising four officers from CDC with experience in environmental health and toxicological testing and two scientists from the Environmental Protection Agency (EPA) with expertise in environmental sampling methods, began its investigation on April 8. OFDA funded the travel expenses of four team members (\$29,440), and CDC paid travel costs of the other two technical experts (\$8,545).

The CDC/EPA team worked closely with the MOPH to collect information and specimens and develop a surveillance system for disaster-related deaths and injuries. The team also set up studies to evaluate chemical risks in Thailand, in order to help prevent future disasters. While air, soil, and water samples were collected for laboratory analysis, the team found that characterizing air quality at the time of the explosion was nearly impossible because of the amount of time that had elapsed since the incident. Moreover, data generated by the sampling did not support earlier theories regarding the respiratory and dermal symptoms exhibited by the affected population.

The team's recommendations are briefly summarized below. The reader is referred to the CDC and EPA reports on file at OFDA for more detailed information.

—Since first responders play a crucial role in controlling chemical disasters, firefighters should be trained in hazard recognition, protective measures, decontamination procedures, and innovative firefighting techniques for chemical incidents. Ideally, a Hazards Material Response Team for the port storage area should be trained.

—Because collecting environmental samples, particularly air samples, is time critical after a chemical incident, the training of personnel for this aspect of response is vital.

—Plants that store or use large quantities of hazardous or flammable chemicals should be sited at a safe distance from populated areas. Communities should be informed of the nature of chemicals in storage areas nearby and able to participate in decision-making

regarding zoning regulations. Communities should also be made aware of available emergency plans.

—The responsibility for overall control of accidents resulting from hazardous chemicals should be better coordinated in Thailand. (It is now distributed across several agencies.) The RTG should establish fundamental administrative and legislative guidelines for chemical accident preparedness and response. A planning committee should also be established to develop emergency response procedures.

—A database should be developed from an accident reporting system to help identify situations prone to accidents. A national map showing the distribution of potential accident sites could facilitate the identification of areas deserving priority for inspection and control activities.

—There is need for enhanced laboratory capabilities and better analytical methodologies in the Thai Division of Environmental Health and the Division of Toxicology. An epidemiologist from the Division of Epidemiology should be trained in environmental epidemiology. A scientific advisory body should also be established to promote research in epidemiology and toxicology, and to serve in an advisory capacity to decision-makers in environmental health.

<i>Total OFDA Assistance</i>	\$54,440
<i>Total Other USG Assistance</i>	\$8,545

TOTAL	\$62,985
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OTHER ASIA DECLARED DISASTERS

AFGHANISTAN - Earthquake/Floods

On Feb. 1, 1991, an earthquake measuring 6.8 on the Richter scale shook northeastern Afghanistan and Pakistan causing extensive damage. Subsequently, heavy rain and an early melt of the winter snowpack released disastrous floods on the southern and western provinces of Afghanistan (see "Pakistan Earthquake").

The quake rocked the north and south sides of the Hindu Kush, reportedly killing 130 persons and displacing 1,440 families. The devastating floods, described by some Afghans as the worst in living memory, killed an estimated 415 people and destroyed homes and public buildings, displacing thousands of families. An estimated 90,000 people were affected by the two disasters.

The deluge submerged roads and demolished bridges, further complicating relief efforts by rendering villages and victims inaccessible. According to UNDR0 reports, the floods destroyed dams and irrigation systems, and damaged water sanitation systems, leaving potable water in short supply in certain areas. Cascades of water also drowned livestock, and destroyed crops, and topsoil.

U.N. organizations, including UNOCA, UNDP, UNICEF, and WFP, led the relief effort, sending assessment teams into the southern provinces of Helmand, Nimroz, Kandahar, and Farah to determine the extent of flood damage, and to identify relief supply routes. They distributed quilts, blankets, tents, tarpaulins, plastic sheeting, and food to earthquake victims in the northern provinces and delivered emergency food, shelter, medical supplies, and other relief supplies to flood victims in the southern and western provinces.

Normally, it is the responsibility of the U.S. diplomatic mission in country to determine whether a disaster warrants U.S. assistance. As there was no diplomatic representation in Afghanistan during the time of the disasters, Deputy Assistant Secretary of State Teresita Schaffer, responsible for Near Eastern and South Asian Affairs, declared on Feb. 21 that the damage caused by the earthquake and floods constituted a disaster, and released \$25,000 to the Office of the Aid Representative for Afghanistan. The money was used to purchase blankets, food, shoes, clothing, and other relief items for distribution through U.N. organizations.

Various international governments also contributed to the relief effort, including France, which donated medicine valued at \$201,941 and \$49,603 in cash; the former USSR which donated 8,000 MT of wheat and 500 MT of sugar; Japan, which donated blankets, tents, ground-sheets, and an emergency kit valued at \$113,636, and channeled \$113,636 through LRCS for victims in Afghanistan and Pakistan; and the United Kingdom which provided tents, blankets and other relief supplies valued at \$195,312, and provided \$12,367 to fund UNDR0 experts. Non-governmental organizations including Caritas/Germany, Edhi Trust, Oxfam/UK and the Kuwait Red Crescent, contributed tents, blankets, and other relief items. The total value of international contributions, governmental and non-governmental, as reported by UNDR0 was \$7,052,348.

TOTAL USG

\$25,000

BURMA - Fire

Fires ravaged the low income residential area in the central Burmese city of Meiktila from April 7 through April 8, 1991. The flames gutted about 5,125 houses, made approximately 25,275 people homeless, took 21 lives, and left 120 people with third degree burns. The fire also destroyed the city's infrastructure, disrupted electricity and water supplies, wrecked a railway station, and razed part of a market building and 11 schools. Total damage was estimated at \$80,256,826.

The Government of Burma (GOB) organized military and civilian authorities into a local relief team. The team's Central Relief Committee and Rehabilitation Supervisory Committee, together with the Ministry of Social Welfare's Relief and Settlement Department, provided fire victims with food, medicine, and cooking utensils, as well as cement, corrugated iron sheets, and nails to construct temporary housing.

U.S. Charge d'Affaires Franklin Huddle declared a disaster on April 9 and called for the release of \$10,000 under the U.S. Ambassador's Disaster Assistance Authority to support the relief effort. The contribution was channeled through the Myanmar (Burma) Red Cross, and UNDR0/UNDP to purchase food, and to fund other necessary relief assistance.

(\$31,746). Japan donated 1,000 blankets, 3,000 bars of soap, 3,000 towels, two medical kits, and 240,000 water purifying tablets, equivalent in value to \$120,000. Lastly, WVRD allotted \$42,000 for the provision of relief supplies and services.

TOTAL USG **\$6,000**

INDONESIA - Earthquake

According to UNDRO, on July 4, 1991, at 8:00 p.m., a 6.7 magnitude earthquake shook Kalabahi, the capital of the Indonesian island of Alor, located in east Nusa Tenggara Timor (NTT) Province. The same area was jolted five hours later by a powerful aftershock. The *Jakarta Post*, regency officials, and the Indonesian Disaster Management Center (IDMC) reported 28 deaths, 199 injuries, 1,000 homeless, and 15,000 affected persons out of Alor's population of 150,000. In addition, the temblor damaged 1,985 houses, 178 public buildings, and 79 churches and mosques. Total damage caused by the quake was estimated by the IDMC at \$5,128,200.

The Government of Indonesia (GOI) coordinated local humanitarian organizations, the private sector, and individual citizens to respond to the needs of the affected population in Alor. The GOI evacuated homeless victims to temporary shelters established in schoolyards. It also transported two doctors and several medical workers from Kupang, the capital of NTT Province, to provide badly needed medical services to the injured. A search and rescue team and 126 military officers were dispatched from Kupang and Dili, the capital of East Timor Province, bearing medicines and other emergency supplies to Alor.

According to the IDMC, the NTT local government's Department of Social Affairs donated 60 blankets, one ton of rice, and \$128 for the purchase of emergency food. In addition, NTT's Red Cross Office and other local public and private sources together provided \$89,460, 112 cartons of instant noodles, 32 tons of rice, 400 items of clothing, 160 blankets, as well as medicine, lanterns, and soap to the quake victims.

On July 9, 1991, U.S. Charge d'Affaires Richard L. Wilson declared that the damage caused by the earthquake constituted a disaster. On July 24, under the

U.S. Ambassador's Disaster Assistance Authority, the Charge released \$25,000 to the Indonesian Minister of Social Affairs for relief efforts.

CRS provided the GOI with 100 tons of USG-donated P.L. 480 Title II rice from CRS' pre-existing stocks in Kupang for emergency feeding programs. CRS was also involved in conducting needs assessments of the quake victims.

New Zealand contributed \$14,082 in disaster assistance to Kalabahi.

TOTAL USG **\$25,000**

MALAYSIA - Accident

On May 7, 1991, in Sungei Boloh, a chemical spill in an illegal fireworks factory set off a chain reaction throughout the factory. The spill occurred during an experiment conducted to create larger and more powerful fireworks. The subsequent industrial explosions and fires ripped apart the factory, flattened three city blocks, razed over 45 homes, and severely damaged another 150 dwellings. In the affected area, some 22 people were killed, 125 were injured, at least 15 were missing, and approximately 260 were left homeless.

The Malaysian Red Crescent Society (MRCS) coordinated the Government of Malaysia (GOM)'s relief effort. Immediately after the explosion, the MRCS responded by dispatching four ambulances, two land cruisers, one flatbed truck, and 40 MRCS medical workers to transport the dead and injured to the General Hospital at Kuala Lumpur. A nine-person MRCS team set up an emergency center to provide on-site first aid services. The MRCS's mobile information and mobile canteen units supplied the disaster victims with food, clothing, blankets, and other items. The Sungei Buloh School System and the Selangor Information and Welfare Departments also participated in the relief effort.

Determining that the calamity warranted USG assistance, on May 9, 1991, U.S. Ambassador Paul M. Cleveland contributed \$9,088 under his Disaster Assistance Authority, through the MRCS, to the fire victims.

Other emergency contributions from clubs, organizations, firms, foreign governments (approximately \$48,793), and from public collection boxes at the disaster site and at nearby shopping centers (about \$9,418), totaled \$58,211.

TOTAL USG **\$9,088**

PAKISTAN - Earthquake

On Feb. 1, 1991, an earthquake measuring 6.8 on the Richter scale shook northwestern Pakistan, primarily affecting Malakand, the upper and lower Chitral valley, and the districts of Bajaur, Dir, and Swat. The earthquake, whose epicenter was in the Hindu Kush mountain range in northeast Afghanistan, struck at 4:04 a.m. local time, and lasted for almost one minute (see "Afghanistan - Earthquake"). According to Government of Pakistan (GOP) estimates, 204 died and 638 were injured as a result of the earthquake (UNDRO estimated the death toll at 300). Approximately 3,800 livestock also perished.

A week of heavy snow and rain following the quake complicated immediate damage assessment and relief efforts. Final assessments revealed little reported damage to government buildings, including schools, hospitals, and public buildings, which were constructed to withstand earthquake damage. Private homes did not fare as well. Traditional village houses in Pakistan, built from uncut stone and mud, and highly susceptible to earthquake damage, could not withstand the tremors, and 7,000 houses were destroyed, and over 42,000 damaged. Area power supplies were cut, and communication lines were damaged by the earthquake and the heavy snowfall. No severe damage was reported in the capital city, Islamabad.

On Feb. 2, the GOP called for donations to the prime minister's disaster relief fund, established to help earthquake victims. The GOP distributed blankets, tents, and medicine from federal reserves to the affected provinces. The day after the quake, the prime minister visited Chitral and Bajaur, and announced that the GOP would provide funds for family members and property lost in the quake. The GOP distribution included \$904 per family that suffered a death of one of its members, \$1,130 per family to rebuild destroyed homes, and \$23 for each head of cattle lost. The GOP believed that

grants to rebuild homes and the provision of cement, sand, bricks, and other material would result in the construction of earthquake-resistant houses. The total rehabilitation bill was estimated at \$32 million.

As a result of the earthquake, U.S. Ambassador Robert Oakley declared a disaster in Pakistan on Feb. 4, 1991, and allocated \$25,000 to the prime minister's emergency relief fund. Major international players in the relief effort were the EC, Japan, UNDP, UNDRO, and WFP, which participated in a joint assessment of the affected areas. These aforementioned groups contributed the following: UNDP donated \$50,000; UNDRO gave \$30,000; WFP gave 600 MT of wheat, valued at \$120,000; the EC contributed \$700,000 in emergency aid for Pakistan and Afghanistan, of which about \$140,000 was used to purchase and distribute tents, blankets, and other equipment to homeless people in Pakistan; and Japan gave relief supplies and cash through LRCS for earthquake victims in Pakistan and Afghanistan (see "Afghanistan - Earthquake"). The total value of international contributions, governmental and non-governmental, as reported by UNDRO was \$1,377,910.

TOTAL USG **\$25,000**

PEOPLE'S REPUBLIC OF CHINA- Typhoons

A series of eight typhoons caused widespread damage in six of China's east and southeast provinces during July and August 1990. Fujian and Zhejiang provinces were hit with particular severity. However, damage was also extensive in the provinces of Anhui, Guangdong, Hainan, and Jiangsu, and in Shanghai City. According to the government's Ministry of Civil Affairs, the storms killed 559 people and injured another 2,983. Some 340,000 homes were destroyed and 1,164,000 dwellings were damaged, affecting an estimated 7.5 million people. The economic losses caused by the typhoons were estimated at over \$1.2 billion.

The Government of the People's Republic of China (GPRC) indicated that it would welcome international assistance to alleviate the suffering of the storm's victims. The GPRC cited the need for grain, tents, blankets, and bleaching powder for emergency relief, and building materials for rehabilitation and reconstruction.

On Sept. 19, U.S. Ambassador James R. Lilley responded with a disaster declaration and, under his Disaster Assistance Authority, donated \$25,000 to the relief effort. A check for that amount was presented to the GPRC Deputy Director of the Department of International Relations for the Ministry of Foreign Economic Relations and Trade, who stated that the funds would be used for the purchase of food and clothing. *(Note: Because of transmission problems, the declaration cable for this disaster was not received by OFDA until Nov. 7, 1990; hence, funding was from FY 1991 accounts.)*

TOTAL USG \$25,000

SRI LANKA - Floods

A series of violent and prolonged rainstorms from May 31 through June 5, 1991, resulted in widespread flooding, especially in the Galle, Kalutara, Colombo, and Gampaha districts in the southern part of Sri Lanka. Inundations caused by this southwest monsoonal rain adversely affected over 20,000 families, and killed 12 people. Most deaths were caused by drowning or by houses caving in and burying their inhabitants alive. Hundreds of buildings collapsed, and several roads were badly damaged from being under 1.2 meters of water. Due to the dangerously high water level, fishermen of the western and coastal areas were warned to stay away from the sea for several days.

The Government of Sri Lanka's Department of Social Services supplied all flood survivors with dry rations, and Sri Lankan Red Cross volunteers gave relief aid to victims in the Galle and Kalutara districts.

U.S. Charge D' Affaires Donald B. Westmore issued a disaster declaration on June 6, 1991 and donated \$25,000 to provide medical supplies, food, clothing, and transportation to those affected by the floods.

TOTAL USG \$25,000



Mounds of volcanic debris outside a home in Concepcion City, the Philippines
Photos by Raymond Dionne, AID/EHA/OEDA

Aerial view of river course near Mt. Pinatubo shows washed out bridge



Check dams built to slow and channel the debris flow from lahars, the Philippines



OFDA plastic sheeting is used as roofing material by Filipino family displaced by Mt. Pinatubo's eruption
Photo by Larry Birch, AID/PREH,PS



A woman dips water from the muddy floodwaters surrounding her home in Cambodia
Photo courtesy of U.S. Committee for Refugees



Mrs. Marilyn Tucker Quayle helps out at a CARE distribution center in Bangladesh
Photo by Patrick W. Moore



A mother sits with one of her surviving children in a shelter in Bangladesh. She lost her husband and two children in the cyclone.
Photo by Patrick W. Moore

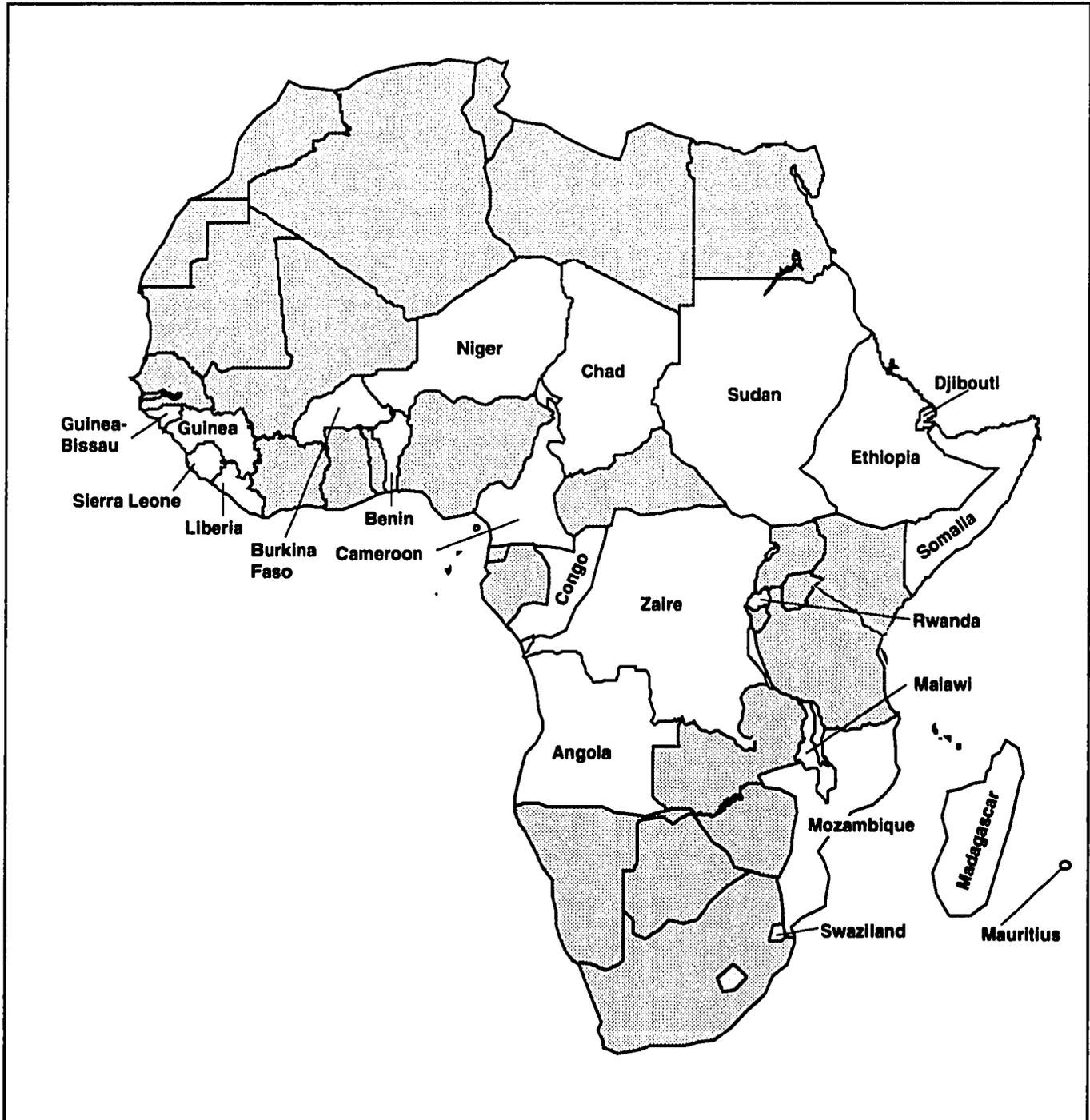


Children resting after the trauma of the Bangladesh cyclone
Photo by Patrick W. Moore

54

Africa

Africa



ANGOLA - Displaced Persons

Date: 1990 - 1991

Location: Displaced persons were dispersed throughout the entire country, but highest numbers reported in the provinces of Cuanza Sul, Huila, Benguela, Huambo, Moxico, Uige, and Cuando Cubango.

No. Dead: Unknown

No. Affected: Total number of people requiring emergency assistance estimated at 1,377,000, consisting of 827,000 internally displaced persons, 300,000 Angolan refugees, and 250,000 demobilized military personnel and their families.

Total USG Assistance: \$28,753,462

The Disaster

The war between the Government of the People's Republic of Angola (GPRC) and the insurgent National Union for the Total Independence of Angola (UNITA) finally came to an end in May 1991. The 16-year civil conflict had a devastating impact on the people and economy of Angola. The United Nations estimated that since 1980, over 500,000 Angolan children had died directly or indirectly as a result of the war. In 1991 Angola had one of the highest child mortality rates in the world, with an estimated 292 out of every 1,000 children dying before the age of five. Furthermore, approximately 50,000 children were abandoned or orphaned by the war. Over one million people fled from their homes to escape the constant fighting. Most lived in squalid, overcrowded refugee camps in Zaire, Zambia, Namibia, or amongst the internally displaced. The United Nations estimated that the war cost Angola over \$20 billion in damage.

The war also devastated Angola's once bountiful agricultural sector. Most of the more than one million persons displaced from their land were farmers. The war disrupted local commerce and transport and destroyed much of the nation's road and railway network. In addition to the effects of civil war, a four-year drought cycle (1986-1990) drastically reduced domestic food production throughout the country. Despite adequate rains during the 1990-1991 rainy season, a shortage of

seeds and other agricultural inputs resulted in another below normal harvest.

At the end of 1990, the United Nations estimated that 1.9 million Angolans required emergency assistance. With the end of the war and the return of the rains, the United Nations revised its estimate for the affected population to include 827,000 internally displaced Angolans, 300,000 refugees expected to return to Angola, and 250,000 demobilized soldiers and their families in need of short-term or medium-term assistance in order to return to their places of origin or resettle in more productive areas.

Relief Efforts

After months of negotiations with the two warring parties, the United Nations announced that the Special Relief Programme for Angola (SRPA) had been accepted by the GPRC and UNITA in October 1990 (see *FY 1990 OFDA Annual Report*). This cleared the way for the implementation of cross-line and cross-border relief operations under the auspices of the United Nations. The NGOs working in Angola had to sign letters of association with the United Nations before they could participate and transport supplies under the SRPA aegis. In November 1990, the first U.N.-flagged convoy carrying relief supplies arrived in Huambo province. U.N. officials coordinated with UNITA and the GPRC to ensure that U.N.-flagged relief convoys were not attacked and roads were de-mined.

The ICRC had already begun its own relief operations, independent of the SRPA, sending relief convoys and transporting food and supplies from Lobito and Windhoek, Namibia, to several locations in GPRC and UNITA-held territory. The ICRC also commenced cross-line airlifts of relief supplies using Twin Otter aircraft. Between October and early December, ICRC succeeded in delivering several hundred tons of food and supplies, including 120 tons of relief supplies into UNITA territory. In early December, however, UNITA revoked ICRC's cross-line and cross-border privileges to deliver relief supplies into contested areas.

On Dec. 21, the GPRC informed the U.N. Special Coordinator for the SRPA that all cross-line and cross-border relief operations were to be suspended due to a UNITA attack on a bridge in Huila Province that was

being used by both relief convoys and GPRA military trucks. The GPRA suspended the SRPA just before the first U.N.-flagged convoy was to depart for UNITA territory. Months passed without any progress towards the resumption of the SRPA. The United States and several other donors temporarily halted the purchase and shipment of all food to Angola in an effort to pressure the GPRA to acquiesce. The United Nations unsuccessfully sought concessions from both sides in an effort to resume operations. Meanwhile, political negotiations were taking place in Lisbon, Portugal, between the GPRA and UNITA, with the facilitation of the governments of Portugal, the United States, and the former Soviet Union. Finally, on March 28, the SRPA officially resumed when four convoys carrying relief supplies were permitted to start out for affected areas in both GPRA and UNITA territory. CARE, WVRD, and IMC were permitted to transport food and relief supplies aboard U.N.-flagged convoys and aircraft to both sides of the conflict.

On May 31, President Jose Eduardo dos Santos of the GPRA and Jonas Savimbi, leader of UNITA, signed a peace agreement, ending the 16-year civil war. The accords called for the establishment of a unified armed force, a multiparty system, a market economy, and free elections to be held in late 1992. In June, the USG opened the U.S. Liaison Office in Luanda to assist in the monitoring of the ceasefire as a participant on the Joint Political and Military Commission. With the successful enforcement of the nationwide ceasefire, cross-line and cross-border relief operations accelerated. Nevertheless, the initial momentum had been lost, and SRPA fell far short of its food delivery goals. Between July and October, SRPA reported that only 7,500 MT of relief supplies were delivered by road and air under the U.N. program. The movement of thousands of internally displaced persons further complicated the targeting of affected populations. Another affected group was created when approximately 250,000 soldiers and dependents, who had belonged to the GPRA and UNITA armed forces, were suddenly "demobilized" and required food, shelter, and relief supplies. On Oct. 3, the United Nations launched a special appeal for \$27.3 million to specifically address the needs of the demobilized military personnel.

Assistance Provided by the U.S. Government

On Oct. 2, 1990, Assistant Secretary of State for African Affairs, Herman J. Cohen, issued a disaster declaration for Angola for the third year in a row. To show its support of the SRPA, OFDA immediately allocated \$500,000 to UNICEF, \$500,000 to WFP, and \$300,000 to UNDP for each of their emergency assistance programs in Angola. OFDA also allocated grants to six U.S. PVOs working under the SRPA umbrella. Africare operated a supplementary feeding project in Cuanza Sul Province, displaced persons resettlement programs in Bie and Cuanza Sul, and an orphan assistance project. In Benguela Province, CRS managed a food distribution program in cooperation with local Catholic organizations. IMC transported and distributed food, seeds, and tools, managed a well drilling project, and conducted an expanded immunization program in Cuando Cubango. CARE delivered food to affected areas in Huila and Cuando Cubango provinces, while WVRD also transported and distributed food and relief supplies into southern Angola. Finally, Air Serv provided air service to transport personnel and goods under the SRPA aegis. The suspension of the SRPA severely delayed critical deliveries of food and seeds during the "lean" planting season of December through March. Once the SRPA was reinstated, poor road conditions in the southeastern region of the country necessitated that OFDA fund expensive airlifts of supplies for IMC, WVRD, and CARE from staging points in Namibia.

In June, OFDA hired veteran relief consultant, Dwight Swartzendruber, to serve as an emergency and disaster relief coordinator based in Windhoek, Namibia. His role became increasingly valuable to OFDA in reporting on developments from the field, and facilitating coordination between U.N. agencies in Luanda and Windhoek and various NGOs and donor organizations. OFDA also hired consultant Charles Smith to evaluate various logistical options into southern Angola. In addition, a water engineer was hired to assess potable water needs in the area around the town of Jamba, prior to implementation of the IMC well drilling project.

In FY 1991, FFP allocated 9,346 MT of food to CRS, 6,600 MT to WVRD for its food distribution program, 9,465 MT to CARE for distribution in southern Angola, and 1,562 MT set aside for the International Emergency

Food Reserve. Total value of the 26,974 MT of food and transport was \$15,102,000.

RP contributed \$595,750 to ICRC for its orthopedic and prosthetics program for war-injured refugees and amputees.

OFDA Relief Coordinator \$98,854

Travel expenses \$960

Total OFDA \$13,055,012

Total FFP \$15,102,000

Total RP \$595,750

Summary of USG Assistance

TOTAL

\$28,752,762

OFDA Assistance

Grant to UNICEF \$500,000

Grant to WFP \$500,000

Grant to UNDP \$300,000

IMC immunization project \$1,265,956

IMC seed and tools project \$1,744,642

IMC emergency airlift \$1,059,910

IMC well project \$557,052

Grant amendment to CRS \$731,973

Grant to Air Serv \$396,540

Africare Cuanza Sul supplementary feeding project \$236,908

Africare Waku Kundu DP project \$468,811

Africare Bie DP resettlement program \$341,168

Africare orphan assistance project \$189,000

CARE food distribution projects \$1,915,566

WVRD food/seeds/tools distribution projects \$2,712,722

Logistical Assessment mission \$19,943

Water Assessment mission \$15,007

Assistance Provided by U.S. Voluntary Agencies

ADRA - distributed clothing to displaced persons and amputees.

Africare - managed four relief projects in Angola: daily supplementary feeding to children and pregnant women in Cuanza Sul; assistance to displaced persons in a Waku Kundu area of Cuanza Sul; distribution of food, blankets, and basic necessities to approximately 4,000 war orphans; and assistance to displaced persons in Bie Province.

CARE - transported and distributed food to affected populations in southern Angola.

CRS - delivered food in Benguela Province, in cooperation with local Catholic organizations.

IMC - directed four relief activities in Cuando Cubango Province: airlifted seeds, tools, food, and medicine from Namibia into towns of Likuwa and Luiana; distributed seeds and tools to 20,000 displaced families, along with food supplied by WVRD and CARE; administered 50,000 immunizations for measles, polio, diphtheria, pertussis, and tetanus; and drilled wells to provide potable water to the Jamba area.

LWR - assisted displaced persons in Moxico and Lunda Sul provinces.

WVRD - airlifted or trucked in food from Namibia into Huambo and Cuando Cubango Provinces, and distributed the food and seeds, tools, blankets, and clothes in both locations.

Assistance Provided by the International Community

International Organizations

EC - provided 4,320 MT of food, valued at \$760,000, for distribution by German Agro-Action and \$1,590,000 for transport costs. This aid was given in conjunction with the German government. EC also gave a grant of \$903,500 to ICRC to assist its program of delivering food and other supplies in southern Angola.

ICRC - distributed 7,850 tons of food and supplies to over one million people in southern Angola. The ICRC program was valued at \$16,162,000. In addition, ICRC provided 200,000 people with seeds and tools, and 880,000 people in the Planalto with non-food support services.

UNICEF - donated \$210,000 to its relief and survival programs and \$483,000 to public health and nutrition programs.

UNDP - provided technical assistance in support of the SRPA.

WFP - provided 30,942 MT of food, valued at \$6,160,000, and \$13,050,000 to pay for transport costs.

Governments

Australia - provided \$23,000 to UNICEF for water programs and donated \$20,000 to CARE for its food security project.

Canada - contributed 13,200 MT of food aid (valued at \$9,000,000) and gave grants to Canadian NGOs working in Angola; donated \$813,000 to UNICEF; and provided \$480,000 for communications equipment in support of the SRPA.

Cyprus - gave \$1,000 to UNDP to support needs assessments.

Denmark - contributed 470 MT of maize meal through WFP.

Finland - provided \$724,000 to UNICEF.

Germany - donated 4,320 MT of maize in conjunction with the EC, provided \$124,200 to UNICEF, and

\$1,590,000 for logistic support to German Agro-Action working in Cuanza Sul.

Ireland - gave \$88,000 to UNICEF.

Italy - contributed \$2,300,000 in food aid through WFP and \$4,830,000 for transport costs.

Japan - provided 6,000 MT of rice, valued at \$2,000,000, through WFP and \$1,294,800 to UNICEF.

Liechtenstein - donated \$25,000 in support of the SRPA.

Mauritius - gave \$5,000 in support of the SRPA.

Netherlands - gave \$1,660,000 to WFP for food transportation costs and \$1,195,000 to UNICEF.

Norway - donated \$250,000 to WFP to pay for food storage; \$89,000 to UNICEF; \$100,000 in support of the SRPA; \$170,000 to the Norwegian Red Cross; and \$393,000 to Norwegian Peoples Aid.

South Africa - provided 40 MT of dried skim milk through WFP.

Sweden - contributed \$2,160,000 to WFP; \$540,000 in support of airlifts; \$3,235,800 to UNICEF; and \$1,170,000 to UNDP.

Switzerland - donated \$560,000 to WFP for road and railroad repair and \$271,400 to UNICEF.

United Kingdom - provided 1,800 MT of maize meal, valued at \$1,060,000 to WFP; \$200,000 to Oxfam/UK; \$900,000 to UNDP; and \$500,000 to UNICEF.

Zimbabwe - contributed 25,000 MT of maize, valued at \$3,500,000 to WFP.

Non-Governmental Organizations

Canadian Council of International Cooperation (Canadian NGO consortium) - donated maize, rice, sugar, cooking oil, and saucers to drought victims.

CARE International - distributed food provided by Australia, Canada, the United States, and Zimbabwe to victims in Huila, Namibe, Cunene, and Cuando Cubango.

German Agro-Action - distributed food and relief supplies, primarily in Cuanza Sul.

Hilfe in Not (German NGO) - transported approximately 3,500 MT of food through Namibia into UNITA territory, without obtaining permission from the Namibian Government.

LWF - distributed blankets and other relief supplies in Moxico.

MSF/Belgium - distributed supplementary food and medicines in Moxico and Bie.

MSF/Spain - donated medical supplies in Huila and Cunene provinces.

Norwegian Peoples Aid - managed food-for-work project in Cuanza Sul.

SCF/UK- distributed food in Huambo Province.

BURKINA FASO - Drought

Date: 1990 - 1991

Location: 17 out of 30 provinces, especially the provinces of the central plateau

No. Dead: Not reported

No. Affected: Approximately 2.6 million small-holder agriculturalists and agro-pastoralists

Total USG Assistance: \$12,587,400

The Disaster

During the period 1990 to 1991, sparse rainfall in the central and eastern provinces of Burkina Faso, and grasshopper infestations in the northern provinces, precipitated the nation's second consecutive year of food shortage. The Ministry of Agriculture reported that due to the drought the country's official cereal production deficit for 1990-1991 was 360,000 MT, 260,000 MT higher than the 1985-1989 average of 100,000 MT.

Although 17 out of 30 provinces in Burkina Faso were in deficit during the 1990-1991 period, this food shortage was particularly evident in 11 provinces of the densely populated central plateau which had already suffered a below average cereal production during 1989-1990. The hardest hit of the central provinces were Yatenga and Soum. An estimated 2.6 million small-holder agriculturalists and agro-pastoralists (85% of the population in those 11 provinces), of whom 1.2 million were young women and children, were adversely affected by the drought. Of that total, approximately 25,000 people (10% of the population) in Yatenga and Soum were in particularly dire straits.

The affected populations were left extremely vulnerable to famine, given that their household income/purchasing power had been severely eroded for two consecutive years by the following conditions. Drought and grasshopper infestations had led to very poor crop harvests for these farming peoples, forcing them to pay extremely high prices for the low supply of cereal available on the local market, in order to feed their families. As if that were not enough of a burden to bear, the health of their animals had greatly deteriorated due to insufficient water and pasture. Given that the demand

for such sickly animals was low, the agro-pastoralists experienced rapidly plummeting prices for the livestock sold for a living. The adverse impact of the aforementioned factors on agro-pastoralists was particularly severe, since the local terms of trade consist of the quantity of millet that can be purchased from the proceeds of the sale of one goat.

Action Taken by the Government of Burkina Faso (GOBF) and Non-Governmental Organizations

On Dec. 5, 1990, the Secretary of State for Social Actions in the GOBF convoked international donors to announce that a national catastrophe existed in Burkina Faso and to request international aid. The GOBF's National and Provincial Drought Commissions, composed of officials from the ministries of Agriculture, Planning, Commerce, Health, Water Resources, and Social Action, as well as local organizations concerned with assistance issues, were to head the emergency program. The local Baptist Mission covered approximately \$81,600 in transportation costs. These costs were associated with the delivery, distribution, and storage of a maximum of 12,000 MT of sorghum from the GOBF/OFNACER (National Cereal Office) food security stocks to about 70,000 to 100,000 persons in food-deficit areas of the country. By July 15, 1991, other local NGOs had distributed about 4,455 MT of food to destitute people.

Assistance Provided by the U.S. Government

U.S. Ambassador Edward P. Brynn and other U.S. embassy officials visited the affected areas in mid-December. Based on the U.S. team's findings, and in response to the GOBF's appeal for international assistance, Ambassador Brynn declared the situation to be a national calamity on Dec. 19, 1990, warranting USG assistance, and released \$25,000 to the Burkinabe Children's Educational and Nutritional Centers. The funds were used for the local purchase and distribution of 11 MT of vitamin-enriched infant food to provide two meals daily over a period of three to five weeks to 114,000 infants and children (ages four months to five years) in the five highest at-risk provinces: Bam, Yatenga, Soum, Sanmatenga, and Passore.

FFP delivered 25,756 MT of Section 416 sorghum worth \$7,974,600, along with sorghum provided by WFP and the GOBF, to about 2,133,759 people in eight drought-affected provinces: Boulkiemde, Soum, Sanmatenga, Nahouri, Bam, Sourou, Gnagna, and Passore. In addition, a combined total of 9,745.9 MT of P.L. 480 Title II cornmeal, vegoil, wheat, and pinto beans, valued at \$4,587,800, was channeled through CRS for Burkina Faso. The P.L. 480 food was transferred through a government-to-government free distribution program. Consequently, the GOBF was responsible for transport, storage, handling, and supervision of the distribution of the donated food.

Germany - supplied 10,000 MT of sorghum worth about \$3,023,432.

Italy - made available counterpart funds for the local purchase of 2,476 MT of cereal grains.

Japan - gave 1,636 MT of rice.

Switzerland - provided 2,000 MT of sorghum and approximately \$1,277,955 for local purchases and transportation.

Total OFDA \$25,000
 Total FFP \$12,562,400

TOTAL \$12,587,400

Assistance Provided by U.S. Voluntary Agencies

Africare, CRS, and SCF/US provided food transportation and distribution services in Burkina Faso. CRS distributed over 9,000 MT of P.L. 480 Title II food for school feeding and food-for-work programs. Also, CRS together with Caritas/Belgium contributed 6,000 MT of sorghum.

Assistance Provided by the International Community

International Organizations

EC - allocated 8,000 MT of sorghum valued at \$3,973,000 for 500,000 drought victims in Souru, Passore, and Yatenga provinces.

UNICEF - furnished trucks for in-country food distribution.

WFP - supplied 10,272 MT of assorted cereal for its program already in progress and 6,000 MT of cornmeal for an emergency program.

Governments

Canada - furnished \$5,804,504.

France - sent 5,000 MT of wheat and 3,000 MT of white sorghum.

CHAD - Epidemic

Date: May 11 to September 18, 1991

Location: 12 of the 14 prefectures in Chad

No. Dead: 1,262

No. Affected: 12,204

Total USG Assistance: \$206,662

The Disaster

From May 11 through Sept. 18, 1991, the population in 12 of the 14 prefectures in Chad was plagued by a cholera epidemic that reportedly affected 12,204 people and caused 1,262 deaths. The highest incidence was in the capital city of N'Djamena.

Action Taken by the Government of Chad (GOC)

On May 16, 1991, the GOC issued an official appeal to governments and non-governmental organizations involved in Chad to provide desperately needed vaccines and epidemiological services to halt the spread of the disease.

The GOC received assistance from the army, the French military, and ESSO (a consortium of oil companies in Chad) who collaborated to airlift about 65 tons of supplies to prefectures made inaccessible by ground transportation due to the flooding of dirt roads caused by heavy rains.

Assistance Provided by the U.S. Government

Concluding that the magnitude of the calamity exceeded the GOC's ability to respond, U.S. Ambassador Richard W. Bogosian used his Disaster Assistance Authority, on June 14, 1991, to release \$25,000 in emergency assistance. The funds were allocated to UNICEF for the purchase of 7,500 liters of the rehydration medication, Ringer's lactate intravenous solution, with infusion sets, from the UNIPAC warehouse in Copenhagen. The Ambassador's Authority was later increased by \$1,618 to cover the cost of air freight and premium insurance.

USAID/Chad responded early on May 28, 1991, to the GOC's request, by providing P.L. 480 counterpart funds

for the establishment and one month's upkeep and operation of the first emergency cholera treatment center to be run by MSF. This assistance helped the understaffed and ill-equipped central hospital in N'Djamena cope with an increasing daily influx of cholera cases. OFDA later arranged with DOD to purchase and transport 46,284 liters of Ringer's lactate solution and 10,128 infusion sets and needles. OFDA's funding for this amounted to \$79,544, and DOD's share amounted to approximately \$100,500. USAID/Chad also paid for airline tickets for three members (expatriate and Chadian) of the local Cholera Treatment Committee to supervise and coordinate cholera treatment programs in several prefectures.

TOTAL USG

\$206,662

Assistance Provided by the International Community

EC - funded the purchase and transportation of two cholera kits as well as the establishment and operation of one cholera treatment center.

France - procured and provided air transport for several thousand doses of antibiotics and antiemetics, in addition to syringes, needles, and catheters.

Oxfam/UK - financed the installation and maintenance costs of one treatment center near N'Djamena.

LRCS - provided the affected Chadian population with rehydration salt packets, disinfectants, and soaps; trained and organized volunteers to teach personal and environmental hygiene; and financed latrine-building programs to minimize the risks of infection through contaminated human wastes.

Switzerland - donated and delivered 14,600 liters of Ringer's lactate solution, needles, catheters, infusion sets, and several large tents to be used as the treatment centers.

Swiss Tropical Institute - contributed medical supplies and personnel training to medical centers in the Chari Baguirmi Prefecture.

UNICEF - supplied 500,000 packages of ORT solution and funded cholera education campaigns.

WHO - supplied Chadians with disinfectants such as bleach, soap, and lime.

ETHIOPIA - Displaced Persons

Date: 1991

Location: Northern Ethiopia

No. Dead: Not reported

No. Affected: 400,000

Total USG Assistance: \$28,262,095

The Disaster

In the wake of Ethiopia's change of government and the end of civil war in May 1991, some 350,000 former soldiers and over 50,000 civilians were displaced in northern Ethiopia, and forced to migrate in search of food and shelter. Most people fled on foot to reception centers in Tigray, Wello, Gondar, and Shoa provinces, while some 52,000 people, mostly ex-soldiers and their families, sought asylum in the Kassala area in northeastern Sudan. By June, thousands of displaced people, including large numbers of former soldiers and released prisoners-of-war, had flooded into Addis Ababa, placing an additional burden on an already economically strained city. Many of the ex-soldiers arriving in Addis Ababa had serious war wounds, amputated limbs, and other handicaps. They were desperately poor and had to resort to selling the clothes off their backs and begging in order to survive.

For the new interim Government of Ethiopia (GOE), led by the Ethiopian People's Revolutionary Democratic Front (EPRDF), the highest priority on the relief agenda was the care, feeding, and eventual reintegration of the ex-soldiers, who represented a serious and potentially destabilizing threat to the new regime. The GOE and the international relief community were concerned about how these people would be integrated into an economy that had been severely weakened by prolonged war and consecutive droughts.

The Relief Effort

ICRC and the Ethiopian Red Cross Society (ERCS) took primary responsibility for providing emergency food to displaced ex-soldiers and their families in transit camps, and in their home villages. Food was shipped by plane and truck to transit centers in Mekelle, Gondar, Bahir Dar, Addis Ababa, and other locations. The U.N. airlift

played a critical role in facilitating the distribution of the emergency food supplies (see "Ethiopia-Civil Strife/Drought".) ICRC, in cooperation with Ethiopia's Ministry of Health and medical personnel from several foreign Red Cross Societies, also provided surgical teams to hospitals with large numbers of ex-soldiers.

As of the end of November, the ICRC had returned over 250,000 former soldiers to their home towns, completing the second phase of the repatriation and assistance program begun in June. A total of 25 local ERCS food distribution points were established to provide temporary food assistance to ex-soldiers returning to their homes. Donors estimated that an additional 100,000 ex-soldiers, who were not registered by the government nor covered by the ICRC/ERCS program, would be in need of relief assistance once they returned to their villages. The circumstances under which this group of soldiers "demobilized" are unclear. It was believed that some were long term deserters, some left their units at the end of the war, and others wandered home as their units collapsed after Mengistu's fall.

UNHCR coordinated an airlift, lasting from July 29 to Nov. 21, which repatriated almost 51,000 refugees who fled to Sudan during the last days of the Mengistu regime. A total of approximately 45,500 former officers and soldiers and 5,000 dependents were flown to Addis Ababa, where they were registered and assisted in returning to their homes. Many refugees arrived in Addis Ababa needing medical attention, and 11 are known to have died after arriving in Ethiopia. The ICRC established a temporary field hospital at the transit center at the Addis Ababa airport to treat the sick and wounded.

Action Taken by the Interim Government of Ethiopia and Non-governmental Organizations

The EPRDF established a "demobilization" commission to help respond to the humanitarian crisis, and serve as a focal point for support from the international community. By the end of 1991, the commission had developed a strategy for reintegrating the ex-soldiers into their home communities.

Several government centers run by the Relief and Rehabilitation Commission (RRC) were established to care for ex-soldiers until they could be repatriated to

their villages. The Christian Relief and Development Association (CRDA) took the lead in coordinating NGOs to provide relief assistance to displaced civilians, although ICRC/ERCS and RRC centers also hosted civilians.

(Note: The DOD \$18 million figure is based on estimates that do not include the cost of several relief shipments transported by air and the cost of transport by sea of MRE shipments to Assab and Djibouti.)

Assistance Provided by the U.S. Government

In response to the emergency, DOD launched a three-month emergency program from June 8 to Sept. 11, delivering a total of 3.9 million MREs (meals ready to eat) and large quantities of other food and non-food supplies. These relief supplies were consigned to the ICRC, the RRC, and the CRDA for distribution to displaced persons in transit to their home areas. The MREs and relief supplies sustained many people pending return and reintegration. Total value of this DOD delivery program is estimated at over \$18 million.

On July 17, Charge d' Affaires Mark Baas declared a disaster due to the massive population displacement in the aftermath of Ethiopia's civil war. OFDA released \$25,000 (Ambassador's Authority) for the internal transport of emergency relief supplies to the affected populations. OFDA also donated 128 rolls of plastic sheeting (332,800 sq. ft.) and 1,000 blankets for ICRC emergency activities in transit centers. These commodities were transported by DOD aircraft from OFDA's stock pile in Leghorn, Italy, to Addis Ababa on July 20. The replacement cost of the plastic sheeting was \$37,095. Finally, OFDA gave a grant of \$5 million to WFP for a soldier re-integration program. Plans to use the grant funds to purchase vehicles for use in the re-integration program had not yet been finalized, as of the end of the fiscal year.

RP contributed \$4 million in response to the LRCS appeal for relief efforts in Ethiopia, much of which was targeted for the emergency program for displaced ex-soldiers and civilians. RP also gave \$1,200,000 to the ICRC for medical assistance to war victims.

Total OFDA	\$5,062,095
Total RP	\$5,200,000
Total DOD	\$18,000,000

TOTAL	\$28,262,095
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ETHIOPIA - Drought/Civil Strife

Date: 1990 - 1991

Location: Countrywide

No. Dead: Unknown

No. Affected: 6.5 to 7 million people

Total USG Assistance: \$141,809,020

General Situation

In 1991, the twin demons of drought and civil strife continued to cast their shadows over Ethiopia. Ironically, while the 1990 harvest was one of the best Ethiopia had ever produced, some areas of the north and east suffered major crop failures. After more than a decade of civil war, rebel forces succeeded in overthrowing the repressive Mengistu regime. However, the transition to the new government brought its own complications. After a brief respite, ethnic tensions which had been suppressed under the Mengistu regime began to erupt. Sporadic violence erupted in the south, the east, and the west, blocking normal commercial activity as well as delivery of relief supplies. The only area where conditions showed a slight improvement was the north, where the cessation of the fighting in Eritrea and Tigray removed a major obstacle to the free movement of relief supplies. As the interim government fought to establish its authority, other crises in the Horn, most notably in Somalia, provoked hundreds of thousands of refugees and returning Ethiopians to seek food and refuge in Ethiopia. The new government was also confronted with several hundred thousand former soldiers and their families who were left jobless and homeless by the downfall of the old regime (see "Ethiopia-Displaced Persons"). At the end of 1991, Ethiopia, which was already weak from years of drought and fighting, found itself struggling to meet these new challenges.

The Collapse of the Government of the People's Democratic Republic of Ethiopia (GPDRE)

In the fall of 1990, the civil war appeared as if it would continue forever. From October to December, Ethiopian Government troops faced their opponents, the Eritrean People's Liberation Front (EPLF) and the Tigrayan People's Liberation Front (TPLF) across relatively fixed lines. In December the GPDRE and the EPLF engaged

in heavy fighting, and, in February, the TPLF launched an offensive, forcing the GPDRE to retreat from areas it had always controlled. The fighting intensified through the spring, with the EPLF moving down the coast, and the TPLF closing in on Addis Ababa. In late May, President Mengistu fled the country, taking refuge in Zimbabwe. On May 28, the Ethiopian People's Revolutionary Democratic Front (EPRDF - a coalition led by the TPLF) entered Addis Ababa, and a few days later announced the formation of a provisional government. At the same time, the EPLF, which had pushed the GPDRE out of Eritrea earlier in May, established a provisional government in Eritrea. Both governments pledged their support for the continuation of relief efforts. However, the new government of Eritrea took steps to emphasize its independence which had negative repercussions on relief deliveries, such as imposing new controls on relief commodities at the ports of Massawa and Assab. The EPLF also expelled the ICRC from Eritrea in July, interrupting the emergency relief distribution and medical services the ICRC had been providing.

The Transitional Government

The interim government established by the EPRDF convened a conference of all the major political groups in Ethiopia in early July. The conference participants created a Representative Council to act as the legislative body for the transitional government, and determined the allocation of seats on the Council among the various political and ethnic groups in Ethiopia. In late July, the Council elected Meles Zenawi, a former leader of the TPLF, as the head of state and Chairman of the Representative Council. The EPLF and the transitional government of Ethiopia agreed to cooperate in several areas, including allowing goods for Ethiopia to pass through the EPLF-controlled ports of Assab and Massawa, and deferring a referendum on Eritrean independence for two years.

The Drought

By October 1990, it was clear that Ethiopia was facing another year in which large numbers of people would need food assistance, particularly in Eritrea, Tigray, and Harerghe (the region which now includes East and West Harerghe, the Ogaden, and Dire Dawa). In Eritrea, rainfall started late and was inconsistent; the Ethiopian Relief and Rehabilitation Commission (RRC) reported that crops had failed in over 50% of the area cultivated

in 1990. Some areas of Tigray produced decent crops, but overall Tigray had a below average harvest for 1990. East and West Harerghe and Dire Dawa suffered widespread loss of principal maize and sorghum crops in 1990 due to poor rains in June and July. Weak rains in the Ogaden led to poor pasture conditions in that region, undermining the livelihood of hundreds of thousands of pastoralists. The rains in the first half of 1991 were also weak and brought little relief to eastern or southeastern Ethiopia. The 1991 spring *belg* (secondary season) rains brought some relief to Eritrea, but almost completely failed in Tigray.

The effects of the drought in both Eritrea and Tigray were compounded by consecutive years of drought and civil strife which had eroded livestock holdings, diminished opportunities to earn income through trade or wage labor, and depleted farmers' resources. Drought and unrest in neighboring Sudan had eliminated additional sources of cheap sorghum and possibilities for wage labor on Sudanese farms. In eastern and southeastern Ethiopia, similar conditions prevailed. Chronic drought combined with an increasing dependence on agriculture in areas which could not sustain cultivation put populations in East and West Harerghe and Dire Dawa in a vulnerable position. Increasing civil unrest after the fall of the Mengistu government also undermined traditional means of supplementing family incomes. In the Ogaden, the collapse of the trade network with Somalia, due to the Somali civil war, caused an almost total breakdown of local economies and food supply systems. Starting in early 1991, several hundred thousand Somali refugees and Ethiopians who had been living in Somalia began to flood eastern and southeastern Ethiopia, placing an additional burden on the already stressed population. Finally, infrastructure in these regions was not as well developed as in the north, making delivery and distribution of relief supplies difficult.

Numbers at Risk

Estimates for those in need of assistance varied greatly in 1990 - 1991. In October, international observers estimated that between 3 to 5.7 million people would need emergency assistance in 1990 - 1991, excluding refugees. Table 1 lists the estimates provided by various organizations as of the end of January 1991. By June 1991, the Famine Early Warning System (FEWS) funded by USAID was predicting that 6.5 to 7 million

TABLE I
Estimates of Populations at Risk, by Region

Eritrea	Tigray	Harerghe-Bale
GPDRE-RRC:		
2,288,000	916,000	524,000 ¹
ERA:		
1,977,000 ²	—	—
WFP:		
2,265,000	1,800,000	212,000 ³
Independent Crop Assessment Mission:		
1,500,000	2,400,000	—
FAO:		
Eritrea and Tigray combined: 4,000,000		
Other parts of the country: 440,000 ³		

¹ The RRC estimate is for the Ogaden, an area that stretches from southern Harerghe across to southern Bale province

² This number does not include people living in urban areas under GPDRE control

³ The WFP and FAO estimates were made before it was possible to assess the situation in the Ogaden. They refer to needs in northern and central Harerghe.

people would be vulnerable to famine during the summer and fall. The FEWS figure was based on the following regional estimates: over one million pastoralists and up to 750,000 additional refugees and returnees extremely vulnerable in Harerghe, Dire Dawa, and Ogaden; four million extremely vulnerable farmers and farmer-pastoralists in Eritrea and Tigray; up to one million people in Tigray, North and South Weilo, and Northern Shoa moderately to highly vulnerable; 330,000 farmer-pastoralists in North Omo, South Omo, and Borena extremely vulnerable; 400,000 Sudanese refugees in the western region of Gambella extremely vulnerable; and a large population of poor, unemployed, and displaced people around the country, particularly in Addis Ababa. Relief analysts estimated that Ethiopia would need at least 750,000 MT in relief food in FY 1991; in April, WFP revised that estimate to 1.2 million MT.

to Itang and Dimma were mined, and the bridge on the only road into Fugnido was destroyed. Tensions between rival ethnic groups in the region, and hostility on the part of the Sudanese guerrillas, made relief assistance to the drought affected and the remaining refugees impossible. A month later, the situation had eased somewhat. Approximately 10,000 people, many of whom were Ethiopian Nuer, returned to Itang in July, and repairs on the warehouses and medical facilities were underway. The bridge at Fugnido was replaced by a temporary bridge, and EPRDF military escorts provided some security for relief workers. UNHCR and other relief organizations resumed health services and food distribution in Itang, and UNHCR helped an additional 35,000 Ethiopians in the area who were in need. Sporadic fighting between the local groups, the Sudanese rebels, and EPRDF troops continued through the summer.

The Relief Effort

The "Southern Line"

During the period before the end of the Mengistu government, the donor community relied on three major relief routes: the southern line, the Asmara airlift, and the pipeline into Eritrea through the Massawa port. The "southern line," a relief route between Desse and northern Tigray negotiated between the GPDRE and the rebels and operated by the Joint Relief Partnership, a consortium of churches assisted by NGOs, continued to operate, with one brief interruption, through 1991. From September 1990 to June 1991, this route delivered between 10,000 and 12,000 MT per month, feeding almost one million people per month with food donated by the international community. Fuel problems slowed distribution in the first quarter of 1991, and the trucks completely stopped in mid-May, due to fighting in the area. The route resumed operations, however, by the end of May and in August, the southern line carried a record 18,500 MT (this increase was possible because additional trucks became available). Despite the accomplishments of the southern line, there were many people in Tigray, especially in western Tigray, who could not be reached. In addition, due to difficulties in Assab port, none of the important supplementary foods such as cooking oil and lentils, which round out the

basic ration, were available from June to August in 1991.

The Asmara Airlift

In May 1990, the WFP began using two planes to fly relief goods into Asmara to supply the city and the limited area around it which was still held by the Ethiopian government. Asmara was plagued with shortages of food, fuel, and electricity, and many factories and businesses had closed due to the virtual blockade around the city. Because of the difficulty in getting goods in overland, Asmara remained dependent on the U.N. airlift until the beginning of 1991. Despite interruptions due to mechanical failures, fuel shortages, and EPLF shelling of the airport, the airlift carried over 20,000 MT of emergency supplies to Asmara by November 1990. The airlift was expensive; donors pledged \$15.4 million to WFP by the end of November, enough to pay for the first seven months of the airlift. A WFP appeal for an additional \$8 million to enable the airlift to continue, raised \$3.7 million by the end of January 1991. A number of other smaller airlifts also provided supplies to Asmara in late 1990.

In January, the United Nations eliminated one of the planes due to fuel shortages, and the second plane stopped flying after EPLF shelling intensified. By this time, the airlift was no longer critical to the relief effort, as an alternative supply route through the port of Massawa had been established in early January. WFP's plans to extend the airlift were disrupted on March 1, when EPLF shelling damaged one of the planes and injured a relief worker. As the Massawa route became more advantageous, the airlift was no longer necessary, and was never reinstated. The airlift carried a total of 44,000 MT of wheat flour, corn-soy-blend (CSB), oil, and fuel to Asmara between July 1, 1990, and Feb. 28, 1991.

Due to the limited capacity of the airlifts, rations were often distributed at one-half or one-quarter of their usual levels. In October 1990, a CRS representative reported that 48% of the people surveyed in Eritrea were less than 80% of the normal weight for length. Four months later, LRCS cited surveys showing that up to 29% of the children surveyed were severely malnourished. To address this situation, the Joint Relief Partnership and

the Ethiopian Catholic Secretariat (ECS) established several wet feeding centers targeted to at risk-children.

Massawa Relief Route

Since June 1990, the international community and the United Nations had been trying to facilitate an agreement between the EPLF, which controlled the port of Massawa, and the GPDRE to allow relief supplies to enter the port. After months of haggling, in December 1990, the GPDRE and the EPLF finally agreed to let WFP deliver relief supplies to Massawa.

The supplies were to be split evenly between rebel and government-controlled territory, and both sides agreed to facilitate the transport of the food to Asmara on U.N. trucks. The first shipload, 10,000 MT of relief food and fuel, arrived in Massawa on Jan. 8, on board the WFP chartered ship "Far Suez".

Overall, the relief route out of Massawa worked well. However, fuel shortages, logistical problems, and tensions between the organizations working on the distribution slowed delivery and distribution of the relief food in the Asmara area. Approximately six weeks after the route had opened, over 32,000 MT had been delivered to Massawa, but only 5,825 MT had been distributed in the Asmara area. In addition, the ration provided to each family was limited, and did not include supplemental foods until late April. On May 31, the EPLF told WFP that the food shuttle from Djibouti should be terminated, since the EPLF could now open the port to international shipping. Thereafter, relief cargo was able to enter the port directly. A total of 94,474 MT of relief supplies was brought to Massawa via the shuttle from Djibouti.

In addition to the routes discussed above, relief food continued to enter Eritrea and Tigray by crossing the border from Sudar. Although substantial, the relief food delivered by the international community was not enough to cover the needs of the number of people who were initially estimated to be at risk in the north. In the absence of reports of people dying due to starvation, some relief analysts concluded that the international community may have overestimated the number of people who would need food assistance.

The Ports

The ports were a key component of the relief effort for southern, central, and northern Ethiopia. Bureaucratic obstacles, insecurity, and damaged and inadequate facilities slowed offtake at the major ports of Massawa, Assab, and Djibouti during FY 1991. At Massawa, poor communications between the port and the outside world caused a significant slowdown in deliveries, as many shippers refused to enter the port. By the fall, the EPLF had taken steps to resolve the communications problems, and while the port was still full, off-take had risen to almost 2,000 MT per day. WFP also delivered 2,500 pallets and unloading equipment for Massawa, and rented two bagging machines (which arrived in the beginning of FY 1992) to speed port operations. As FY 1991 drew to a close, WFP negotiated an agreement with the EPLF to deliver relief to Tigray and Wello through Massawa, a much more efficient route than the southern line. Deliveries were scheduled to begin along this "northern line" in October.

The situation at Assab and Djibouti was considerably worse. Of all three ports, Assab was the most essential for relief purposes. Most of the port management staff at Assab, who were mainly Ethiopian, fled after the EPLF took over the port. For most of June and July, the port was run haphazardly. Shippers were unable to communicate with the port, and regulations regarding port fees and disposition of relief goods were unclear. Relief agencies were not allowed free access to commodities consigned to them, and off-take dropped to less than a quarter of the normal rate. Fighting between the Afar and the Issa tribes near the Assab-Addis road at the end of the summer led to a further decrease in off-take, as drivers were reluctant to travel over this road. At one time, over 167,000 MT of relief stocks were sitting on the docks, unprotected from sun, rain, or pests. In September, WFP provided tarps and plastic sheeting to protect the food stocks. WFP also planned to repair equipment, provide other needed supplies, and send an assessment team to the port to improve processing and storage at the port.

All of the shipping, trucking, railroad, and air pipelines into southern and eastern Ethiopia depended on the Djibouti port. None of these pipelines were operating at full capacity during 1991. Because Massawa and Assab were largely non-functional for several weeks, ships carrying relief cargo were diverted to Djibouti, adding to

the backlog in the port. Djiboutian officials imposed burdensome restrictions on relief agencies which further slowed cargo movement through the port. WFP worked to decrease stocks in the port by supplying tarps and pallets, running a shuttle boat from Djibouti to Massawa loaded with relief cargo, and by trucking food into eastern Ethiopia at a faster rate. By the end of September, offtake at Djibouti had improved somewhat.

Relief for the South and the East

Donors had been trying to establish reliable relief routes into southern and eastern Ethiopia since late 1990. In November, WFP began sending relief convoys from Djibouti to Ethiopia, delivering approximately 1,200 MT of relief food per week to the Harerghe region. Despite the difficulty of truck transport to southern Ethiopia during spring 1991, the United Nations continued to send relief food to the region and obtained permission from the GPDRE to use 10,000 MT from the national food security reserve to feed the drought affected and returnee populations. In addition, WTOE provided 35,000 liters of diesel fuel for returnee transport, food delivery to the far south, and water pumping operations in Gode. By the end of September, over 200 trucks managed by WTOE, GTZ, and the Ethiopian Fleet Transport Corporation were available for transport operations out of Djibouti. Nonetheless, overland routes to the east and the southeast out of Djibouti remained unreliable into the fall. Truck convoys from the south were more successful. A joint UNHCR, WFP, and GTZ operation carried over 2,700 MT over the border from Kenya to returnees in the Dolo/Suftu area by the end of August, with 9,000 MT more scheduled to travel this route over the next several weeks.

The U.N. Airlift

The U.N. airlift played a crucial role in relief efforts during this period. In February 1991, the U.N. plane from the Asmara airlift made two trips to Gode bringing faffa (a highly nutritional locally produced food), cooking oil, cooking pots, and diesel fuel to feed and transport the Ethiopian returnees. When the TransAfrique plane was damaged in Asmara in early March, WFP tried to arrange for an alternative airlift to act as a stopgap until a trucking operation could be organized to serve the Ogaden. From late May to June 19, however, no relief food reached the Ogaden. On June 19, UNHCR began airlifting food and relief supplies from Addis Ababa to Gode. UNICEF and

CONCERN, an Irish NGO, used these supplies immediately to begin an emergency feeding and medical program.

Over the summer, UNHCR organized two airlifts which carried a total of 2,300 MT of relief food to the Ogaden. UNHCR started a third airlift in August which was combined with a WFP airlift to Gode and expanded to cover sites in the south, the east, and the north. At its peak, the airlift consisted of three Canadian planes, two Ethiopian Airlines planes, a Southern Air Transport plane, a TransAfrique plane, and a Spanish Military plane, flying to 10 destinations in Harerghe, the Ogaden, Gojam, Tigray, Shoa, and Gondar. As of Sept. 25, the airlift had delivered almost 19,000 MT of relief supplies to the RRC, UNHCR, the ICRC, the Harerghe Catholic Secretariat, CARE, and the Ethiopian Relief Organization. The airlift's capacity diminished in September, as one of the Ethiopian airlines planes crashed, killing all of its crew, and the TransAfrique plane ceased operations. At the end of FY 1991, it was clear that the delay in the airlift, and the continued difficulties with overland transport, would require the airlift to continue for the foreseeable future.

Assistance Provided by the U.S. Government

As early as August 1990, FEWS monitors assigned to Ethiopia were warning USAID in both Washington and Addis Ababa that Ethiopia would continue to need large amounts of emergency humanitarian assistance in FY 1991. On Oct. 17, 1990, after the end of the main rains in northern and central Ethiopia, Charge d'Affaires Robert G. Houdek declared a disaster for FY 1991 due to conditions of drought in Eritrea, Tigray and Harerghe, and continuing civil strife throughout the country. On March 22, acknowledging the deepening crisis in the Ogaden, he declared a drought disaster for the Ogaden. In addition to the financial assistance listed below, the United States worked closely with the international donor community, the United Nations, and the new governments in Addis Ababa and Asmara to ensure that relief routes remained open and sufficiently supplied.

OFDA Assistance

For the first six months of FY 1991, OFDA concentrated its assistance in programs serving northern Ethiopia. The first grant of FY 1991 went to Action Internationale Contre La Faim (AICF) to enable AICF

to continue operating two medical clinics (for which OFDA also provided start-up funds) and to open a third, all in Eritrea. OFDA also provided four grants to CRS: 1) to purchase eight trucks to strengthen the aging fleet that made up the "southern line"; 2) to pay for the operational costs connected with relief distribution along the "southern line"; 3) to provide seeds and tools to farmers in government controlled areas of Eritrea to help them regain self-sufficiency; and 4) to support CRS relief distribution programs undertaken in partnership with the Joint Relief Partnership, the Eritrean Catholic Secretariat, and the Harerghe Catholic Secretariat in Eritrea and Harerghe. In the second half of the year, OFDA provided funding for two food needs assessments, one in Tigray performed by three independent consultants, and the other in the Ogaden, performed by SCF/UK in cooperation with the Ethiopian RRC. The latter evaluated both emergency humanitarian assistance and rehabilitation needs in the region. OFDA also funded independent consultant Tom Brennan to assess refugee needs in western Ethiopia. OFDA supplemented its FY 1990 funding for the U.N. Emergency Prevention and Preparedness Group (EPPG), enabling EPPG to hire additional staff and purchase new field vehicles and computer equipment.

OFDA responded to the dire needs in the Ogaden by supporting the WFP airlift, by lending the Air Serv plane to the relief effort, and by dedicating the ambassador's discretionary disaster fund to various expenses associated with the relief effort. Finally, to support USAID/Addis Ababa, OFDA paid the salary of Wendy Fenton, the Mission's program assistant for emergency humanitarian assistance issues.

As part of its congressionally mandated funding for orphan programs, OFDA also donated \$76,760: \$35,380 to Selam Children's Village for the construction of a house for abandoned babies; \$26,490 to Tefki Orphan Center for improvements in the water system; and \$14,800 to Abebech Gobena Biruh Tesfa's Children's Home for completion of a water project. This grant was funneled through CRDA. In addition, OFDA made a grant of \$125,000 to CRDA for emergency needs of orphans and abandoned children.

OFDA FY 1991 grants are as follows:

Grant to AICF for three medical clinics in Eritrea	\$187,550
Grant to CRS for the purchase of eight trucks	\$976,000
Grant to CRS for distribution of relief commodities in Eritrea and Harerghe	\$690,346
Grant to CRS for a seeds and tools program in Eritrea.....	\$765,819
Grant to CRS for support of the southern line relief corridor	\$175,875
Funding for WFP airlift to the Ogaden.....	\$500,000
Grant to SCF/UK for a needs assessment of the Ogaden.....	\$100,000
Funding for food needs assessment of Tigray.....	\$59,951
Funding for U.N./EPPG operations in Ethiopia	\$303,000
Grant to Air Serv for Ogaden relief efforts.....	\$89,700
Ambassador's Authority for Ogaden drought disaster	\$25,000
Funding for program assistant, USAID/Addis Ababa	\$45,000
Grant to CRDA for three orphan projects	\$76,670
Grant to CRDA for orphan emergency needs.....	\$125,000
Funding for assessment of refugee conditions in western Ethiopia	\$13,109

FFP Assistance

FFP contributed a total of 227,455 MT of food, valued at \$117,176,000, to the following organizations for general relief programs in FY 1991. (Some of the commodities listed below were used for the displaced soldiers and civilians after the fall of the Mengistu regime.)

104,369 MT for WFP for programs for Eritrea, Ogaden drought affected, Ethiopian returnees, and Somali and Sudanese refugees \$56,747,600

484 MT for the American Joint Distribution Committee (AJDC) for displaced persons in Addis Ababa..... \$767,800

72,234 MT for CRS/Joint Relief Partnership for programs in Tigray through the Southern Line, in Harerghe, and in North Omo/Ilubabor..... \$37,799,600

2,784 MT for CRS/Mother Teresa for contingency planning for civil strife in Addis Ababa \$1,457,700

6,215 MT for FHI for emergency feeding programs..... \$2,854,600

23,078 MT for CARE for emergency feeding in Harerghe and Borena \$9,113,300

4,803 MT for the Ethiopian Orthodox Church for emergency feeding in Gondar..... \$2,083,500

798 MT for the Ethiopian Red Cross/LRCS for emergency feeding for displaced persons and refugees \$468,000

2815 MT for SCF/US for supplementary feeding in the eastern camps..... \$1,571,900

9,875 MT for WVRD \$4,312,000

RP Assistance

RP made three grants to UNHCR for programs in Ethiopia: a grant of \$9,500,000 from the Emergency Refugee and Migration Assistance (ERMA) Fund to assist new Somali refugees and Ethiopian returnees; a grant of \$6,000,000 to ICRC for emergency operations; and a grant of \$5,000,000 to repatriate Ethiopian refugees from Kenya, Djibouti, and Kassala, Sudan. (RP has also made the following contributions which include funding for Ethiopia (these amounts are not included in the RP total or in total USG assistance): \$18.5 million to ICRC for Africa-wide programs, \$1 million to LRCS for refugees and displaced persons in the Horn of

Africa, and \$6 million to UNHCR for refugees in the Horn of Africa.)

Total OFDA \$4,133,020

Total FFP..... \$117,176,000

Total RP \$20,500,000

TOTAL \$141,809,020

Assistance Provided by U.S. Voluntary Agencies

ADRA - assisted in rebuilding Gimbi Hospital in Western Ethiopia.

AJDC - operated a medical clinic in Addis Ababa.

American Jewish World Service (AJWS) - sent a shipment of medical supplies through Direct Relief International (see below).

CARE - delivered water to camps serving 480,000 refugees in Harerghe at Hartesheik, Teferi Ber, and Kebri Bayih. CARE also provided food, some of which was supplied by FFP, to 300,000 vulnerable populations in southern and eastern Ethiopia.

CRS - made a grant of \$500,000 to the Relief Society of Tigray for internal purchase of relief food for Tigray and Wello. CRS also worked with the JRP on the southern line and the Harerghe Catholic Secretariat to feed affected populations in Harerghe.

Direct Relief International - in cooperation with AJWS, sent two shipments of drugs and medical supplies worth \$55,644 to be distributed by the Ethiopian Ministry of Health, CRDA, and the Ethiopian Evangelical Church Mekane Yesus.

FHI - provided emergency relief in Gondar province and cooperated with Canadian Physicians for Aid and Relief on relief in northern Omo.

LWR - worked with Mekane Yesus, the Joint Relief Partnership, the Eritrean Relief Association (ERA), and the Relief Society of Tigray (REST) to provide relief in northern Ethiopia.

MCI - channeled relief into northern Ethiopia through ERA and REST.

WVRD - spent \$50,000 on food, shelter, blankets, and medical assistance for 10,000 people. WVRD also participated in food distribution in two areas in northern Ethiopia, three areas in southern Ethiopia, and one area in the east.

to SCF for trucks and spares for the southern line, and \$185,000 for support for U.N. Emergency Prevention and Preparedness Group.

Assistance Provided by the International Community

International Organizations

(The following list is based on available information and is not a comprehensive catalog of international assistance)

EC - pledged \$1,370,000 for the WFP airlift. Between December 1990 and March 1991, the EC pledged 269,000 MT of relief food worth \$145,000,000 for Ethiopia. The EC also pledged to provide an additional \$1,521,000 for medical assistance, food, and transport in mid-1991.

U.N. organizations - conducted extensive relief operations as detailed in text.

Governments

Canada - The Canadian government announced on April 3, 1991, that it would provide Ethiopia with approximately \$12,500,000 in food aid. Canada had already pledged \$1,000,000 for the WFP airlift.

Denmark - pledged \$521,739 to the UNHCR for work with Sudanese and Somali refugees.

Holland - provided emergency aid worth approximately \$10,000,000 in 1991.

Japan - pledged \$1,000,000 for the WFP airlift.

Norway - pledged \$1,700,000 for emergency food to be delivered through Massawa, and split between ERA and the GPDRE.

United Kingdom - pledged \$16,450,000 worth of food aid to be delivered through Massawa, and split between the GPDRE and ERA. The United Kingdom also pledged 5,000 MT of cereals to CARE for distribution in Harerghe, nearly \$1,200,000 worth of vegoil for distribution to Somali and Sudanese refugees, \$985,000

MADAGASCAR - Cyclone

Date: Feb. 16, 1991
Location: West-central coast, especially Mahajanga and Toliary provinces
No. Dead: 36; 9 missing
No. Affected: 25,000 families homeless (about 125,000 people)
Total USG Assistance: \$7,550,303

The Disaster

After skirting the north coast of Madagascar for three days, with wind force gaining momentum daily, Cyclone Cynthia made dramatic landfall near the west coast city of Mahajanga on Feb. 16. Packing winds that reached 100 to 120 km. per hour, and accompanied by torrential rainfall, the storm devastated a wide area along the west coast and southwest areas of the island. Hardest hit were Mahajanga and Toliary provinces, where the cities of Mahajanga and Morondava and surrounding areas received two-thirds as much rain over a four-day period as they generally receive during the course of a year.

Official statistics listed 36 dead, nine missing, and 25,000 families homeless. Up to 98% of homes were lost in some villages, although the extent of damage varied from village to village. Infrastructure in the region sustained heavy damage as well. Most of the key bridges and connecting roads in the affected area, especially in Toliary Province in and around Morondava, were either washed away or severely damaged.

Rice production suffered a serious blow as a result of cyclone-induced flooding. The Marovoay Plains in Mahajanga Province is considered the second rice-bowl of Madagascar (after the Lac Alaotra region in the high plateau). In contrast to the rest of the country, its main rice production season is the dry season from April to December. Nevertheless, the loss of the wet season crop had a significant impact. Over 20,000 tons of rice which would have been harvested in April were destroyed. Additionally 10,000 ha. of irrigated rice land in Morondava were damaged due to the collapse of a major irrigation canal.

Action Taken by the Government of the Democratic Republic of Madagascar (GDRM)

The GDRM Minister of the Interior was designated coordinator of the government's response. Following a visit to the stricken area on Feb. 26-27 by a GDRM assessment team, the government issued a report on March 7, citing damage statistics and appealing to the international community for assistance. Of immediate concern was the restoration of key bridges and waterways.

The GDRM worked closely with USAID/Antananarivo to locate local sources of rice seed being purchased by the USG as part of its response to the GDRM's appeal for disaster assistance (see below). Seeds were distributed to farmers through local governments (faritany). The faritany took full responsibility for seeing that the seeds were distributed and planted during the dry season production period beginning in April. Transportation costs to move the seed from the place of storage to the point of distribution were borne by the faritany. To facilitate seed distribution, the faritany created an emergency action committee for each location. Under separate contracts between farmers' associations and individual farmers, each farmer receiving rice seed was required to deposit an equivalent amount of seed into a seed bank managed by the association to be used as emergency stock.

Assistance Provided by the U.S. Government

The donor community in Madagascar, including a USG representative, met on Feb. 26 to review the situation arising from the cyclone and identify areas of possible assistance. At the invitation of the GDRM, the USAID Mission Disaster Relief Officer accompanied the government's cyclone assessment team to Mahajanga on Feb. 26-27. After GDRM- and donor-sponsored assessments confirmed the severity of the damage, U.S. Ambassador Howard K. Walker issued a disaster declaration on March 12, and donated \$25,000 under his Ambassador's Authority for the local procurement and transport of roofing materials. A portion of these funds (\$2,800) was used by USAID/Madagascar to finance the transport of a pontoon bridge from a location south of Marajanga to a river crossing several kilometers north of the city. The bridge was to be used until a permanent bridge could be constructed to replace one washed out by the storm.

As further assistance to the GDRM, USAID/Madagascar requested that OFDA fund the procurement and distribution of rice seed for farmers whose crops had been lost. OFDA provided a mission allotment of \$93,603, of which \$78,517 was used to purchase 360 tons of seed from local sources. The remainder was used to procure tools needed to reopen a major irrigation canal. Local governments were responsible for distributing the seed purchased with OFDA funds. USAID and the faritany made periodic follow-up visits to assess the progress of distribution, and to verify that the seeds had been planted. An estimated 6,000 farmers benefitted from the seed distribution program.

To address the shortfall in rice caused by the cyclone and drought conditions in other parts of the country in FY 1991, FFP approved an emergency allocation of 15,000 MT of milled rice for Madagascar. The commodity value was \$5,099,200, and ocean freight and internal transport costs amounted to \$2,332,500.

<i>Total OFDA</i>	<i>\$118,603</i>
<i>Total FFP</i>	<i>\$7,431,700</i>
TOTAL	\$7,550,303

Assistance Provided by the International Community

France - purchased 130 MT of rice seed for distribution to farmers affected by the floods.

MALAWI - Floods

Date: March 1991

Location: Southern Malawi, especially the villages of Chiringa, Katanga, Mkhumbu, Mwezula, Naminjiwa, Phalombe, Saskusanja, Mwazale, Wopeliwa and Zibuda.

No. Dead: An estimated 700 to 1,000 deaths.

No. Affected: Approximately 85,000 to 100,000 people.

Total USG Assistance: \$365,000

The Disaster

In southern Malawi, during March 9-10, 1991, torrential rains pummelled the highly porous quartz syenite and granite-based Muchese and Mulanje Mountains, and eventually triggered a tremendous eruption of percolated underground water that tore through the sides of the two mountains. The force of the water that gushed down the mountains was of such a magnitude that it set off an avalanche of water, automobile-sized boulders, and full-grown trees that inundated and crushed everything located in the 300 sq. km. area below the two mountains.

According to UNDRO, the floods and landslides severely damaged 25 villages, two of which (Mwazale and Wopeliwa) were totally destroyed. Approximately 1,650 mud huts were turned into liquid. Most roads, bridges, and public buildings (post offices, clinics, and schools) were washed away, and water and sewage systems collapsed. In addition to the loss of homes and local infrastructure, about 30,000 ha. of the villagers' crops were completely wiped out, and many livestock perished. UNDRO estimated the death toll to be 700 to 1,000, and concluded that 85,000 to 100,000 people were affected by the calamity.

Action Taken by the Government of Malawi (GOM) and Non-Governmental Organizations

Malawians and local authorities responded immediately to alleviate suffering caused by the disaster. The President of Malawi donated 1,725 bags of maize, 5 MT of peas, and 5 MT of cow peas to the flood victims in Mulanje District. The Ministry of Health (MOH)

dispatched medical personnel to the disaster site to provide emergency health care services, and to monitor the health and sanitation situation for potential outbreaks of water-borne diseases such as cholera. The Malawi army and police assisted the MOH by airlifting the severely injured to nearby hospitals in Blantyre and Zomba. Helicopters were used to transport food, medicine, and other relief supplies while also ferrying local officials, foreign donors, and assessment teams to and from the affected areas. The GOM's Agricultural Marketing Division sent at least six trucks bearing food for the affected populace.

In Phalombe, civilians and prisoners swept, shoveled, and dug out mud and other debris from homes and shops, and cleared away all refuse from the disaster site. Citizen work groups joined authorities from the Ministry of Works in repairing and reconstructing roads, bridges, crop storage houses, and other damaged infrastructure. Phalombe and Nambiti secondary schools were set up as operations centers to receive and distribute food and other relief supplies, as well as to provide temporary shelter to the homeless. The GOM also sent water and well-drilling trucks to provide clean water, and restore water and sanitation systems for the disaster victims in the area.

In addition to its radio station in Chiringa refugee camp (the camp which houses some of the 940,000 Mozambican refugees in Malawi), the Malawian Red Cross (MRC) installed a second radio station at Phalombe sub-boma to provide telecommunications support for the affected area. The MRC Relief Unit and the LRCS delegation began distributing food and other relief supplies to the victims immediately after the twin disasters struck. Local organizations donated 20 tents, 1,000 cooking pots, 13 stretchers and camp beds, 50 cartons of plates, and 1,039 blankets to the Red Cross. The British High Commission and the EC also supplied the MRC with emergency goods for distribution to both Malawian disaster victims and Mozambican refugees. WFP/UNHCR continued providing food rations for those refugees through the MRC. The MRC and the LRCS delegation were also actively involved in raising funds for more local emergency assistance efforts by maintaining constant contact with NGOs, the EC delegation, and foreign diplomatic missions in Malawi, as well as conducting discussions with GOM agencies.

Korea, Rep. - donated two one-MT trucks.

South Africa - contributed cooking utensils and local transportation worth \$39,216.

Taiwan - sent \$50,000 in cash.

United Kingdom - supplied tents, clothing, blankets, cooking sets, and water buckets valued at \$76,336.

Non-Governmental Organizations

MSF/France - provided medical supplies and emergency health care services.

SCF/UK - conducted several feeding programs for the disaster victims, and supplied drugs and other medical equipment.

MOZAMBIQUE - Civil Strife/Drought

Date: 1990 - 1991

Location: Nationwide

No. Dead: Since 1981, an estimated 1 million people have reportedly died as a result of violence or malnutrition and disease exacerbated by the civil strife.

No. Affected: 1.9 million Mozambicans were listed as severely affected, requiring free distribution of donated emergency food aid. Approximately 5.9 million others were dependent on subsidized sales of donor food aid. In addition, an estimated 1.4 million Mozambicans have fled the country and settled in refugee camps in Malawi, Zimbabwe, Zambia, South Africa, and Tanzania.

Total USG Assistance: \$60,730,530

The Disaster

Acts of man and nature continued to plague Mozambique in 1991. Since 1976, a shadowy guerrilla organization, known as RENAMO, has destroyed infrastructure, murdered and maimed civilians, and attacked and looted relief convoys in an effort to destabilize the government of Mozambique, under the control of the FRELIMO party. Over three million Mozambican villagers have been driven out of rural areas and have spent years residing in overcrowded refugee camps in neighboring countries or displaced persons camps close to government-protected towns and cities. The loss of agricultural productivity due to the displacement of the rural population has also been exacerbated by chronic drought. In 1991, poor rains inhibited food production in the southern and central portion of the country, especially in Manica and Sofala provinces. Following the May 1991 harvest, FAO determined that domestic cereal production had declined by 33% compared to the previous year, the bean crop by 30%, and production of cassava by 9%. The shortage of food and poor health conditions have caused Mozambique to have one of the highest child mortality rates in the world, with one of every three children dying before reaching the age of five. UNICEF reported that an estimated 57% of all children suffered from moderate malnutrition and 20% of all newborn infants

exhibited low birth weight. Overall life expectancy for an average Mozambican was estimated at 47 years.

Out of a total population of 16.3 million, an estimated 1.9 million people inside Mozambique required emergency food assistance due to displacement or the effects of war and drought. In addition, nearly one million Mozambican refugees required emergency assistance in Malawi and over 500,000 more in camps in Zimbabwe, Zambia, Tanzania, and South Africa. A much larger group affected by decreased domestic food production were the approximately 6 million Mozambicans living in towns and cities who were dependent on subsidized food sales through the market sector. These people were able to use their own money to buy donor food at reduced prices and therefore were not dependent on free food distribution. Currency generated from these sales were then channeled back to pay for country relief and development projects.

While peace talks were underway in Rome between negotiators for the government and RENAMO, the guerrillas continued their campaign of terror against the rural population. A massacre of innocent civilians was reported in the town of Lalaua in Nampula Province in June. The massacre was thought to be an act of retaliation and intimidation against village supporters of the anti-RENAMO, animist militia, known as Naparamas. Displaced persons that escaped from RENAMO-held areas were often seriously malnourished, sick, and without belongings. In the village of Morrua in Zambezia Province, over 3,000 people died in a three-month period before emergency airlifts were able to deliver food and medical care. Famine conditions were also discovered in the recently liberated areas of Caia and Murraca in Sofala Province, the Mutarara district in Tete, and Guro District in Manica. Intermittent peace talks in Rome resulted in protocols for protecting railroad corridors and plans for multi-party elections. RENAMO, however, refused to agree to a nationwide ceasefire or the establishment of relief corridors in return for recognition as a legitimate political party.

Action Taken by The Government of the Republic of Mozambique (GRM)

The GRM's National Executive Commission for the Emergency continued to serve as the government agency responsible for the day-to-day coordination of relief

activities of other governmental departments, non-governmental organizations, and international agencies. The Department for the Prevention and Combat of Natural Disasters (DPCCN) transported donated food to affected populations at the district level, delivering approximately 140,000 MT of food during the year. Approximately 70 districts in Mozambique required convoys with armed escorts to deliver food due to the threat of RENAMO attacks. The DPCCN maintained a fleet of approximately 280 vehicles, of which more than 135 were out of operation due to RENAMO attacks, disrepair, or a lack of spare parts. Private trucking contractors were used by DPCCN and NGOs to deliver food to accessible areas.

There were continued reports of diversions of donated food commodities and of unpaid government soldiers stealing food from trains and DPCCN convoys. The Ministry of Finance also imposed duties and taxes on certain donated goods intended for distribution to affected populations, in an effort to generate hard currency to comply with World Bank and IMF structural adjustment programs. An inter-ministerial Coordinating Council was established, under the chairmanship of the Prime Minister, to resolve these issues and improve coordination among the various GRM ministries and departments.

Assistance Provided by the U.S. Government

On June 3, U.S. Ambassador Townsend Friedman determined that a disaster existed in Mozambique due to civil strife and drought. This marked the eighth consecutive year that the U.S. Ambassador had declared a disaster in Mozambique. By FY 1990, many of the emergency relief projects originally funded by OFDA had been integrated into the USAID PVO Support Project. This project financed several U.S. PVO health, water, agricultural, and logistical rehabilitation programs designed to return displaced and affected populations to a state of self-sufficiency, and enhance the provision and distribution of food and other assistance to these groups. In FY 1991, A.I.D.'s Bureau for Africa (AFR) funded the PVO Support Project at a level of approximately \$7 million.

OFDA extended its grant with WVRD to conduct emergency airlifts of food and supplies into famine-stricken areas that were inaccessible to road deliveries

due to insecurity. In FY 1991, WVRD conducted emergency airlifts into the villages of Morrua and Mulevala in Zambezia Province, and Caia and Murraca in Sofala Province. WVRD personnel first conducted nutritional surveys of the vulnerable population, and then arranged the emergency airlifts using local carriers or the U.S. PVO, Air Serv, to deliver food and supplies to the affected area. Once airlifts started and the first DPCCN convoys were able to deliver food to Morrua, the mortality rate in the village declined from 18% to 6%.

The threat of RENAMO attacks also hampered the ability of relief personnel to visit affected areas. In FY 1991, OFDA renewed its grant with Air Serv to provide airplane passenger service to USAID personnel, as well as staff of ADRA, CARE, and WVRD. Air Serv provided a Cessna 402 twin engine aircraft and a Cessna 210 single engine plane and crews to fly relief personnel to remote areas so that they could inspect humanitarian assistance projects or conduct emergency assessments.

The USG continued to be the largest food aid donor to Mozambique. In FY 1991, FFP donated 75,000 MT of food commodities to the GRM, 12,520 MT to WFP, and 7,355 MT to WVRD and ADRA for free distribution to the displaced and affected population through its Title II Program. In addition, FFP provided 72,408 MT of food for urban Mozambicans affected by food shortages through the Title III commercial sales program. An additional 50,000 MT of commercial food for affected urban populations was channeled to WFP through the Section 416 Program. The substantial local currency proceeds from these sales were made available to finance various government and USG relief and rehabilitation activities. The total 217,283 MT of food commodities were primarily corn, wheat, rice, beans, and vegoil.

Summary Of USG Assistance

OFDA Assistance

Extension of Air Serv grant for air service for emergency personnel.....	\$490,880
Extension of grant to WVRD for emergency airlifts.....	\$990,250

AFR Assistance (DFA Account)

PVO Support Project \$7,000,000

FFP Assistance

94,875 MT of Title II food..... \$12,504,200

Transport of 94,875 MT \$9,335,300

72,408 MT of Title III food \$10,119,400

Transport of 72,408 MT \$8,820,500

50,000 MT of Section 416 food..... \$5,100,000

Transport of 50,000 MT \$6,370,000

Total OFDA \$1,481,130

Total AFR \$7,000,000

Total FFP \$52,249,400

TOTAL \$60,730,530

Assistance Provided by U.S. Voluntary Agencies

ADRA - distributed Title II food to displaced and affected populations, and managed a rural recovery program in Inhambane Province, partially funded out the USAID PVO Support Project.

Africare - implemented a water and well rehabilitation project in Sofala Province, partially funded by USAID.

Air Serv - provided crew and aircraft to fly relief personnel to remote areas, partially funded by OFDA.

CARE - continued to manage the Logistical Support Unit of the DPCCN, overseeing the receipt, storage, transportation, and distribution of most internationally donated relief commodities, including food. This was partially funded out of the USAID PVO Support Project.

CRS - supported various Caritas projects throughout the country.

FHI - managed an agricultural recovery program in Sofala Province, partially funded out of the USAID PVO Support Project.

SCF/US - operated an agricultural recovery program in Gaza Province, partially funded out of the USAID PVO Support Project.

WVRD - directed emergency airlifts of food and supplies to isolated communities identified as vulnerable to famine. WVRD also distributed Title II food to displaced and affected populations and ran a commodity management program and an agricultural recovery project in Zambezia and a primary health care/child survival program in Tete, partially funded by USAID.

Assistance Provided by the International Community

International Organizations

EC - suspended shipments of emergency and marketed food aid to WFP and the GRM until the GRM would agree to an independent audit of its market food utilization, technical assistance for its food management agencies, and improvement in the counterpart fund stipulations.

ICRC - delivered emergency supplies to civilians affected and isolated by the conflict. ICRC was the only international relief organization that had access to vulnerable populations in RENAMO-held areas. In July, a controversy erupted when GRM security officials in Sofala Province accused ICRC of delivering military goods to areas under RENAMO control and temporarily detained an ICRC delegate. The situation was resolved after ICRC explained that uniforms confiscated by security forces were in fact military-style clothing donated and delivered by the German Red Cross. The clothing was stored in the ICRC warehouse, but was supposed to be destroyed after it was deemed inappropriate for distribution.

United Nations - reported that \$122,300,000 had been pledged/contributed by the international community in response to its 1990/1991 Emergency Appeal for Mozambique. The total appeal had been for \$135,800,000 to carry out sectoral relief programs in Mozambique. A total of 200,322 MT of emergency food aid was reported to have been contributed against a need for 229,000 MT.

Governments

Major governmental donors of humanitarian assistance to Mozambique included the United Kingdom, Sweden, Italy, Germany, Norway, Switzerland, Japan, and

Canada. Their contributions have been counted against the U.N. emergency appeal.

Non-Governmental Organizations

The list of non-U.S. NGOs working and providing assistance in Mozambique included ActionAid, Bioforce, Caritas, COCAMO (Canadian NGO consortium), German Agro-Action, Handicap International, MSF/Belgium, MSF/France, MSF/Netherlands, Oxfam/UK, Redd Barna, and SCF/UK.

SOMALIA - Civil Strife

Date: 1991

Location: All of Somalia, neighboring areas of Kenya, Ethiopia, and Djibouti.

No. Dead: Exact number killed is unknown, but estimates put it in the thousands.

No. Affected: The U.N. estimates that 4.5 million were affected by civil strife in Somalia. By the end of 1991, there were an estimated 500,000 Somali refugees in Ethiopia, 56,500 in Kenya, 82,000 in Djibouti, and hundreds of thousands of people internally displaced within Somalia.

Total USG Assistance: \$20,127,127

The Disaster

The bloody civil war that plagued Somalia since 1988 culminated in the overthrow of President Mohammed Siad Barre in late January 1991. The 21-year misrule of Barre, coupled with the devastation wrought by the civil war, left Somalia in ruins. Major cities in northern Somalia were reduced to rubble, the country's economy was crippled, and severe food shortages developed in many areas. Thousands of people were killed, and hundreds of thousands were uprooted from their homes.

No functioning government was established in Somalia following Siad Barre's overthrow. Although various clan-based rebel groups collaborated in the effort to oust Barre, they were subsequently unable to agree upon a national leadership. The political landscape of Somalia disintegrated into one of rival clan-based groups claiming control over a particular region of the country. The northwest was largely controlled by the Somali National Movement (SNM), made up predominantly of Isaak clan members. In May, the SNM declared the "Somaliland Republic," though no other group recognized its independence. There were several clan-based groups in the southern, central, and northeastern regions of Somalia, including the Somali Patriotic Movement (SPM), made up of the Darod/Ogadeni clan, and the Somali Salvation Democratic Front (SSDF), made up of the Darod/Majerteyn clan. The Somali capital of Mogadishu was held by the United Somali Congress (USC), made up of the Hawiye clan. However,

heavy intra-clan fighting erupted in Mogadishu in late November between two rival factions of the USC, and control of the city was still being contested at the time of this writing. (*Note: Refer to 1992 OFDA Somalia Situation Reports for information on further developments.*)

The Relief Effort

Most international relief organizations and foreign embassies evacuated Somalia in late December 1990 and early January 1991 due to the precarious security situation. During the year, a number of NGOs re-established operations in Somalia, but insecurity and political instability continued to impede concerted relief efforts. The United Nations closed down operations in Mogadishu and southern Somalia in early September because of security concerns, but maintained a limited presence in the north. When heavy fighting broke out in Mogadishu in late November, several NGOs were once again forced to reduce the number of expatriate staff in country and temporarily suspend relief activities.

Situation by Region

Mogadishu and Central Region

On Dec. 30, 1990, heavy street fighting broke out in Mogadishu between USC supporters and troops remaining loyal to Siad Barre. For the next several weeks, the city became the scene of intense violence, rampant killing, and chaotic conditions. An estimated 1,500 people were killed, and unburied corpses littered the streets. Barre was finally forced out of Mogadishu on Jan. 27, and fled to his clan homeland area in southwestern Somalia.

Infrastructure in Mogadishu suffered widespread damage, social services ceased entirely, and the economy was completely disrupted. For several months following Barre's departure from the city, the security situation remained precarious. The entire population was heavily armed, looting was rampant, and sporadic clashes continued between and among clans.

By mid-year, some semblance of routine daily life had returned to Mogadishu. Security improved, business activities slowly emerged, and repairs were made to the telecommunications system. A number of NGOs

resumed relief activities in Mogadishu. The ICRC, MSF/France, CISP (Italian NGO), and, later in the year, International Medical Corps (IMC) provided emergency medical assistance to hospitals. SCF/UK operated maternal/child health (MCH) and supplementary feeding centers. SOS-Children's Villages ran an orphanage and health clinics. Alexander Gibb (private firm) worked on rehabilitation of the Mogadishu water system.

The availability and affordability of food in and around the capital remained a serious concern throughout the year. SCF/UK reported rising malnutrition rates in Mogadishu, particularly among children. An ICRC survey conducted in August found the nutritional status of people in the areas of Belet Weyne, Wanle Weyne, and Johar to be critical. An alarming 46% of the children surveyed in villages around Johar were identified as being severely malnourished, with an additional 44% found to be moderately malnourished.

The ICRC, in conjunction with the Somali Red Crescent, distributed food through district relief committees, though security remained a problem at end distribution points. After a Belgian ICRC worker was killed while attempting to distribute food in Mogadishu in December 1991, ICRC ceased all direct food distribution activities. CARE began an extensive food distribution program to 15 districts (600,000 people) in Mogadishu in early October, but also experienced serious problems with security and looting. CARE was forced to suspend operations after heavy fighting broke out in November.

In early September, heavy fighting erupted in Mogadishu between two rival factions of the USC, lasting several days, and leaving several thousand people dead and wounded. The rift between supporters of Interim President Ali Mahdi and those siding with USC Chairman General Aideed deepened over the next two months, finally spilling over into full-scale urban warfare on Nov. 17. By the end of 1991, up to 20,000 people, mostly women and children, had been killed or wounded, hundreds of thousands of people had been displaced, and the fighting continued unabated. Most NGOs evacuated expatriate personnel, and relief activities, except for the provision of emergency medical assistance and therapeutic feeding, came to a virtual standstill.

Southern Region

During the intense period of fighting in Mogadishu in January 1991, approximately 100,000 residents fled south to the port city of Kismayu. Subsequent struggles for control over Kismayu between the SPM and USC, and later in the year between rival factions of the SPM, resulted in further displacement of civilians. For several months, tens of thousands of displaced Somalis were camped near the town of Doble along the Kenyan border, assisted only by an ICRC base set up to provide food, tents, and medical care. By the end of the year, most of the displaced persons at Doble had returned to their clan homeland areas in other parts of Somalia, or crossed over the border into Kenya. A new wave of displaced persons flooded into Kismayu and surrounding areas following the heavy fighting in Mogadishu in late November.

The effects of the internal conflict in Somalia had a devastating impact on the rural, agrarian populations of the south. Battles fought in this important agricultural area, together with looting of food reserves by occupying forces and bandits, destruction of agricultural infrastructure, and displacement of farmers resulted in 30% of a normal harvest in 1991. The livestock sector was also seriously affected with unusually high levels of disease in the Juba region.

Severe food shortages developed in some villages, and malnutrition rates rose dramatically, especially among displaced populations. An August ICRC nutritional survey in Gelib showed 76% moderate malnutrition among children under the age of five, with 38% suffering from severe malnutrition. ICRC, the primary organization involved in food distributions in southern Somalia, experienced difficulties throughout the year due to armed attacks and looting.

Health was also a serious problem throughout the south. No medical services existed in rural areas, and the hospital in Kismayu was completely looted during fighting early in the year. A small annex was re-equipped by ICRC, and in October, World Concern placed two nurses in Kismayu to assist in MCH centers. However, this did not come close to meeting the medical needs of the population. Many deaths from malaria, dysentery, tuberculosis, and serious war wounds were reported.

Northern Region

The effects of Siad Barre's brutal struggle to suppress the SNM rebel movement in the north were devastating. From 1988 until his overthrow in January 1991, Siad Barre's troops killed thousands of Somali Isaaks and ravaged the northern region. An estimated 85% of homes and public buildings in the northern capital city of Hargeisa were severely damaged or destroyed. The local economy was totally disrupted and basic infrastructure was incapacitated. There was no reliable water source, as most wells and reservoirs were destroyed in the war, and pipes were literally dug out of the ground to be sold. Furthermore, tens of thousands of unexploded landmines and other ordnance remained buried along roads and under the rubble of northern towns, posing a serious danger to civilian lives.

Many northern Isaaks who had fled into Ethiopia since 1988, returned to northern Somalia in 1991, particularly after the region's declaration of independence in May. Increasing insecurity and deteriorating conditions in refugee camps in eastern Ethiopia also hastened the refugees' return. By mid-year, an estimated 100,000 Isaaks had returned to Hargeisa, Boroma, and Burao, which placed an added burden on the infrastructure and economy.

During the course of the year, the overall situation in the north improved. The SNM made security a top priority and was largely successful in restoring relative peace and security to the region. (However, several non-Isaak clans resided in the north, some of whom were wary of SNM domination and opposed secession, and tensions between clans remained.) Private trading took place, a wide variety of commercially imported goods was available in local markets, and exportation of livestock continued. Local groups, organized around traditional councils of elders and sheikhs, undertook reconstruction efforts in their respective areas.

The number of NGOs operating in the region increased throughout the year. ICRC, MSF/Holland, German Emergency Doctors, Cooperazione Internazionale, and SCF/UK provided medical assistance to hospitals and MCH centers. UNICEF provided some medical equipment and essential drugs to NGOs. Oxfam and Turnkey, an American company contracted by UNICEF, rehabilitated water systems. MSF/Holland contracted a British company, Rimfire, to implement an emergency

mine-clearing operation. A group of 180 Somali volunteers completed training on Sept. 30 and, under the supervision of six expatriate de-mining experts, began the slow, systematic process of disposing of the tens of thousands of landmines and other ordnance littering the region. In September, CARE began a food monetization program which channelled food through local merchants for sale at predetermined prices.

Assistance Provided by the U.S. Government

The intensified violence in Mogadishu forced the U.S. Embassy and USAID/Somalia to evacuate their personnel from Somalia in early January 1991. On March 25, U.S. Assistant Secretary of State Herman J. Cohen, responding to continued reports of violence and severe shortages of food, water, and power, declared that a civil strife disaster existed in Somalia. The USG, through OFDA, FFP, and RP, channeled food and financial resources through U.N. agencies and NGOs for relief efforts in Somalia.

Summary of USG Assistance

OFDA Assistance

Funding for Somalia relief coordinator based in Nairobi \$51,684

Grant to CARE for emergency food distribution program in the northwest and Mogadishu \$463,846

Grant to SCF/UK for MCH and therapeutic feeding centers in Mogadishu..... \$256,000

Grants to MSF/Holland to support mine-clearing operations in the northwest..... \$525,540

Grant to UNICEF to support programs in water supply, sanitation, supplementary feeding, and health care throughout Somalia..... \$3,052,000

FFP Assistance

In FY 1991, a total of 12,210 MT of P.L. 480 food, valued at \$5,743,700 including transport charges, was programmed for Somalia and channeled through WFP and CARE. A shipment of 2,740 MT of sorghum, 2,370 MT of lentils, and 7,100 MT of wheat/flour arrived in Mogadishu in August.

RP Assistance

In FY 1991, RP provided \$52.6 million to UNHCR and \$26.3 million to ICRC for their Africa-wide programs, some of which was for operations in Somalia (not included in total USG figure). RP contributed an additional \$3 million which was used by ICRC specifically for relief operations in Somalia. In response to the Sept. 1 U.N. appeal, RP contributed \$5 million to UNHCR for repatriation of Somali refugees, and \$2 million to UNICEF for activities in northern Somalia, including \$990,000 for rehabilitation of the Hargeisa water system.

Total OFDA \$4,359,070
Total FFP..... \$5,743,700
Total RP \$10,000,000

TOTAL \$20,102,770

Assistance Provided by U.S. Voluntary Agencies and Private Groups

CARE - distributed food in Mogadishu and implemented a food monetization program in the northwest.

IMC - provided emergency medical assistance at Medina and Digfer hospitals in Mogadishu (IMC's in-kind contribution was valued at \$158,020).

Turnkey (U.S. company) - rehabilitated the Hargeisa water system, under contract to UNICEF (funded by the USG).

World Concern - distributed seeds and tools valued at \$8,000 in Lower Juba region; provided medicine and medical supplies worth \$546,964 to hospitals in Mogadishu; and provided medical assistance to two MCH centers in Kismayu and one in Mogadishu at a cost of \$15,800.

WVRD - committed \$150,000 to assist in a joint program with World Concern.

Assistance Provided by the International Community

International Organizations

EC - in 1991, provided a total of 45,505 MT of food, valued at \$14,021,920, in addition to \$14,776,415 of non-food assistance channeled through various NGOs for emergency relief activities throughout Somalia.

ICRC - distributed food throughout Somalia; provided emergency medical assistance in Mogadishu and Kismayu; maintained a surgical hospital in Berbera; supplied food, tents, and medical care to displaced people's camp at Doble; distributed seeds and tools in central and southern regions; operated daily flights into Somalia; provided logistical support to many NGOs; and conducted tracing activities and exchange of Red Cross messages.

UNDRO - conducted an airlift of 22 MT of high-energy biscuits, plastic sheeting, tents, blankets, and building supplies which arrived in Berbera Oct. 27 (funded by the Italian Government).

UNHCR - developed plans for a repatriation/returnee program for Somalis returning from Ethiopian refugee camps to northwestern Somalia.

UNICEF - supported airlifts of emergency supplies to Mogadishu and Kismayu; conducted vaccination campaigns and equipped hospitals and MCH centers in the northwest; and rehabilitated the water supply system in Berbera.

WFP - coordinated delivery of food aid.

WHO - provided UNIMIX, drugs, medical supplies, and equipment to NGOs working in all regions of the country.

Governments

Belgium - provided medical assistance valued at \$146,883.

Canada - provided \$50,000 to World Concern for seeds and tools distribution in Lower Juba region.

Denmark - provided \$471,190 for refugee assistance.

France - donated food aid and transport worth \$1,287,977.

Germany - provided \$5,117,647 in food aid and \$1,235,294 in non-food aid.

Greece - provided food aid valued at \$2,480,000.

Italy - provided food aid and medicine worth \$806,713 and contributed \$200,000 to UNDRO for an airlift of relief items to the north.

Libya - donated 4,662 MT of wheat flour to Mogadishu and 3,000 MT to Berbera.

Luxembourg - provided \$58,752 in medical assistance.

Netherlands - provided medical assistance to health centers in Mogadishu valued at \$794,593 and contributed \$10,800 to MSF/Holland in support of its mine-clearing operation in the northwest.

United Kingdom - contributed medical assistance worth \$4,553,980 and food aid worth \$3,785,720. In addition, the U.K. Overseas Development Administration provided funding to Christian Aid for water projects in Merca, Brava, Kismayu, and Mogadishu, to SCF/UK for supplementary feeding centers in Mogadishu, and to MSF/Holland for emergency mine-clearing in the northwest.

Non-Governmental Organizations

ACORD (European NGO) - distributed food in the south.

Alexander Gibb (private firm) - implemented a water supply project in Mogadishu (EC-funded).

Caritas - delivered medicine to SOS clinics in Mogadishu; conducted vaccination campaigns in the north; and assisted in the rehabilitation of Berbera's water system.

CISP (Italian NGO) - provided emergency medical assistance in Mogadishu.

Cooperazione Internazionale - operated a medical assistance program in a Berbera hospital.

German Emergency Doctors - provided medical assistance at Hargeisa hospital and distributed food aid to hospitals and orphanages in Burao, Boroma, Erigavo, Berbera, and Hargeisa.

Handicap International/Action Nor-Sud - manufactured and distributed crutches to hospitals in the northwest.

HANDS (Swedish NGO) - operated an orphanage in Hargeisa.

MSF/France - provided medical assistance at Medina hospital in Mogadishu.

MSF/Holland - supported medical teams at hospitals and MCH clinics in Hargeisa and Burao and coordinated an emergency mine-clearing project in the northwest.

Oxfam - conducted health programs and worked on rehabilitation of water systems in Boroma, Hargeisa, Burao, and Las Anod.

Rimfire (British company) - implemented an emergency mine-clearing operation in the north, under contract to MSF/Holland.

SCF/UK - maintained MCH and therapeutic feeding centers in Mogadishu and ran health programs in Boroma and Hargeisa.

SOS-Village - operated an orphanage and health clinics in Mogadishu.

Vetaid (British NGO) - conducted a veterinary program in Erigavo (funded by the British Government).

SUDAN - Drought/Civil Strife

Date: 1990 - 1991

Location: Drought in the west and many parts of Central, Eastern, and Northern States; civil strife in southern Sudan; displaced persons throughout the south, Southern Darfur and Kordofan, Central State, and Khartoum.

No. Dead: Unknown

No. Affected: 9 million (pop. 26 million)

Total USG Assistance: \$124,264,322

The Disaster

For a second consecutive year, much of Sudan suffered from insufficient and uneven rainfall. Extremely arid conditions resulted in almost total crop failures in traditional agricultural areas in Darfur, Kordofan, Central, and Eastern States, and a significant drop in output in the mechanized farming schemes. The result was a food production deficit of 1.8 million MT, and an emergency food aid requirement of 1.2 million MT in 1991, according to assessments by the FAO and the WFP. After two years of poor harvest, household food reserves were exhausted. Drought-related food shortages occurred throughout the entire country, affecting an estimated 4.5 million people, according to USAID/Sudan and FEWS.

In addition to severe drought conditions, the eight-year-old civil war between the Government of Sudan (GOS) and the Sudan People's Liberation Army (SPLA) continued, causing massive population displacement and disrupting agricultural activities throughout the south. USAID/Sudan estimated that an additional 4.5 million people were affected by civil strife in 1991.

As many as 800,000 refugees from Ethiopia, Zaire, Chad, Uganda, and Central African Republic also resided in Sudan in 1991. About one-half of the total received direct assistance from UNHCR and WFP. Others successfully integrated into Sudanese society and became largely self-sufficient. Following the overthrow of the Mengistu regime in Ethiopia in May, an influx of 52,000 Ethiopians, mainly former soldiers, crossed the border into the Kassala area of eastern Sudan. UNHCR launched a repatriation operation in August, and by

November, all of these refugees had been airlifted back to Ethiopia.

Another after-effect of the change in government in Ethiopia was the return of an estimated 270,000 Sudanese refugees to southeastern Sudan. The swampland area around the Sobat Basin, inaccessible by road, made it difficult to provide assistance to the returnees.

Overall economic conditions in Sudan deteriorated throughout 1991. There was a ten-fold increase in the price of staple food grains. Transportation costs associated with the movement of food also increased dramatically. The value of the Sudanese pound declined steadily while annual inflation reached an unprecedented 270%, the highest in Africa.

The Relief Effort

A major international relief operation was undertaken to avert massive drought-induced famine and to provide assistance to the millions of people displaced by the civil war in Sudan. Heavy fighting and general insecurity throughout southern Sudan, coupled with complex bureaucratic and logistical problems nationwide, made the delivery of emergency relief assistance an extremely difficult endeavor. Nevertheless, international donors responded to the emergency by pledging over 700,000 MT of relief food, together with financial resources for non-food assistance, valued at over \$250 million.

USAID/FEWS and NGOs operating in Sudan began voicing concern over the impending drought emergency as early as August 1990. It was not until a meeting in late February 1991 between Sudanese President Bashir and U.N. Undersecretary General Jonah, however, that the GOS officially acknowledged the emergency and agreed that the United Nations should serve as the primary umbrella agency for relief operations. It was determined that WFP, under the auspices of the Sudanese Government's Relief and Rehabilitation Commission (RRC), would be responsible for overall coordination of food aid, including port handling and primary transportation to regional hubs. The management of secondary transport and distribution operations was to be the responsibility of the NGOs, in conjunction with state and local relief committees.

During the February meeting, both the United Nations and the GOS reaffirmed their commitment to the principles of Operation Lifeline Sudan (OLS), which began in 1989 and allowed for safe passage of relief goods and personnel through conflict areas. However, "OLS II" expired in December 1990, and no formal agreement was reached for its continuation in 1991. Relief operations in southern Sudan, therefore, were carried out on an ad-hoc basis, subject to intermittent GOS and SPLA approvals. The split in the SPLA between rival factions in August further complicated relief efforts in the south.

Situation by State

Kordofan

By August 1990, SCF/US and CARE, operating PVOs in Northern Kordofan, began reporting signs of drought-related food shortages at the village level. USAID and FAO/GOS assessments in late 1990 confirmed almost complete crop failure in Northern Kordofan as a result of below average and poorly distributed rainfall. Scarcity of water and pastureland caused widespread livestock losses, and terms of trade between livestock and grain were worse than during the famine of 1984-85. Grain prices skyrocketed and household stocks were virtually exhausted. Water shortages were prevalent, especially in El Obeid, as people began moving into urban areas in search of food.

Although the full extent of the food deficit for 1991 had not yet been determined by the end of 1990, it was clear that a significant emergency response would be needed throughout the coming year. To expedite the emergency response, and to avoid a mass exodus of people from their villages, USAID allocated its remaining emergency food stocks from 1990, which were already available locally. SCF/US and CARE submitted emergency operations plans to USAID for the use of 30,000 MT of in-country stocks, to cover the period from November 1990 to March 1991, until such time as new food arrived for the 1991 drought relief programs.

In January 1991, SCF/US began distributing 9,328 MT from USAID in-country food stocks to an initial target population of 340,000 people in five rural councils of Um Ruwaba Province. As more USG food arrived in-country in March, SCF/US increased distributions to a

total of 525,000 people. By the end of 1991, SCF/US had distributed over 60,000 MT.

CARE began its emergency food distribution program in late 1990 with 21,000 MT from USAID in-country stocks, together with 5,000 MT of food donated by the British Government, to an initial target population of 850,000. With the arrival of new food shipments, CARE was able to cover a population of 1.5 million people in 23 rural councils in El Obeid, Bara, En Nahud, and Sodari Provinces. CARE, the largest distributor of relief food in the country, delivered over 144,000 MT to Northern Kordofan during 1991.

In Southern Kordofan, although the harvest was only one-tenth of original estimates, very limited relief reached the area. Widespread insecurity and hostile local authorities virtually paralyzed relief efforts. Furthermore, seasonal rains rendered large areas inaccessible by road transport during much of the year.

The Irish NGO, CONCERN, closed down its operations in the Muglad and Babanusa displaced persons' camps in January, in response to an increasing desire on the part of camp residents to return to their home areas. The camps had a combined population of 23,000. After receiving a three-month food ration from CONCERN, most of the displaced returned to their home areas in Bahr el Ghazal.

The Sudanese Red Crescent (SRC) reported an influx of 82,000 southern displaced people to Kadugli and Dilling in August. Insecurity, however, prevented substantial relief assistance from being provided.

Roads to Abyei were impassible for many months, and joint SRC/LRCS operations were able to distribute only a very limited amount of food. Abyei has traditionally been a crossroads for people moving through the country; thus, an accurate estimate of the number of displaced people was difficult to determine. Food stocks were low, and as the year progressed, malnutrition rates and incidents of malaria reportedly increased. The road to Abyei finally opened late in 1991, and limited assistance started arriving into the region.

In late August, USAID/Sudan supplied 8,140 MT of sorghum, lentils, and vegoil from in-country stocks, valued at \$2.1 million, to LRCS for distribution to over

500,000 people in Southern Kordofan for a period of two months. USAID also provided \$2.5 million in local currency to LRCS for the in-country transport, storage, and handling of these commodities.

Darfur

Almost total crop failure occurred in Darfur, and the total 1991 food aid requirement for the state was estimated by the United Nations to be over 200,000 MT. By mid-year, alarmingly high rates of malnutrition were being reported. Household stocks were depleted, and most people had sold or lost their livestock. Particularly hard hit were northern areas, such as Mellit, where people were reported to be barely surviving on roots and plants. In El Fasher, no drugs were available to combat a severe malaria epidemic and dysentery. Heavy tribal fighting in southern Darfur, around Zalingei and Nyala, caused the displacement of an estimated 100,000 people and prevented relief assistance from being delivered. Decreasing water supply and associated poor water quality contributed to the declining health status of the population.

By August, SCF/UK, the primary NGO in Darfur, had been able to deliver only a fraction of the total estimated 1991 relief requirements for Darfur, and its dispatch rate had plummeted to 35 MT per day. Various factors, including insufficient trucking capacity from El Obeid, reluctance of truckers to service Darfur, contractual problems, fuel shortages, poor relations with regional authorities, and increased insecurity and banditry, severely hampered relief deliveries. Heavy rains and flooding of "wadis" (seasonal rivers) in August further complicated the transportation problem and left many areas cut off from receiving any relief food.

At USAID/Sudan's request, WFP established an airlift from El Obeid to Darfur in August to deliver desperately needed emergency food and drug assistance to areas cut off from road transportation. OFDA contributed \$1 million to support this airlift. By the end of the year, WFP had airlifted 2,630 MT to Geneina and 1,034 MT to El Fasher. Also, by the end of the year, WFP had joined in a collaborative effort with SCF/UK, and overall food deliveries to Darfur increased markedly.

Khartoum

The number of displaced people living in the Khartoum metropolitan area during 1991 was estimated to be 1.8 million. Many had been displaced by civil conflict in the south, while others had fled drought-affected areas in search of food and an adequate water supply. Some of the displaced had been successfully integrated into the society, while others remained dependent on very limited relief assistance. The GOS greatly restricted NGO activity in the camps. High malnutrition rates among the displaced remained a concern throughout the year.

In early 1991, the GOS declared its intention to relocate 800,000 displaced persons from Khartoum by the end of the year. Donors and NGOs urged the GOS not to proceed with relocations until there were guarantees that sufficient food, water, shelter, and security would be provided in the relocation sites. In June, the GOS proceeded with the first relocation of several thousand displaced people to Jebel Awlia, a barren expanse of land 40 km. south of Khartoum where there were no sanitation facilities, inadequate health services, insufficient water supplies, and minimal employment opportunities.

OFDA provided a grant to ADRA to serve as the umbrella organization for eight smaller NGOs that distributed food to displaced persons in the Khartoum area. Relief food distributions to some 200,000 recipients were targeted at severely malnourished children and their families. ADRA received another OFDA grant to support health and nutrition activities of four NGOs working in Khartoum displaced camps.

Eastern and Central

USAID and FAO assessments early in 1991 indicated that insufficient rainfall resulted in almost 100% crop failure in much of the mechanized farmland areas of Gedaref. (Gedaref is Sudan's breadbasket, producing a large proportion of the sorghum for urban consumption.) Pastureland in the Red Sea Hills, an area highly dependent on livestock production, was severely depleted.

Early in the year, a Ministry of Health nutritional survey in one district of Red Sea Hills indicated that 70% of the children were malnourished, including 30% who suffered from severe malnutrition. In late February,

LRCS issued an international appeal for 30,000 MT of food aid needed to reach 450,000 beneficiaries in Red Sea Hills during 1991. Donors responded with the full amount, and LRCS began general food distributions in June. A total of 29 supplementary feeding centers were established by Action Internationale Contre la Faim (AICF), Islamic African Relief Agency (IARA), Oxfam, and LRCS.

WFP delivered food aid to 80 drop-off points in the Red Sea Hills. WFP sea deliveries of some 10,323 MT of food aid to South and North Tokar proceeded well throughout the year. In total, 51,442 MT of food aid was dispatched by WFP to the Eastern State during 1991.

In Central State, inadequate rains ruined several crops in the Kosti area. In Tendelti, a village west of Kosti, crops were completely lost. The beginning of 1991 found a total of 98,000 displaced people in Kosti - 38,000 living in three camps on the outskirts, and 60,000 settled in the town. Surveys by the Ministry of Health showed a dramatic rise in child mortality. Between February and October 1991, Irish CONCERN distributed approximately 37,000 MT of food aid to 680 Village Relief Committees, reaching some 420,000 beneficiaries in rural areas of Kosti Province.

Upper Nile

By early 1991, a critical food and water shortage had developed in the GOS-held town of Malakal. ICRC relief flights to Malakal had been suspended since September 1990, following the GOS refusal to allow the flights into SPLA-held areas. As many as 100,000 displaced people had moved into Malakal due to severe food shortages in surrounding areas. Military activity had cut the town off from overland food deliveries, and barge deliveries down the Sobat River were stalled in Kosti awaiting clearance from the GOS and SPLA. By mid-1991, food stocks had been depleted and deaths from starvation were being reported.

After the Mengistu regime in Ethiopia fell in late May, an estimated 270,000 Sudanese refugees left camps in western Ethiopia and flooded across the border into southeastern Sudan. Most of the returnees settled in the areas of Nasir, Akobo, Pochala, and Pakok, although some were able to move on to their home areas away from the border. Physical geography, security concerns,

and political maneuvering made delivery of relief aid to these areas extremely difficult and expensive.

A high-level U.N. delegation, headed by WFP Director James Ingram, visited President Bashir on June 15 and successfully negotiated an airdrop operation to Nasir using WFP-chartered aircraft out of Lokichokio, Kenya. WFP also obtained permission from the GOS and SPLA to supply relief supplies to Malakal and Nasir via barges from Kosti. By September, 1,800 MT of food had reached Nasir by airdrop and barge deliveries. USAID allocated 1,500 MT of food for cross-border transport to Nasir, and other areas with large returnee populations. OFDA supplied motor boats to distribute airdropped relief supplies, and plastic sheeting to serve as temporary shelter for the returnees. RP donated \$2 million to WFP and UNICEF for emergency assistance to the returnees.

The numbers of returnees in Pochala increased considerably by August to about 100,000, including 10,000 unaccompanied minors. A nutritional survey done by ICRC in late July/early August indicated that 25% to 30% of children under five were severely malnourished. The nutritional status of the unaccompanied minors was especially poor. The rainy season had cut off all ground transportation to the area. ICRC therefore initiated an airdrop operation to Pochala from Lokichokio to deliver urgently needed food and other relief supplies.

In Pakok, a desperate shortage of food and potable water caused a rapid deterioration in the health status of some 20,000 returnees, including 3,000 unaccompanied minors. Finally, in September, after tremendous pressure was exerted by the United Nations, NGOs, and donors, the GOS gave permission for an airdrop of 200 MT of food to Pakok, which provided some temporary relief. No further airdrops were allowed by the GOS, however, and death rates rose from 4.8 per 1,000 in July to 13.2 in October. By the end of the year, the road to Pakok opened and AICF began providing assistance, resulting in a marked improvement in the nutritional status of the returnees.

Bahr El Ghazal

By the end of 1990, drought-induced food shortages in northeastern Bahr el Ghazal prompted population movements northwards. Many people were also

displaced by continual civil unrest throughout the region. Insecurity and seasonal flooding severely restricted access by road to many towns in Bahr el Ghazal, and estimates of the number of people at risk in the region were difficult to determine.

Much of the region remained inaccessible during the first half of 1991. By June, the food situation had worsened, and the nutritional status of the population was extremely fragile. Finally, in late July, airlift operations to Wau resumed. By Sept. 1, the Dutch-funded WFP airlift from El Obeid delivered 612 MT of relief supplies, and the ICRC airlift from Khartoum delivered 795 MT of food, in addition to some seeds and tools.

On Sept. 2, an ICRC plane was destroyed, and the four-person crew was hurt, when it hit a mine on the runway at Wau. Both ICRC and WFP subsequently suspended all cargo flights into Wau. By the end of the year, emergency food stocks were quickly running out, and there was fear of large-scale starvation if relief food was not delivered in coming months.

Equatoria

The number of people dependent on relief food assistance in Juba during 1991 rose to over 211,000, 80% of the town's population. Although some food was available in the markets, prices were prohibitively high. Furthermore, although rains were good, planting was severely restricted due to a shortage of secure cropping area.

By mid-year, the GOS granted approval to resume OLS airlifts to Juba. The GOS also approved resumption of ICRC relief flights to Juba, Wau, and Malakal (GOS-held), as well as to Ler, Yirol, and Pochala (SPLA-held). LWF continued to operate its airlift to Juba from Nairobi. On July 23, WFP completed an airlift of 500 MT from Entebbe, Uganda, to Juba. The USAID-funded WFP airlift from Khartoum to Juba began in July, and had delivered 1,600 MT by September.

The USG emergency food distribution program for southern Sudan was implemented by two U.S.-based PVOs, CRS and WVRD. A total of 24,000 MT of commodities was transported across the Kenyan and Ugandan borders, and distributed to some 400,000 people in SPLA-held areas.

Significant financial resources were also provided by the USG to support non-food assistance programs in southern Sudan during 1991. OFDA provided grants to the following organizations: CRS for a seeds and tools distribution program in Torit; AICF for a health and sanitation program in Kajo Keji; MSF/Holland for an emergency health program in Ler; IRC for primary health care training in Kapoeta; and LWR for rehabilitation and drilling of water wells throughout Eastern Equatoria. OFDA also provided funding to UNICEF to support OLS air operations out of Lokichokio, a cattle vaccination program in the south, and provision of fishing equipment to returnees in the Nasir Basin.

By the end of 1991, stepped up fighting between GOS and SPLA, in addition to internal conflicts within the SPLA, resulted in further population displacement. An estimated 100,000 - 200,000 people fled the intra-SPLA fighting around Kongor and Bor, and about 10,000 crossed over the border into Uganda. Another 5,000 fled western Equatoria to the Central African Republic, and ICRC reported increasing numbers of wounded Sudanese crossing into Kenya.

Action Taken by the Government of Sudan (GOS)

After a series of meetings requested by donors with GOS officials, culminating with a meeting in late February 1991 between President Bashir and U.N. Undersecretary General Jonah, the GOS finally recognized that a severe national food emergency existed, and appealed to the international community for assistance in managing the relief effort. In March, the Ministry of Transportation and WFP reached an official agreement to facilitate the transport of relief commodities. No formal agreement was reached for the continuation of OLS in 1991, thus relief efforts in southern Sudan were carried out on an *ad-hoc* basis.

The RRC played a much less significant role than in previous years. Much of the responsibility for designating and allocating relief food was turned over to individual State Relief Committees (SRCs). The Commissioner of the RRC chaired the Operational Supervisory Group, made up of representatives from Military Intelligence, Security, Ministry of Foreign Affairs, the U.N. Secretary General's Special

Representative, and the major donors. The meeting served as an important forum for discussion and review of all relief operations.

Relations between the GOS and major donors, however, were strained. The GOS required organizations involved in emergency relief programs to use the official 12.2 exchange rate, which was a fraction of the commercial exchange rate available in Sudan. Although the GOS commercially imported over 600,000 MT of food in 1991, it donated less than 5,000 MT to the relief effort. In fact, implementation of relief efforts was undertaken primarily by NGOs. Far from cooperating with NGOs, the GOS often obstructed NGOs from operating effectively. Travel permits for expatriate staff were required and difficult to obtain, clearances through customs often took inordinate amounts of time and energy, NGO radios were seized, and relief flights were halted. GOS commandeering of trucks for military or commercial purposes was also a serious problem throughout the year, slowing off-take from the port, creating storage problems, and seriously hindering the expeditious delivery of relief supplies to needy areas.

Assistance Provided by the U.S. Government

U.S. Ambassador James Cheek declared the drought/civil strife disaster in Sudan on Oct. 1, 1990, determining that USG relief assistance would be needed throughout the coming year. The USG, through coordination among its various offices, played a substantial role in channeling food and financial support to relief efforts.

Below is a summary of all USG contributions to Sudan during fiscal year 1991.

OFDA Assistance

Relief food distribution and monitoring:

Grant to ADRA for emergency food aid program in Khartoum \$334,989

Grant to CARE for food aid monitoring and logistics in Kordofan..... \$840,042

Grant to SCF/US for emergency food distribution program in Kordofan \$579,111

Grant to CRS for support to local agencies handling/distributing USG food in the south \$21,697

Grant to WVRD to continue food delivery in the south..... \$487,102

Agricultural activities:

Grant to CRS to continue a seeds and tools program in the south..... \$1,015,860

Grant to UNICEF for cattle vaccination program in the south..... \$140,000

Grant to UNICEF for transport and distribution of fishing equipment to returnees in Nasir \$250,000

Health, nutrition and water projects:

Grant to ADRA for health and nutrition programs in Khartoum..... \$907,774

Grant to AICF for Kajo Keji health and sanitation program..... \$700,232

Grant to IRC to administer PVO Umbrella Project..... \$1,000,000

Grant to IRC for primary health care training programs in the south \$399,715

Grant to IRC for a medical team in Nasir..... \$68,138

Grant to LWR for rehabilitation and drilling of water wells in Eastern Equatoria..... \$239,430

Grant to MSF/Holland to support an emergency health program for displaced in Ler..... \$300,000

Airlift operations:

Grant to CRS for emergency food airlift to Juba \$252,500

Grant to UNDP for Khartoum-based air operations..... \$500,000

Grant to UNICEF for southern air operations out of Lokichokio, Kenya..... \$528,000

Grant to WFP for airlift
to Darfur \$1,000,000

Relief staff support and other:

Grant to UNDP to support staffing of emergency
unit in Khartoum \$300,000

Funding for port monitor at
Port Sudan \$24,000

Cost of 164 rolls of plastic sheeting for
temporary shelter for returnees \$47,528

Cost of DOD transport of 164 rolls of
plastic sheeting \$82,000

Purchase and airlift of five boats and parts for Nasir
emergency, including technical assistance \$86,567

Assessment mission to southern
Sudan \$46,825

Funding for relief assistance staff
and miscellaneous expenses \$304,412

FFP Assistance

FFP PVO Programs in Northern Sudan:

FFP provided a total of 192,000 MT of food, valued at
\$53,785,600 (including ocean freight and in-country
transport costs), through the following PVOs operating
in northern Sudan:

ADRA (Title II)	14,000 MT	\$4,391,600
CARE (Title II)	65,700 MT	\$19,598,100
(Section 416(b))	45,800 MT	\$11,217,700
SCF/US (Title II)	43,200 MT	\$13,287,100
(Section 416(b))	23,300 MT	\$5,291,100

In addition, FFP committed \$21.8 million to WFP for
primary transport of USG donated commodities to
regional centers in the north.

**FFP Title II Local Currency Generation Programs
(Title II, Section 202):**

A total of 100,400 MT of wheat and wheat flour, valued
at \$18,742,600, was sold to the GOS in 1991 to
generate local currency for the relief effort (see USAID/
Sudan below).

FFP PVO Programs in Southern Sudan:

FFP provided 12,170 MT of food, valued at
\$12,748,500 (including transport costs), to the following
PVOs operating in southern Sudan:

CRS	12,170 MT	\$11,846,200
WVRD	0 MT	\$902,300

Programs included commodities swapped with Kenya's
National Cereals Board for U.S. wheat, 16,000 MT of
FY 1990 carryover commodities, and commodities
shipped directly to Kenya. Value for swapped
commodities is calculated at U.S. commodity and freight
prices.

FFP Refugee Operations:

FFP provided 11,840 MT of Section 416(b) sorghum
and 1,293 MT of Title II vegoil, valued at \$4,731,700,
for refugee feeding in eastern Sudan through WFP's
protracted refugee operations.

USAID/Sudan Local Currency Expenditures

The USAID/Sudan managed over 350 million Sudanese
Pounds (\$42,000,000) generated through government-to-
government food agreements, including the provision of
100,400 MT of U.S. wheat (see FFP assistance above)
to the GOS. Local currency was used to support relief
food operations, as well as non-food emergency
programs. The availability of local currency provided by
the government-to-government programs (rather than
hard currency conversions), greatly reduced the actual
cost of program implementation in Sudan. *(Note: Dollar
figure for USAID/Sudan contribution is derived from
best estimates of exchange rates at time of program
implementation. It is not included in total USG figure
below).*

RP Assistance

In 1991, RP provided \$52.6 million to UNHCR and
\$27.5 million to ICRC for their Africa-wide programs, a
portion of which went towards operations in Sudan (not
included in total USG assistance). RP contributed \$2
million from the Emergency Refugee and Migration
Assistance fund to assist Sudanese returning from
Ethiopia, of which \$500,000 went to UNICEF for non-
food emergency assistance, and \$1.5 million to WFP for
the extraordinary transport costs of delivering food to
the returnees.

Total OFDA \$10,455,922
 Total FFP \$111,804,400
 Total RP \$2,000,000

TOTAL \$124,264,322

Assistance Provided by U.S. Voluntary Agencies

ADRA - managed umbrella grants for emergency food distribution, and health and nutrition activities in Khartoum displaced camps.

Air Serv International - (under contract with UNDP and UNICEF) provided air transport services throughout Sudan.

ARC - provided personnel and contributed \$30,000 to LRCS for the Red Sea Hills.

CARE - managed secondary transport and distribution of relief food in Northern Kordofan, and contributed \$3,345,000 from CARE/International affiliates and other non-governmental funding sources.

CRS - delivered relief food to Torit, Kaya, Juba, Bor, Kongor, and Nasir; conducted a seeds and tools program in Torit; and contributed \$850,000 from private funding sources.

IRC - provided health services to residents and displaced people in En Nahud; trained primary health care workers in Kapoeta; fielded an emergency medical team in Nasir; and contributed \$757,530 from private funding sources.

LWR - drilled and rehabilitated wells in Eastern Equatoria, and contributed to the LWF airlift operation in the south.

SCF/US - managed secondary transport and distribution of food in Um Ruwaba, Northern Kordofan, and contributed \$524,875 from private funding sources.

WVRD - provided support for transport, distribution and monitoring of relief food in the south; also provided seeds and tools, clothing, and medical supplies.

Assistance Provided by the International Community

International Organizations

EC - pledged 221,104 MT of food valued at \$107,534,752, and contributed \$6,000,000 of non-food assistance.

FAO - coordinated the provision of agricultural inputs, and conducted crop/harvest assessments.

ICRC - operated airlifts of food and relief supplies to both GOS-held and SPLA-held areas in the south.

LRCS - carried out emergency programs in Red Sea Hills and Southern Kordofan, and contributed 2,200 MT of food and \$154,930 for in-kind donations.

LWF - conducted airlift operations in the south.

UNICEF - coordinated all non-food relief activities in Sudan, and provided over-all coordination of relief programs in SPLA-held areas of the south, including managing a base camp in Lokichokio and an air service for all NGOs working in southern Sudan.

WFP - managed port operations and coordinated overland, air, and river transport of relief food, conducted food aid needs assessments, and contributed 25,000 MT of food worth \$11,075,000.

Governments

Australia - contributed \$2,985,000 in non-food assistance.

Austria - contributed 4,000 MT of food aid worth \$1,772,000, and \$244,078 of non-food aid.

Canada - contributed 42,233 MT of food worth \$19,684,219, and \$2,910,000 of non-food aid.

Denmark - donated \$1,179,188 of non-food aid.

Finland - donated \$1,061,007 of non-food aid.

France - contributed 1,000 MT of food aid worth \$443,000.

Germany - contributed 20,000 MT of food aid worth \$8,860,000, and \$794,782 of non-food aid.

Greece - contributed 4,000 MT of food aid worth \$1,772,000, and \$10,000 of non-food aid.

Ireland - contributed 1,400 MT of food worth \$620,200, and \$376,044 of non-food aid.

Italy - contributed 2,000 MT of food worth \$886,000, and \$1,143,206 of non-food aid.

Japan - contributed 10,500 MT of food worth \$4,651,500, and \$226,594 of non-food aid.

Netherlands - contributed 25,400 MT of food worth \$11,252,200, and \$4,102,829 of non-food aid.

Norway - contributed \$1,670,189 of non-food aid.

Sweden - contributed \$5,429,335 of non-food aid.

Switzerland - contributed \$50,000 of non-food aid.

United Kingdom - contributed 77,923 MT of food, together with non-food assistance totaling \$49,000,000.

Non-Governmental Organizations

AICF/France - operated health, nutrition, and water programs in Juba, Kajo Keji, and Nasir, and contributed \$67,000 from private funding sources.

Combined Agencies Relief Team (CART) - a consortium of Sudanese and international NGOs, distributed food, seeds, and tools in Juba.

CONCERN (Ireland) - distributed food aid in Central Region, provided assistance to Khartoum displaced, and contributed \$1,635,000 from private funding sources.

GOAL (Ireland) - operated health and nutrition programs for Khartoum displaced, and contributed \$189,000 from private funding sources.

MSF/Holland- provided health care assistance and supplementary feeding to displaced people in Ler, and contributed \$120,000 from private funding sources.

Norwegian Church Aid - contributed 4,500 MT of food aid worth \$1,993,500 for distribution in southern Sudan.

Oxfam/UK - conducted supplementary feeding and livestock feeding programs in Red Sea Hills; established food distribution in the west, and health and nutrition programs in Juba; supported displaced persons in Khartoum; and contributed \$1,636,385 from private funding sources.

Individual Red Cross societies from the following countries made cash and/or in-kind contributions:

Canada - \$49,854
Denmark - \$322,130
Greece - \$5,563
Italy - \$11,549
Japan - \$381,095
Netherlands - \$176,076
Norway - \$169,768
Switzerland - \$68,892
United Kingdom - \$722,535

SCF/UK - conducted emergency food distributions and supplementary feeding programs in Darfur.

Sudanese and regional NGOs - provided food and non-food assistance to vulnerable groups throughout the country. The most prominent include Sudanese Red Crescent, Sudan Council of Churches, New Sudan Council of Churches, Sudanaid, Islamic African Relief Agency, and Dawa Islamia.

WEST AFRICA -

Civil Strife/Displaced Persons

Date: Fighting began on Dec. 24, 1989, continued through 1991, and remains active as of this writing.

Location: All of Liberia, Cote d'Ivoire, Guinea, and Sierra Leone.

No. Dead: The exact number killed is unknown, but estimates range to 10,000 during the period covered by this report, and from 15,000 to 20,000 since the beginning of the war. The actual number might be even higher.

No. Affected: About 1.2 million displaced persons in Liberia and approximately 750,000 Liberian refugees in Guinea, Cote d'Ivoire, Sierra Leone, Ghana, Nigeria, and Mali. In Sierra Leone about 145,000 Sierra Leoneans have also been displaced; another 97,000 have sought refuge in Guinea, and an estimated 12,000 remain in Taylor-occupied territory in Liberia.

Total USG Assistance: \$88,613,973

The Disaster

On Dec. 24, 1989, a rebel force of 100 led by Charles Taylor invaded villages in Nimba County in northeastern Liberia and seized government installations, with the intent to overthrow the Doe government. In defense, President Doe dispatched his armed forces to oust the guerrillas. However, the Government of Liberia (GOL) proved unable to eject Taylor's troops from their strongholds. The rebel offensive increased in size and strength and spread to other areas of the country, starting the civil war that continues to cause numerous civilian deaths.

Nimba County, the first area hit by the civil strife, is also the most fertile area of the country. Thus, when prolonged fighting resulted in the displacement of masses of people, hardly any inhabitants were left to replant fields for the next farming season. In addition, the bulk of that year's harvest was destroyed, leading to severe food shortages.

The civil strife is based primarily on historical ethnic animosities (the Gio and Mano have always been

enemies of the Krahn tribe). The largely Krahn Armed Forces of Liberia (AFL) brutally attacked and massacred members of the Gio and Mano tribes, whom the AFL considered to be the rebels' ethnic supporters. Likewise, Taylor's Gio and Mano-based National Patriotic Front of Liberia (NPFL) retaliated against Mandingos and Krahns, because of those groups' allegiance to the Doe government.

The fighting escalated in 1990, when part of the NPFL broke off to form a new guerilla faction called the Independent National Patriotic Front of Liberia (INPFL) under Prince Johnson. Each warring faction forcefully claimed certain areas of the country as its territory, and the country was partitioned into three jurisdictions, the largest of which was held by Charles Taylor and his forces. Each group used extremely violent means to secure its territory and launched attacks against its adversaries' territories, killing thousands of innocent civilians throughout the nation.

Thousands of Liberians fled for their lives to other areas of the country and to neighboring African countries. In 1991, at least 1.2 million displaced persons in Liberia were desperately in need of relief. An estimated 750,000 Liberian refugees were receiving emergency assistance: about 325,000 in Guinea; approximately 228,000 in Cote d'Ivoire; at least 125,000 in Sierra Leone (many were unaccounted for); about 6,000 in Ghana; and about 1,600 in Nigeria. Countless Liberians relocated to the United States, Europe, and other parts of the world. There was also a mass exodus of expatriates out of Liberia to nearby nations and to their respective homelands.

In 1990, the Economic Community of West African States (ECOWAS) dispatched a five-nation West African peace-keeping unit, ECOMOG (Economic Community Monitoring Group), comprised of troops from Sierra Leone, Guinea, Gambia, Nigeria, and Ghana, to help restore peace and order in Liberia. ECOMOG aimed to reduce the presence of the AFL and the INPFL in the capital city of Monrovia, and that of the NPFL in other parts of the country. The peace process was further complicated and delayed by several events: Doe's brutal execution in Prince Johnson's camp on Sept. 9, 1990; the mid-1991 formation of yet another guerrilla group, ULIMO, comprised largely of Krahn ex-AFL soldiers against Charles Taylor's forces; and the

NPFL incursion into Sierra Leone in March 1991, displacing approximately 145,000 Sierra Leoneans, causing another 97,000 to flee to neighboring Guinea, and leaving another 12,000 trapped in Taylor-held areas. Due to continued fighting, ECOMOG is still in Liberia.

From June 28-29, 1991, five heads of state from Cote d'Ivoire, Nigeria, Burkina Faso, Gambia, and Togo, as well as Liberian interim President Sawyer and NPFL leader Taylor, convened in Yamoussoukro, Cote d'Ivoire, and agreed to hold elections in Liberia. Shortly after that, U.N. special coordinator, Ross Mountain, met with interim President Sawyer and NPFL leader Taylor to determine principles which would govern relief programs and other U.N. operations throughout Liberia. He announced the establishment of operational centers in Cbarnga and stressed the political neutrality of international emergency assistance, as well as the need for relief workers to be assured of safe passage to enable them to effectively perform their tasks.

On Sept. 17, 1991, in Yamoussoukro, Cote d'Ivoire, Taylor and Sawyer concurred on the reconfiguration of ECOMOG and the deployment of Senegalese troops to Liberia. Charles Taylor also stated that he and his troops were willing to disarm and remain in camp. However he did not specify the date that such an action would come to pass. At the end of October 1991, the concerned parties once more convened in Yamoussoukro. The purpose of that summit was for all belligerent groups to meet to discuss more definite plans to demobilize.

Since October 1991, when the concerned parties took steps to implement the Yamoussoukro Peace Accord, the disarmament and demobilization process seemed to be gradually becoming a reality. ULIMO appeared to be fading as a political competitor, making one less warring faction to contend with and thereby facilitating peace-making efforts. Dr. Amos Sawyer seemed relatively convinced that Charles Taylor would abide by the Yamoussoukro peace efforts. Many opined that NPFL forces were war-weary and that Charles Taylor wanted to improve his standing in order to actively participate in the electoral process. Major roads were opened, stores and other businesses began functioning, schools resumed their activities, and the press resumed printing newspapers. It seemed as if the 21-month old civil war would finally end.

A five-member electoral commission consisting of two NPFL and two IGNU members and one other person nominated by those members, as well as an *ad hoc* Supreme Court, were established. It was decided that Cote d'Ivoire would supervise the Court's adjudication over electoral problems and issues dealing with the 1985 Liberian constitution. Former U.S. President Jimmy Carter's International Negotiation Network, which participated in the Yamoussoukro peace talks, was also charged with monitoring the elections which are scheduled to be held in 1992. As elections are contingent upon the repatriation of Liberian refugees, plans were made to reduce amounts of relief food rations provided to Liberian refugees in neighboring African countries, to encourage them to return to their homeland.

By early 1992, however, ULIMO had resurfaced as a political contender, and Charles Taylor and Prince Johnson had reneged on the peace agreements decided upon at Yamoussoukro by not disarming and putting their forces in camps. Widespread human rights violations persist, and roads that were to have been opened remain closed. International relief agencies have not only undergone extreme difficulties in pursuing their objectives, but their staff members have also had their lives threatened and relief equipment confiscated by various guerilla factions. Unfortunately, the fighting in Liberia has resumed and continues. It is uncertain when, or if the peace process will finally reach fruition. (*For further background information on the disaster situation, see "West Africa -Displaced Persons" in the FY 1990 OFDA Annual Report.*)

Action Taken by the Interim Government of National Unity of Liberia (IGNU) and Non-Governmental Organizations

Interim President Amos Sawyer participated in the Yamoussoukro meeting of Aug. 17, 1991. At the end of October 1991, he visited the United States to discuss plans to further his objective of securing a lasting peace for Liberia. Relevant interim government ministries talked frequently with concerned U.N. agencies, NGOs/PVOs, USAID officials, and representatives from the U.S. Embassy's Economic Section at meetings held by the U.N. Coordinating Committee. These groups convened to determine an efficient means of distributing food to the most vulnerable groups in the country, to

plan monetization of small quantities of relief rice, and to discuss the resettlement of returnees. In addition, the IGNU made port warehouses with a total capacity of 10,000 MT available to donor agencies and waived all berth, discharge, and storage dues for relief cargoes.

To alleviate sanitation problems and combat the rise of diseases, from mid-November 1991 to December 1991, IGNU, with the help of the ICRC and UNICEF, launched a massive clean-up campaign for the capital city of Monrovia to get rid of the garbage in the streets that had accumulated during the state of siege. IGNU also issued appeals to the international community to provide Liberia with technical, financial, and material assistance to facilitate the repatriation and resettlement of Liberian refugees/returnees and displaced persons, and requested help to rehabilitate combatants. IGNU believed the aforementioned steps were necessary to hold democratic elections in Liberia. In addition, the IGOL engaged in efforts to reduce the size of the current civil service so that the next government would not have to undertake such unpopular steps.

Liberian NGOs and private citizens also participated in the relief effort. (Some confirmed contributions are listed below. However, there may be many more local donors than these.) In late May, the Christian Health Association of Liberia (CHAL) made a cash contribution of \$5,000 in support of emergency activities carried out by the Liberian Catholic Secretariat. CHAL was also in charge of operating the Phoebe Hospital in Gbanga, a Taylor-held area. The Liberian Red Cross distributed tents, medicine, food, and cooking equipment donated by the ICRC at returnee reception centers, and conducted surveys of educational facilities and resources. LICORE (Liberian Committee for Resettlement and Reconstruction), a U.S.-based Liberian group, served as an information center for the Liberian Community in the U.S. In mid-November, LICORE coordinated several humanitarian flights carrying 32 MT of used clothing, education supplies, and other sundries via DOD. LICORE also arranged the reunion of several children from Taylor-held areas with their parents in Monrovia. The National Muslim Congress of Liberia made several donations of clothing, oil, and rice in support of relief activities. Special Emergency Life Food (SELF), a local grassroots agency, has coordinated

several food distribution programs for schools and the general populace.

Action Taken by the Government of Sierra Leone (GOSL)

The GOSL cooperated with international organizations in providing emergency assistance for the thousands of Liberian refugees in its country. It also dispatched troops to join the ECOMOG contingent. By 1991, an estimated 125,000 Liberian refugees resided in Sierra Leone. However, the actual number was possibly higher as many Liberians taken into the homes of Sierra Leoneans were not reported. The GOSL was overburdened by the large Liberian refugee population and informed UNHCR that Sierra Leone would be unable to accept additional refugees. The WFP experienced great difficulties in maintaining an adequate food pipeline in Sierra Leone. The WFP sent an assessment team in mid-November to review food needs in the country.

The violent March 1991 NPFL incursion into Sierra Leone caused the country to suffer tremendously. Approximately 145,000 people were displaced from their homes and 97,000 sought refuge in Guinea. Relief agencies providing food and medical assistance in the affected areas included CRS, Action International Contre la Faim (AICF), MSF/France, Africare, and several local NGOs.

Action Taken by the Government of Guinea (GOG)

The USAID office in Guinea reported that the GOG spent about \$300,000 to assist victims of the Liberian conflict. The estimated number of refugees in that country was 439,000 (342,000 Liberian and 97,000 Sierra Leoneans), most of whom resided in the Guinea Forest region.

Action Taken by the Government of Cote d'Ivoire (GOCI)

The GOCI continued to provide emergency assistance to the 227,562 Liberian refugees residing in Cote d'Ivoire.

Grant to ARC to trace and send messages to Liberian displaced persons \$83,713

Grant to CDC for refugee health assessment services \$17,137

RP spent a total of \$6,900,850 on programs in Liberia.

Other Countries

RP contributed \$371,805 through Africare for seeds and tools for refugees in Cote d'Ivoire and \$63,528 through IRC to finance education services (including health education) for refugees in Guinea.

Total OFDA \$4,970,790
Total FFP..... \$76,307,000
Total RP \$7,336,183

TOTAL USG \$88,613,973

Assistance Provided by U.S. Voluntary Agencies

(Note: Totals for U.S. Voluntary Agencies and the International Community reflect confirmed contributions to all affected countries in West Africa. It was not always possible to separate donations specifically for Liberia, Sierra Leone, Cote d'Ivoire, or Guinea. Also, since this is a continuing disaster, some PVO and International contributions may be double counted in the FY 1990 and FY 1991 reports.)

ADRA - implemented a variety of relief activities financed by Liberia Lifeline, a \$651,000 multi-donor grant and other bilateral funds. ADRA's efforts, which were carried out at a total cost of about \$10,471,271, included opening a central Liberia office in Monrovia and a relief goods warehouse/distribution center at Konola Academy in Taylor-held territory. Simultaneously, ADRA established a refugee reception center in Danane, Cote d'Ivoire to provide over 300 Liberian refugees with food, clothing, and reading materials. The center provided refugees with shelter for a maximum of 10 days, after which refugees were registered with UNHCR and assisted in finding permanent housing. ADRA also ran the SwedeRelief Hospital in Monrovia and commenced efforts to merge that health facility with the larger Cooper Memorial Hospital following the rehabilitation of the latter. ADRA conducted a daily school feeding program for over

40,000 school children in Monrovia. It also distributed food supplies provided by UNICEF to about 51,000 beneficiaries in 500 Liberian communities, each for three months. Through a rotating loan program, ADRA distributed 36 tons of seed rice (provided by WVRD, the South Pacific Division of the Seventh-day Adventists, and the Dutch government) to approximately 2,000 Liberian farmers.

African-American Institute - The African-American Institute in New York instituted and operated Liberia Watch, a network of Liberian and U.S. interest groups concerned about the Liberian conflict. The network comprises several committees: a ham radio committee; a transfer of funds committee; an education committee; a publicity committee; and a newsletter committee.

Africare - sent a representative to Sierra Leone, provided logistics and medical support to the Sierra Leone Red Cross, and assisted in the implementation of supplementary feeding programs. Africare also gave \$250,057 worth of clothes, sandals, farm implements, and vegetable gardening utensils and seeds.

ARC - donated \$50,000 through the LRCS and \$26,000 through the ICRC towards the Liberian emergency assistance efforts.

CARE - provided plastic sheeting and tools for the construction of temporary shelter for Liberian refugees in Sierra Leone.

CRS - was active in Monrovia from May to August 1990, and resumed its efforts there after October 1990. It collaborated with WFP in organizing the port of Monrovia and conducted food distributions with the assistance of the local NGO, SELF. CRS also provided and distributed 500 MT of seeds to victims all over the country. In addition to its Monrovia activities, CRS opened an office in Buchanan in early September 1990. In 1991, CRS allotted about \$642,000 in private funds for emergency programs in nearby African countries affected by the Liberian crisis.

CWS - reopened the former Seventh Day Adventist Cooper Clinic in Sinkor, Monrovia, in order to provide medical care to those in need. Program costs were approximately \$300,000.

LAC - (The Liberian Agricultural Company), an American-owned rubber plantation based in Liberia, supplied thousands of victims of the Liberian civil strife with food and shelter. LAC also collaborated with some local and international organizations in providing additional emergency aid to other affected areas of the country.

LWR - gave a grant of \$40,000 to the local Lutheran World Federation in support of their relief assistance efforts during the Liberian crisis.

MAP - contributed about \$5,169,420.

U.S. Committee for UNICEF - gave \$150,000.

U.S. private groups - raised \$71,000 donated to UNICEF in response to the Liberian emergency appeal.

Women's Commission for Refugee Women and Children - dispatched an assessment delegation to Cote d'Ivoire, Guinea, Sierra Leone, and Monrovia.

WVRD - contributed \$10,000 for the local purchase of rice to feed Liberian refugees in Sierra Leone, and gave 24 tons of seed rice to ADRA for distribution to Liberian farmers residing in the Konola Academy area.

Assistance Provided by the International Community

International Organizations

EC - issued a \$5,400,000 emergency grant for the Liberian crisis in March 1991. The funds were to finance food and medical programs to be carried out by WFP, MSF, LWF, and CONCERN. On April 29, 1991, the EC gave another grant of \$743,400 to further assist the victims of Liberia's civil strife. The 1991 EC cash contribution to UNICEF equaled \$1,538,461.

ICRC - together with the GOL and the Liberian public, implemented a city-wide cleaning campaign in Monrovia using food-for-work schemes. ICRC dispatched a water expert to Liberia to facilitate additional water restoration efforts, resulting in the building of 38 wells in Monrovia and 11 in NPFL territory. In addition, ICRC provided relief services to both Monrovia and NPFL-controlled areas.

LRCS - engaged in partnership efforts with UNHCR in Guinea, Cote d'Ivoire, and Sierra Leone, and contributed \$2,900,000 for food and transportation. LRCS also distributed food to over 100,000 refugees in Sierra Leone and supplied tents, medicine, and cooking equipment to the Liberian Red Cross for the returnee reception centers in Monrovia.

MSF/Belgium - provided ADRA with 1,247 bags of rice to be distributed to 38,000 Liberians during a two-month period.

UNDRO - gave \$30,000 in support of emergency activities in Sierra Leone. UNDRO also chartered a relief flight to Monrovia for NGOs who were not at the time represented in Liberia to assess the situation and make plans for a return to Liberia. In addition, UNDRO was actively involved in efforts to improve communications in Liberia.

UNHCR - assisted Liberian refugees in neighboring African countries. Pledges totaling \$16,100,000 were received in response to UNHCR's 1990 appeal for \$15,900,000 million. (*Note: 1991 contributions were expected to be closer to \$25,000,000.*) UNHCR also drafted a plan for a future repatriation of Liberians to the homeland.

UNICEF - contributed \$200,000 in medical and hygiene assistance to Liberian displaced persons, and contracted electrical consultants to expand the electrical-generating capacity of the Liberian Electrical Company. UNICEF also aided in improving water and sanitation facilities in Sierra Leone, Guinea, and Cote d'Ivoire, and continues to implement a vaccination program in Cote d'Ivoire. In addition, UNICEF pledged \$358,000 worth of medical assistance for displaced persons in Sierra Leone. UNICEF provided ADRA with commodities for a school feeding program. Lastly, UNICEF received cash contributions totaling \$8,045,092 from the following governments and national committees for UNICEF: Canada, Denmark, Finland, Japan, the Netherlands, Norway, Sweden, and the United Kingdom.

WFP - allocated \$1,860,000 from its emergency logistics fund for emergency services for the disaster victims, and appealed for cash contributions for logistics and staffing from international donors. WFP supplied food to the interior of Liberia through Lutheran World

Service in Cape Mount County, through MSF/France in Bomi County, and through MSF/Belgium in the northeastern part of Liberia. WFP was also in charge of mobilizing food aid for Cote d'Ivoire, Sierra Leone, and Guinea. The two-member OFDA team that visited Guinea in August 1991 reported that WFP had sufficient supplies of food for the 342,000 refugees in Guinea. Lastly, WFP provided corn, beans, and other vegetables to CRS for its food programs. WFP also supplied ADRA with 334.5 MT of edible rice, 33.4 MT of fish, and 33.4 MT of cooking oil for a food distribution program to Liberian communities in Monrovia and in Abidjan.

Governments

Australia - provided \$4,000,000 and seven volunteers to ADRA to run schools in Liberia.

Canada - gave funds to ADRA for the repair and re-equipping of Liberian schools and the Cooper Memorial Hospital.

Denmark - provided \$2,600,000 in financial aid and relief services, including a vehicle donation through DANIDA to ADRA consisting of two 10-ton trucks, one 8-ton truck, one pickup, and fuel for relief program operations.

Netherlands - gave funds to ADRA via its embassy in Cote d' Ivoire for the purchase of 12 tons of seed rice to be used in a rotating loan program for Liberian farmers.

Norway - supplied ADRA with five trucks to transport emergency goods.

Sweden - ran the SwedeRelief Hospital until October 1991, and contributed funds to ADRA towards rebuilding and refurbishing health facilities.

The following governments contributed largely through UNHCR, LCRS, ICRC, and through the multi-donor grant called Liberia Lifeline:

Belgium, Cote d'Ivoire, Finland, France, Germany, Guinea, Japan, Ireland, Italy, Korea, Liechtenstein, Spain, Switzerland, and the United Kingdom.

OTHER AFRICA

DECLARED DISASTERS

BENIN - Floods

From early July to mid-August 1991, heavy rain storms hit Benin, causing extensive flooding in the southern departments of Zou, De l'Atlantique, and surrounding areas. Nearly 10,000 ha. of farmland were completely submerged in Oueme region, the sub-prefectures of Zangnanado, Quinhi, and Zogohodome, and the neighboring towns of the department of Zou, wiping out 1,600 ha. of maize, niebe, and manioc crops. In the department of De l'Atlantique, the city of Cotonou (pop. 700,000) was hardest hit. Out of its 144 neighborhoods, 96 were completely inundated, and 33 were partially damaged. No deaths were reported, and the total number of persons affected was not determined.

On July 18, the Government of Benin (GOB) appealed to local and foreign donors to provide material resources and human technical services to help alleviate the effects of the deluge. Needed were heavy-duty machinery, tools, fuel and lubricants, tents, blankets, food, medicine, and clothes, as well as municipal workers, fire brigades, and military engineers. The GOB took preliminary steps by evacuating the affected population in Zou and distributing medicines and second-hand clothing to the disaster victims. The GOB also procured fuel, paid to repair available machinery, and financed some local rescue units. In addition, local technicians took measures to prevent further flooding in Cotonou.

On July 17, U.S. Ambassador Harriet W. Isom determined that the emergency warranted USG assistance. Accordingly, she released \$6,347 under her Disaster Assistance Authority for the purchase and distribution of medical supplies through Cathwell/CRS. In addition, Cathwell/CRS donated 103 MT of food supplies towards the relief effort.

International donor contributions to the Benin flood victims were coordinated by UNDRO/UNDP at the request of the GOB. UNDRO made an emergency grant of \$20,000 for the local purchase of relief items. UNICEF provided 200,000 packets of rehydration salts and other medicines valued at \$20,077. WHO gave 250,000 anti-cholera tetracycline tablets and cash for logistics support totaling \$15,750. Fonds African de Garantie et de Cooperation Economique provided approximately \$911,458 for the purchase of fuel. Canada donated medicine, tents, blankets, and clothes

worth \$21,930 through the LRCS. Lastly, Germany contributed medical supplies, fuel, and boots worth \$54,000 and sent voluntary technical teams to Benin.

TOTAL USG

\$6,347

CAMEROON - Food Shortage

A drought during the 1990 growing season in Cameroon's northern province devastated production of millet and sorghum, the area's staple foods. The food shortage, which affected 186,900 people, was aggravated by the presence of an estimated 3,500 Chadian refugees in the affected area. Locust infestation also threatened future crop production.

In December 1990, the Government of Cameroon requested donor assistance to help the country meet its shortfall of food grains. On Dec. 7, U.S. Ambassador Frances D. Cook declared that the food scarcity constituted a disaster and exercised his authority to release \$24,269 to purchase local food. WFP approved an emergency aid package consisting of 5,046 MT of rice and 336 MT of vegoil, valued at \$2.34 million. Other international assistance flowed from a \$13 million WFP emergency food distribution project aimed at over one million drought victims in Cameroon, Chad, and Niger.

TOTAL USG

\$24,269

CHAD - Civil Strife/Drought

Fighting broke out in November 1990 in the border regions of Chad's eastern Biltine Prefecture, as opposition forces began their march towards N'Djamena that culminated in the Dec. 1 overthrow of the Habre government. The population of this zone suffered severe hardship due to the combined effects of the armed conflict, a disastrous agricultural season, and reported persecution because of tribal affiliation with the rebels. Several pitched battles in the localities of Tine, Bahai, Berdoba, and Iriba forced many people to flee the area, abandoning their villages and leaving behind their livestock and personal possessions, which were lost or stolen. Village grain reserves were looted, and normal economic activities were disrupted. The number of disaster victims could not be ascertained due to the lack of accurate census figures. Authorities in the town of

On May 26, U.S. Ambassador Robert S. Barrett determined that a disaster existed due to the situation of Ethiopians in Djibouti who were awaiting a safe return to their homes. Approximately \$20,000 of the Ambassador's Authority was donated to ONARS, as a reimbursement for the purchase of emergency food. The remaining \$5,000 was contributed towards medical expenses incurred during the refugee crisis.

TOTAL USG \$25,000

ETHIOPIA - Explosion

On June 4, just before dawn, a major ammunition depot in southern Addis Ababa exploded, leading to fires that devastated a residential area of four square kilometers. The Ethiopian Red Cross Society reported that more than 100 people were killed, 200 were injured, and thousands were displaced by the explosion and subsequent fires. Area hospitals admitted 136 burn and blast victims. Shocks and fires from blasts over a four hour period, plus small fires started by secondary explosions, leveled several shanty homes, completely or partially destroyed 20 businesses, and caused major damage to several houses, a Pepsi-Cola bottling plant, and offices of the Ethiopian Freight Transport Corporation. Due to two prior explosions on May 27 and 28 at other ammunition sites, many officials of the interim government of Ethiopia suspected sabotage by elements of the former regime.

City fire brigades battled the blaze at the disaster site throughout the day, and managed to prevent fires from spreading to several nearby fuel storage depots. A government relief coordinating committee, composed of the Commissioner of the Relief and Rehabilitation Commission (RRC), representatives of the Relief Society of Tigray, and the Ethiopian Relief Organization, visited the disaster site to assess needs. On behalf of the interim government, the committee appealed for assistance from the international community to alleviate the suffering of the disaster victims.

On June 6, Charge d'Affaires Robert Houdek declared that, as a result of the arsenal explosion, Addis Ababa was suffering a disaster beyond the host country's ability to respond adequately. A total of \$25,000 was

donated to the RRC for government relief efforts which assisted the victims of the explosion.

TOTAL USG \$25,000

GUINEA-BISSAU - Displaced Persons

In the neighboring country of Senegal in the 1980s, a clandestine separatist group, the Movement of Democratic Forces of Casamance (MFDC), arose among the Diola communities of the southern province of Casamance. Since that time, the MFDC has repeatedly posed a severe threat to the stability of the Diouf government of Senegal, resulting in frequent clashes between the MFDC and the Senegalese security forces. Ambushes and raids between the belligerents continued in mid-1990, following the arrests of several MFDC members, including the head of the movement, Abbe Diamacoune Senghor.

The fighting escalated and reached greater levels of brutality from September through October 1990, when the Senegalese government dispatched reinforcements of the Senegalese military and Gendarme forces to the Ziguinchor Region of Lower Casamance to launch a massive attack against separatists and alleged separatist sympathizers. Fearing violence at the hands of the Senegalese Armed Forces and the Casamance Separatists, more than 1,000 Senegalese civilians fled into the northwestern and northcentral regions of nearby Guinea-Bissau. The refugees attested that the aggressors accused them of supporting separatist activities. Despite their denials of those charges, many of their people were arrested, wounded, and killed, and their homes razed.

In most instances, the refugees, 70 to 80 of whom were women and children, arrived with nothing but the clothes on their backs and were taken into the homes of Guinea-Bissauan villagers in the northwestern region of the country. The refugees shared ethnic/linguistic ties with the Guinea-Bissauan villagers with whom they sought asylum (Senegalese Fula and Manjack groups being similar to the Guinea-Bissauan Fula, Felupe, and Manjaco peoples). These small host villages were already living at a subsistence level prior to the coming of the Senegalese refugees, and their arrival coincided with the Guinea-Bissauan hungry season, when food (especially rice) is particularly scarce.

The U.S. Ambassador and USAID Director together with Guinea-Bissauan officials and representatives from donor agencies traveled north to visit refugees in both Bachile and Sao Domingos on Oct. 20, 1990. There, refugee spokespersons appealed for food and other assistance needed to begin a new life in Guinea-Bissau. Although the Government of Guinea-Bissau provided refugees with unused farmland to cultivate, it did not have the resources to fulfill all the refugees' basic needs. Thus, on Oct. 29, UNDP and UNHCR, together with the Northern Region Governor, issued a joint appeal to international donors to provide relief assistance to the Senegalese refugees residing in Guinea-Bissau.

In response to the appeal for help, U.S. Ambassador George A. Trail III declared on Oct. 23, 1990, that the grave situation warranted USG assistance. He released \$25,000 under his Disaster Assistance Authority to aid the communities most adversely affected by the arrival of the Senegalese refugees. The funds were allocated to Africare for the local purchase and distribution of food and other emergency supplies (over 15 tons of rice, 200 cooking pots with utensils, 400 machetes, and 400 20-liter buckets) to Senegalese refugees in northern Guinea-Bissau. Africare also used the funds to extend their short-term contract with a former Peace Corps volunteer to monitor the distribution of relief supplies and arrange bush taxi delivery to areas inaccessible to heavy trucks. *(Note: Refugee relief issues are primarily the domain of the Refugee Bureau of the Department of State; however OFDA responded in this instance because of the impact that the sudden influx of an estimated 2,000 plus refugees would have on the aforementioned Guinea-Bissauan villages.)*

Other international donors included the following: UNHCR (\$30,000 follow-on funding towards Africare's efforts, in addition to the two visits of the UNHCR Resident Representative in Dakar to inspect and participate in discussions on the Africare project); UNICEF (\$15,000 for agricultural/fishing implements); WFP (cooking oil, onions, tomato paste, sugar, and canned fish, to supplement USG purchases); and France (limited foodstuffs).

TOTAL USG \$25,000

MADAGASCAR - Civil Strife

Violence broke out during a protest march on the presidential palace in Antananarivo on Aug. 10, 1991, leaving at least 250 people seriously wounded. Three public hospitals in the capital were overwhelmed by the number of shooting victims and appealed to UNICEF to procure a list of desperately needed medicine and equipment. UNICEF provided \$16,000 worth of locally procured medical supplies, enough for a seven-day requirement or about one-third of the total amount needed. To meet the deficit, UNICEF appealed to other donors.

On August 15, U.S. Ambassador Howard K. Walker responded to the UNICEF appeal with an official disaster declaration and made \$25,000 available from disaster funds. On Aug. 23, USAID/Madagascar and UNICEF distributed most of the OFDA-funded medical supplies (antibiotics and vaccines) to the three public hospitals treating the wounded.

Other donors included the EC, which provided \$44,211 to MSF for the disaster victims.

TOTAL USG \$25,000

MAURITIUS - Cyclone

From Jan. 29 through Feb. 2, 1991, Cyclone Bella swept through Mauritius, leaving a trail of destruction on Rodrigues, the country's least developed island. Winds up to 210 kph. razed the island's houses and demolished its roads and infrastructure. Electricity and water sources were depleted and communications were cut off. Also, as a result of the cyclone, Rodrigues' crops and livestock were almost completely wiped out.

U.S. Ambassador Penne Percy Korth's disaster declaration on Feb. 5, pledged \$25,000 in emergency assistance to aid the government and people of Mauritius in dealing with this crisis. Other major donors to the Rodrigues' relief effort were France, Britain, and India.

TOTAL USG \$25,000

USAID/Niamey used the Ambassador's Authority to make a \$16,000 grant to CARE for an emergency food-for-work program, and a \$6,000 grant to the LRCS for emergency food distribution. FFP also contributed 35,000 MT of sorghum, valued at \$12,171,500, to the GON for emergency feeding programs. Other donors included Germany, Belgium, and the EC, all of which funded the local purchase of relief food. Pakistan, Canada, Italy, Saudi Arabia, and England provided other emergency food assistance.

Total OFDA \$22,000
 Total FFP..... \$12,171,500

TOTAL USG \$12,193,500

RWANDA - Displaced Persons

On Oct. 1, 1990, the Rwandese Patriotic Army (RPA), the military arm of the insurgent Rwandese Patriotic Front, invaded Rwanda from Uganda. The RPA force numbered approximately 7,000 and consisted almost entirely of Rwandese exiles who had been living in Uganda for many years. The invasion and subsequent fighting caused the displacement of an estimated 10,000 civilians and disrupted the local economy. Most severely affected was the Byumba Prefecture of northern Rwanda, the scene of much of the fighting.

IWACU, a Rwandan government-established cooperative agency that included a representative from the Ministry of the Interior along with representatives from 20 NGOs, coordinated relief assistance to the displaced civilians. The Rwandan Red Cross was also instrumental in the relief effort.

On Oct. 16, U.S. Ambassador Leonard Spearman declared that the situation in Rwanda warranted USG emergency assistance. The \$25,000 Ambassador's Authority was given to CRS to defray in-country transport and distribution costs of providing emergency supplies, including food, clothing, and blankets to the displaced in Byumba Prefecture.

The EC channeled a grant of \$900,000 through MSF/Belgium, which delivered food and other emergency aid to the displaced population. The EC also contributed \$273,000 to UNHCR, which had developed an emergency assistance plan, budgeted at \$1.4 million, for

the period beginning Oct. 1, 1990, through March 31, 1991. UNHCR provided \$125,000 to assist 1,000 Rwandan refugees in Burundi, 12,000 Rwandan refugees in Uganda, and 4,500 Burundi refugees in Rwanda move out of the conflict area. ICRC teams interviewed prisoners and conducted surveys in the north where fighting was reported. ICRC workers also distributed dressing material and medical kits to health centers in Ngarama and Kiziguro, and provided 10 MT of food to hospital patients and displaced persons. Other NGOs involved in the relief effort were CARE, Oxfam, Caritas, and the Belgian Red Cross.

TOTAL USG \$25,000

SWAZILAND - Drought

The late arrival of rains delayed the maturity of the maize crop, leaving Swaziland's southeastern region to face serious drought-induced food shortages for the second year in a row. From Lavumisa, north to Big Bend and west to Nhloya, a region inhabited by approximately 35,000 people, the anticipated poor harvests generated increased food prices, placing available food beyond the means of vulnerable populations. Deteriorating pasture conditions also caused many cattle deaths or left existing livestock in such poor condition that they could not be sold for cash to purchase food.

On Feb. 12, 1991, the Government of Swaziland (GOS) issued a donor appeal for funds to purchase 800 MT of local maize, for free distribution to vulnerable groups. Emergency distribution of the maize was scheduled to continue for two months, until the current crop was harvested in late April.

On Feb. 13, U.S. Ambassador Stephen Rogers declared that the drought constituted a disaster and requested his Ambassador's Authority fund to respond to the GOS donor appeal. USAID/Mbabane provided \$23,152 to the Central Cooperative Union, a local vendor, to purchase 116 MT of local maize for emergency distribution. Monitored by WFP, the Ministry of Agriculture and the Ministry of Works transported and distributed the food to 4,833 drought victims in areas near Sigwe and Oslo.

Donor contributions and relief efforts, combined with the arrival of late rains which improved harvest



Displaced Sierra Leonean children reach eagerly for food at a camp in Guinea

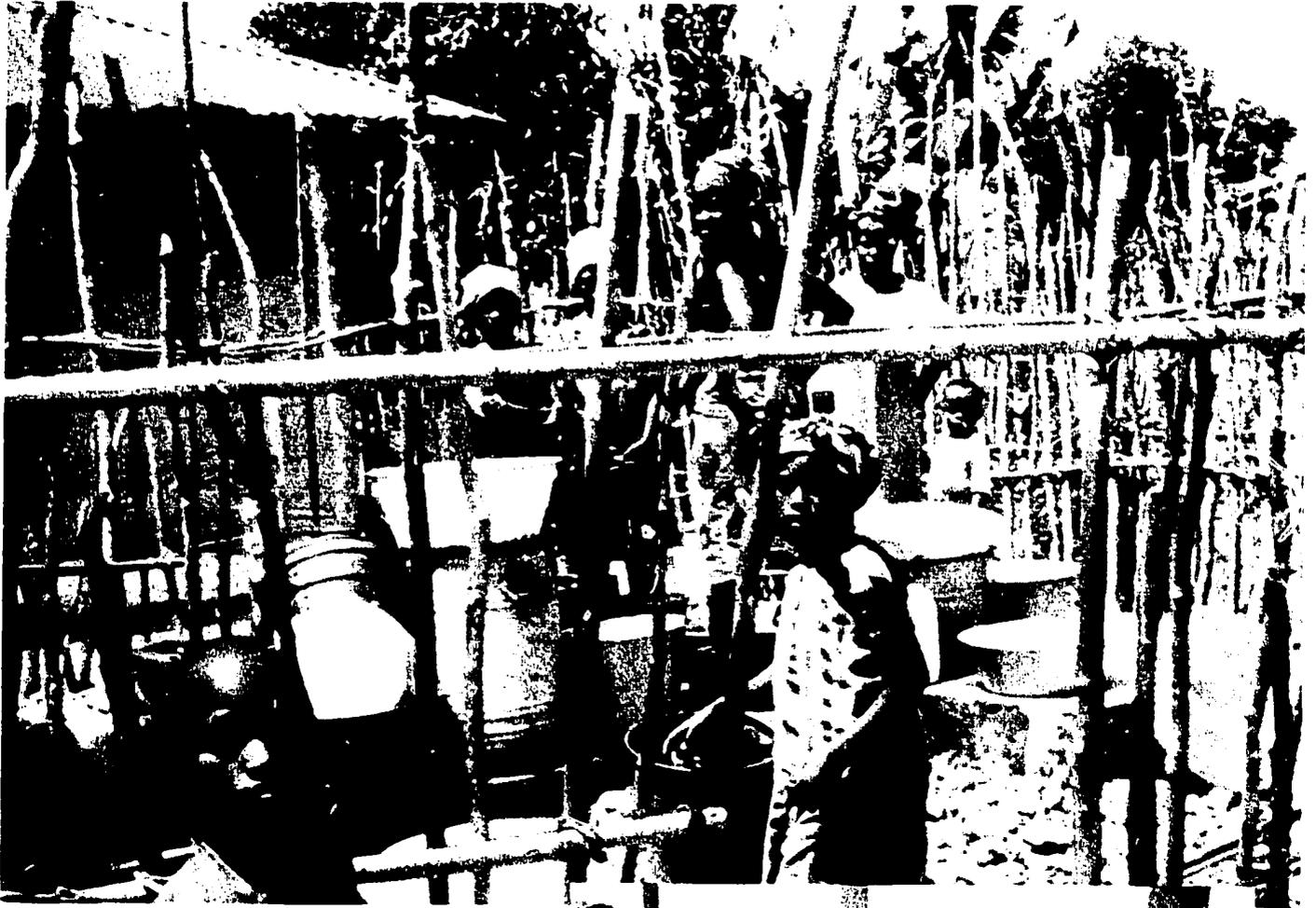


Sierra Leonean mother holds her child at a displaced persons camp in Guinea

Photos by LeVonne Harrell, AID/FHA/OFDA



OFDA operations officer, LeVonne Harrell, stands before a home destroyed in a rebel attack in Sierra Leone



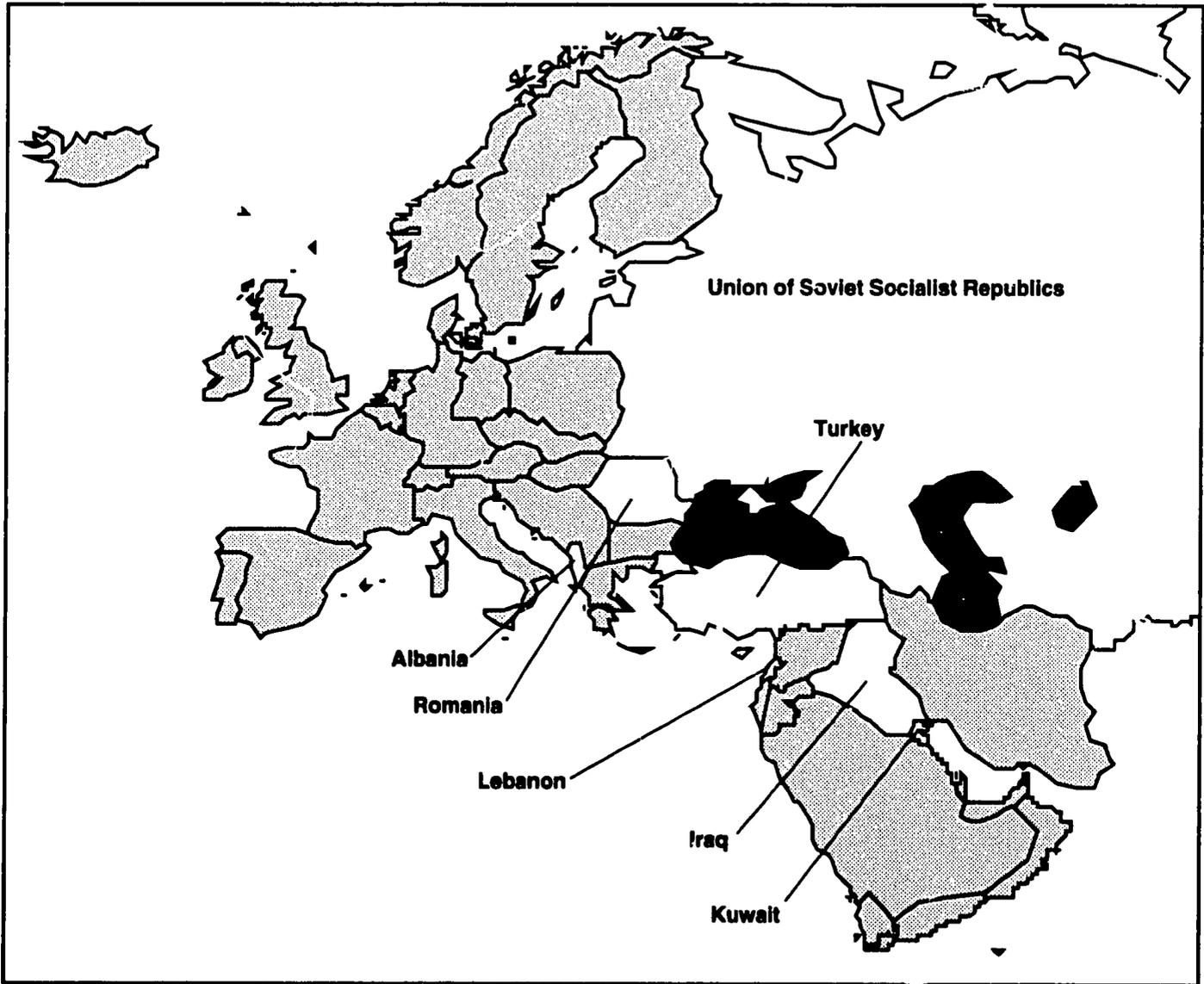
**A MSF water pump installation in Sierra Leone.
The project was funded by OFDA**



Rice distribution (WFP) in Sierra Leone includes USG-donated food
Photos by Levonne Hartell, AID/EHA/OEDA

Europe and Near East

Europe and Near East



ALBANIA - Emergency

Date: 1990 - 1991
Location: Countrywide
No. Dead: A small number killed during demonstrations
No. Affected: 3.2 million (the entire population of the country)
Total USG Assistance: \$2,399,212

The Disaster

After 45 years of isolationism and rigid Stalinist policies, the government of Albania eased controls in 1990, in response to widespread civil unrest. The small steps President Alia took were not enough to revive the lagging economy, and popular discontent continued to spread. After Albania's first open elections on March 31 returned the Communist Party to power, protests against the party victory turned into bloody confrontations in Shkoder, a city in northern Albania, and in Tirana. June brought more turmoil as 350,000 workers went on strike for several weeks, paralyzing the country and bringing economic activity to a halt. In mid-year, the Communist-led government fell and was replaced by an interim government which promised to hold multi-party elections in early 1992.

The disintegration of the national economy was exacerbated by three consecutive years of drought which devastated Albania's agricultural sector. Prior to the drought, Albania had produced most of its food supply. In November 1990, according to media reports, the Prime Minister admitted that for the first time Albania had begun to import cereals, sugar, fats, beans, potatoes, and other basic commodities to ensure that there would be enough food in the markets. Crop production in 1991 was reported to be 80% below normal, and in mid-1991 the government estimated that Albania would have a food deficit of more than 110,000 MT. One source reported that in March 1991 a monthly ration for one family in Tirana included four kilograms of sugar, two kilograms each of flour, pasta, rice, and white beans, four kilos of meat, two kilos of cheese, and 2.5 liters of oil, and even these limited amounts were not always available in the state-run stores. USG observers confirmed that there were no vegetables available in

Tirana, and that only families with small children were receiving milk. Ships carrying badly needed food imports were unable to dock for fear of being hijacked by Albanians desperate to escape the country.

The economic and political instability in the country inspired thousands to leave by whatever route they could find. Between mid-1990 and mid-1991, 70,000 Albanians left the country, flooding Yugoslavia, Greece, and Italy, which bore the brunt of the tide of refugees. A small percentage of these people were fleeing political persecution and qualified for refugee status. However, most were economic refugees trying to escape the impoverished Albanian economy, and they would eventually have to return to Albania.

Assistance Provided by the U.S. Government

OFDA Assistance

Citing the effects of the drought, widespread shortages of medical supplies, medicine, and safe water, and increased outbreaks of hepatitis and other diseases, Robert Kimmitt, Acting Secretary of State, declared a disaster in Albania on March 29. On April 2, OFDA sent a team to Albania, including Andrew Natsios, OFDA Director, Richard Hough, food aid coordinator from A.I.D. Washington, Cynthia Vlasich, nurse from the ARC, Dr. Richard Kunkle, specialist in emergency medicine, and Gerald Lipson, press officer from A.I.D. Washington. OFDA contributed \$9,912 from its disaster account for support of the team. The team's mission was to review Albania's medical and food situation, and to determine the need for U.S. humanitarian assistance. The team spent two weeks in Albania and reported the following conclusions:

1. There is a lack of international organizations, NGOs, or government agencies in Albania with the capacity or experience to handle humanitarian assistance. The Albanian Red Cross is the only indigenous humanitarian organization through which relief programs could be implemented, and even its ability to do so is limited.
2. The Albanian medical system is well organized and well staffed. Facilities and equipment are old and in disrepair, however, and supplies of medicines such as insulin are insufficient. In addition, health care workers rely on faulty sterilization procedures and reuse

disposable items. These problems affect the vulnerable sectors of the population most deeply: the elderly, handicapped, women, children, and urban poor.

3. Albania's ability to feed itself has declined due to the breakdown of distribution networks, declining farmer productivity, and drought. The government is unable to import essential inputs, or to provide a basic food ration to its citizens. While implementing the systemic changes necessary to address this crisis, the new government will have to pay special attention to the vulnerable populations listed above, to ensure that they do not fall by the wayside.

The team recommended that humanitarian assistance be provided through the Albanian Red Cross, PVOs/NGOs, and, more specifically, that technical assistance should be provided to the Albanian Red Cross to strengthen its capacity; the donor community should donate disposable syringes, needles, essential medicine, and medical equipment; modest amounts of supplementary foods and milk protein should be supplied to malnourished children, and pulses and cereals should be supplied through a carefully targeted general feeding to poor households; and the U.S. and European private sectors should consider working with Albanian officials to explore building factories to produce disposable medical supplies.

Following the team's recommendations, OFDA made a grant of \$250,000 to the ARC to provide operational support to the Albanian Red Cross, and to send an ARC delegate to Tirana to assist with relief distribution.

FFP Assistance

FFP donated 475.9 MT of P.L.-480 Title II emergency food to the Government of Albania at a total cost of \$439,300. This food was to be distributed to poor rural and urban families, in cooperation with the ARC.

Other USG Assistance

DOD flew 60 pallets (roughly 163 MT) of Meals Ready to Eat and bulk rations to Albania in FY 1991. The cost of the commodities and the airlift came to approximately \$1,700,000. DOD also provided excess medical supplies remaining from the Gulf War.

Total OFDA \$259,912
 Total FFP..... \$439,300
 Total DOD \$1,700,000

TOTAL \$2,399,212

Assistance Provided by the International Community

International Organizations

EC - pledged medical supplies worth \$1,800,000 to be distributed by Medecins Sans Frontieres (an NGO), and food aid valued at \$1,200,000 to be distributed by LRCS and various NGOS. At the end of FY 1991, the EC also agreed to provide \$6,100,000 worth of Hungarian wheat for Albania.

LRCS - purchased vehicles and communications equipment to support the Albanian Red Cross, and sent two delegates to help with relief programs. Individual Red Cross Societies contributed as follows:

- Japan - \$80,000
- Germany - 3,000 MT of cereals
- Finland - 150 MT of oil and 150 MT of beans
- Italy - one vehicle and other relief items
- Greece - shoes and other relief supplies

UNHCR - participated in a U.N. assessment team, and sent a delegate to Albania to work on repatriation of minors and others.

UNICEF - sent assessment teams to examine health conditions for women and children.

WHO - sent a medical assessment team, and appealed for \$3,000,000 in assistance for the medical and health sectors.

Governments

Austria - pledged \$678,000 worth of emergency assistance, including food aid valued at \$593,000.

Finland - pledged food aid valued at \$244,000.

France - pledged \$783,000 worth of food and medicine.

Germany - donated 100,000 MT of wheat and wheat flour.

Greece - donated five shipments of basic foods, (e.g., milk, sugar, and oil) sufficient to feed 10,000.

Italy - provided 255 billion lire (approximately \$196 million) including 100 billion lire for emergency food aid, 30 billion lire in credits for industrial inputs, 5 billion lire for the educational system, and 20 billion lire for food from Italian agricultural intervention stocks.

Norway - donated 18 tons of powdered milk and high protein biscuits valued at \$38,000.

IRAQ - Displaced Persons

Date: March - July 1991

Location: Refugees fled from the cities of Dahuk, Al Amadia, Zaku, and surrounding villages in northwestern Iraq into Turkey. Refugees who fled into Iran came from Irbil, Kirkuk, Sulaimaniya, and surrounding villages in northeastern Iraq. In southeastern Iraq, most refugees fled from the city of Basra and its environs into southern Iran.

No. Dead: CDC estimated that approximately 6,700 people, mostly children under five, died between March 29 and May 25 in Turkey and northern Iraq. This figure is an extrapolation based on an affected population of 400,000 in the mountain camps and death rates calculated at various intervals. No reliable estimate is available for the death toll of Iraqi refugees in Iran, although it is believed to be in "the thousands".

No. Affected: It is estimated that between 400,000 and 500,000 Iraqis, mostly Kurds, were displaced on both sides of the Iraq-Turkey border. Approximately 1 million Iraqis moved across into northern Iran. In the southeastern section of the country, an estimated 71,000 Iraqi Shiites fled into southern Iran and an additional 30,000 sought refuge in territory occupied by Coalition forces.

Total USG Assistance: \$582,954,344

The Disaster

On March 3, military commanders representing the Coalition forces and the Iraqi Government signed an official cessation of hostilities agreement, effectively ending the Gulf War. Following the establishment of the ceasefire, Iraqi Kurds in the north and Iraqi Shiites in the south rebelled against the Iraqi Government military forces still in control of these regions. Both groups were temporarily successful against the Iraqi military, but Iraqi leader Saddam Hussein quickly re-deployed his Republican Army ground forces and helicopter gunships to quash the uprisings. Fearing reprisals by Saddam Hussein, hundreds of thousands of Kurds in northern Iraq fled in terror into Turkey and Iran during the final

week of March. The memory of Saddam Hussein's use of chemical weapons against the Kurds in 1988 was still fresh in the minds of these refugees. In some cases, the entire population of a town or village picked up whatever they could hand-carry and retreated into the inhospitable mountainous regions along the Turkish border. By the second week of April, an estimated 400,000 refugees from northwestern Iraq had reached the Turkish border. The majority of the refugees did not bring along food and water, or proper clothing to protect them from the below freezing temperatures. Death rates climbed, especially among children under five, who were particularly susceptible to exposure, malnutrition, and infectious diseases.

From northeastern Iraq, an estimated one million Iraqis moved across the border into northern Iran. They joined approximately 100,000 refugees who had arrived in 1988 following the Iraqi chemical attack that killed thousands of Kurds in the region of Halapja. Thousands of cars and trucks streamed into northwestern Iran, causing massive traffic jams along the border. The refugees settled around existing camps just across the border in the Iranian provinces of Western Azerbaijan, Kurdistan, and Bakhtaran. The Government of Iran and the Iranian Red Crescent quickly established tent encampments for these refugees.

Meanwhile, in the southeastern corner of Iraq, approximately 30,000 Iraqis sought sanctuary in the security zone occupied by Coalition forces along the border with Kuwait. Following the suppression of the Shiite uprising by the Iraqi military forces, an additional 71,000 Iraqi Shiites fled into southern Iran, while thousands more were displaced in the marsh areas just north of Basra.

Relief Efforts

Northern Iraq/Turkey

During the final week of March and the first week of April, hundreds of thousands of Iraqi refugees streamed into the mountains along the Turkish border. The Turkish Government originally prevented the refugees from entering Turkey, but soon the military, private citizens, and the Turkish Red Crescent Society began delivering food and supplies to the border. Truck convoys were met by mobs of refugees scrambling for

supplies without any organized distribution. On April 5, President Bush announced that U.S. military aircraft stationed at Incirlik Air Base would begin airdrops of supplies to refugees in the mountains of Turkey. On the following day, U.S. military cargo planes, along with French and British aircraft, began airdropping supplies to areas accessible to the refugees. These supplies, which had been pre-positioned in Turkey for use in Operation Desert Storm and included pre-packaged meals known as Meals Ready to Eat (MREs), tents, blankets, sleeping bags, and containers of water, were attached to pallets and dropped by parachute. Later, supplies were delivered by helicopter. On April 8, Secretary of State James Baker visited one refugee site to witness firsthand the misery and humanitarian relief efforts. The Coalition's humanitarian effort was dubbed *Operation Provide Comfort*. On April 10, the Government of Turkey (GOT) approved the additional deployment of Coalition forces to aid the operation. The GOT also approved the establishment of a forward operations base at Silopi, near the Iraq border. Heavy rains and uncontrolled mobs of refugees continued to make delivery and distribution of relief supplies difficult. U.S. military personnel were deployed to several sites to establish organized receipt and distribution of relief commodities.

On April 11, OFDA dispatched a DART, led by OFDA Deputy Director Dayton Maxwell, to provide technical assistance to the U.S. military commanders managing *Operation Provide Comfort*. The DART included emergency relief consultants, and specialists in the fields of shelter, water and sanitation, logistics, and emergency health. One team member was stationed in Stuttgart, Germany, to serve as a liaison with the U.S. European Command, which was coordinating *Operation Provide Comfort*. Another team member was stationed in Ankara, Turkey, to act as liaison with the U.S. Embassy and the World Food Programme. The rest of the team members were deployed to Incirlik Air Force Base and the forward operations base at Silopi. Several team members, including epidemiologists from CDC and environmental health specialists from the Water and Sanitation for Health (WASH) Project, began making assessments in several refugee sites. Liaison Teams from the U.S. Embassy in Ankara were also deployed to several refugee sites. U.S. military medical personnel and Civil Affairs teams were already on the scene distributing supplies and providing medical assistance.

Spontaneous refugee sites began springing up in the mountains along the Turkey/Iraq border. The GOT moved many of the refugees into designated campsites. By April 16, the most populous camps were Cukurca (estimated 80,000 in camp, 200,000 in the region), Isikveren (approximately 100,000), Yakmal (around 40,000), and Umzumlu (around 50,000). During the first two weeks of April, DART members from the CDC estimated that the mortality rate for the general refugee population was 3.3 per day per 10,000 people, while the mortality rate for children under five was 10.8 per day per 10,000. As refugees crowded into camps and were exposed to infectious diseases, however, the daily mortality rates climbed to 5.7 deaths per 10,000 for the general population, and as high as 20.5 deaths per 10,000 for children under five.

It quickly became evident that mortality rates would continue to climb as long as the refugees remained in the mountain camps, where there was little shelter and distribution of food, water, and other supplies was difficult. In an effort to move refugees down from the mountains, *Operation Provide Comfort* and the Turkish Red Crescent began sending in truckloads of bulk food, water, blankets, and tents to camps in lowland areas. The U.S. and French military, along with International Organization for Migration, provided trucks and buses to move some Iraqi refugees from the mountain sites to a pilgrimage way station at the El Hadj facility near Silopi, where medical facilities and tents were erected. Several international organizations, such as UNICEF, UNHCR, and LRCS, also began sending personnel and relief supplies, and issued emergency appeals for international assistance.

On April 16, President Bush announced the decision to establish a security zone inside northern Iraq to encourage displaced Iraqis to return to their homes. On April 18, U.N. Executive Delegate Prince Sadruddin Aga Khan signed an agreement with the Government of Iraq permitting the United Nations to work in Iraqi territory to provide humanitarian assistance to returning Iraqi displaced persons. Some Kurdish refugees resisted attempts at relocation, fearing they would be forcibly returned to Iraq without protection or security guarantees. Coalition Forces quickly established a militarily protected security zone in the northernmost tip of Iraq and conducted air patrols above the 36th Parallel. DART members led *Operation Provide*

Comfort Civil Affairs personnel in planning the creation of relocation camps around the town of Zakhu, 10 km. inside of Iraq. Kurdish clan leaders were brought to Zakhu to inspect the area and security arrangements. Later Kurdish men volunteered to assist in the construction of tent communities with health, water, and sanitation facilities. Way station camps were also set up along the route from the mountain sites to the relocation camps in order to provide essential supplies and medical care to returning refugees.

As temperatures moderated in the mountainous areas, medical relief workers feared increased outbreaks of infectious diseases in the unsanitary refugee sites. Diarrheal disease claimed the lives of thousands of refugees, mostly children. On April 19, OFDA donated \$40,000 to UNICEF to purchase 500,000 packets of Oral Rehydration Salts (ORS), an easy-to-prepare solution for the treatment of diarrheal disease. The ORS supplies were flown from Copenhagen to Turkey and distributed by medical relief workers in the refugee camps. OFDA also donated \$13,000 to UNICEF for 100,000 doses of measles vaccines and \$13,500 for syringes, needles, and cold chain boxes. Doctors from CDC, UNICEF, and the U.S. military began administering measles vaccinations to refugees on May 2. By May 9, daily death rates in the mountain camps declined to 2.2 per 10,000 for the general population, and 8.7 per 10,000 for children under five.

As of May 10, 20,000 Iraqi returnees had moved into the camp at Zakhu, and thousands more had begun the trek down from the mountains. DART and Civil Affairs personnel oversaw the construction and management of the camp, while WFP handled the distribution of food to the returning refugees. Soon, several NGOs, such as MSF, IRC, Action Nord Sud, Global Partners, and CARE, began setting up operations in Zakhu. Two more camps were constructed to house over 50,000 Iraqi returnees. On May 13, it was announced that the United Nations would take over administration of the first camp at Zakhu. Representatives of the United Nations, Coalition Forces, U.S. State Department, NGOs, and several DART members met on May 25 in Diyarbakir, Turkey, to discuss the transition to U.N. management of the humanitarian assistance programs in northern Iraq.

Coalition Forces extended the security zone to include the towns of Sirsink and Suriya. However, most of the

Iraqi refugees who had fled into Turkey were from Dahuk, a city of 325,000 residents prior to the exodus. Dahuk was located outside the security zone and was still under the control of Iraqi military and secret police. On May 25, a contingent of Coalition military forces, Civil Affairs units, DART members, and international relief workers entered Dahuk to repair housing and essential services, and create a conducive environment for the return of its residents. Once Iraqi soldiers and secret police retreated from the area, refugees began returning to Dahuk in droves.

By June 6, only 10,000 residual Iraqi refugees remained at the camps at Silopi and Semdinli in Turkey while more than 30,000 returnees remained at the transit camps at Zakhu. Most of the other displaced Iraqis returned to their homes in Dahuk or villages further south. In late June, Coalition forces began withdrawing from northern Iraq. By July 15, all Coalition ground forces had withdrawn across the border. However, Coalition aircraft continued reconnaissance flights above the 36th Parallel in order to deter against possible Iraqi military actions against the Kurds.

With the departure of *Operation Provide Comfort* and DART personnel, the management of all humanitarian relief operations was turned over to the United Nations. UNHCR was named the lead U.N. agency in northern Iraq. In all, approximately 15 NGOs and other international organizations continued to provide humanitarian assistance in northwestern Iraq under the U.N. aegis. WFP and CARE distributed most of the food to Iraqi returnees in northwestern Iraq. Under an agreement with the Government of Iraq, the United Nations arranged visas for relief workers in northern Iraq. Lightly-armed U.N. Guard Forces were sent to Dahuk to monitor security. *Operation Provide Comfort* had accomplished its two primary objectives: to reduce mortality rates among the refugee population and to create conditions so that refugees could return to their homes quickly and safely.

Northern Iraq/Iran

It is estimated that approximately one million Iraqis moved from towns in the northeastern region of Iraq into northwestern Iran. Unlike the refugees who escaped by foot into Turkey, many Iraqis who fled into Iran packed vehicles with belongings and drove across the border. Once across the border, these newly arrived

Iraqis congregated around already established refugee camps that had been built following the last Kurdish exodus in 1988. The Government of the Islamic Republic of Iran and the Iranian Red Crescent quickly mobilized relief workers to expand services in these refugee camps. With Coalition Forces providing assistance to refugees in Turkey, many international organizations and donors focussed their aid on the Iraqi refugees in Iran. For example, UNHCR and ICRC set up several new camps to accommodate the influx of refugees. MSF/France and IOM also set up operations in Iran, while many European donor governments sent planeloads of relief supplies for the refugees.

Approximately 70% of the European Community's total assistance was channeled to Iran. On April 27, the USG dispatched a plane carrying privately donated blankets to Teheran, where they were handed over to the Iranian Red Crescent for distribution to the refugees.

No final official estimate was ever made on the number of Iraqi refugees who died in Iran, although it is believed to be less than the mortality figures in Turkey where the conditions were much harsher. Typhoid fever was reported in several refugee camps in northern Iran. At the height of the influx, it was reported that 360,000 refugees had moved into West Azerbaijan Province, 190,000 into Kurdistan province and 450,000 into Bakhtaran Province. In early May, however, tens of thousands of refugees began returning to Iraq after Kurdish rebels re-established their presence in parts of the northeastern territory. Meanwhile, negotiations were taking place in Baghdad between the Iraqi Government and Kurdish leaders over future autonomy for the region of northern Iraq populated predominately by Kurds. IOM began organizing truck convoys to transport refugees back to cities and transit camps in Iraq. By the end of July, fewer than 100,000 refugees remained in northern Iran. UNHCR began constructing winterized shelters for refugees who did not wish to return to Iraq, and would stay throughout the winter.

Southern Iraq/Iran

While the refugees in the north primarily belonged to the Kurdish ethnic group, Iraqis who fled from the south were mostly Islamic Shia. Immediately following the cessation of war between Iraq and the Coalition Forces, Iraqi Shiites around the city of Basra rebelled, but were quickly suppressed by the Iraqi Republican Army. Approximately 30,000 Iraqis sought refuge in the

security zone maintained by Coalition Forces next to the Kuwaiti border. Coalition Forces constructed facilities for these refugees at Safwan, based on plans provided by GFDA-funded consultants from INTERTECT (see "Kuwait - Emergency"). The ICRC provided potable water and medical care to combat an outbreak of diarrheal disease. Once Coalition Forces began withdrawing, the United Nations sent in a peace-keeping force, known as the U.N. Iraq Kuwait Observation Mission (UNIKOM), to maintain security. By late April, approximately 20,000 displaced Iraqi civilians were relocated to a camp at Rafha just inside Saudi Arabia.

Approximately 71,000 Iraqi Shiites moved into the provinces of Khuzestan and Ilam in southwestern Iran. However, at least 40,000 more were stranded in a marshy area just north of the Iraqi city of Basra. Iraqi military units fired artillery into the marshes to prevent these civilians from escaping. In June, the U.N. Executive Delegate, Sadruddin Aga Khan, protested the Iraqi military actions and led a U.N. interagency mission to inspect the area. On July 11, the United Nations opened a relief center in the area to distribute food and supplies to the displaced persons who had been living in the marshes. The center was later closed by the Government of Iraq.

Assistance Provided by the U.S. Government

On March 27, the U.S. State Department issued a disaster declaration for Iraq and authorized OFDA to provide emergency assistance to displaced persons leaving Iraq. This was followed by a disaster declaration on April 5 by the U.S. Ambassador to Turkey, Morton Abramowitz, authorizing relief assistance to Iraqi refugees in Turkey.

OFDA Assistance

Grants to International Organizations

The first action by OFDA was to allocate \$1 million from the International Disaster Assistance Account to UNICEF and ICRC to address emergency health needs of vulnerable Iraqis. A total of \$869,000 was given to UNICEF for its program in Iraq to immunize 500,000 children. An additional \$131,000 was allocated to ICRC for its ongoing relief programs in Iraq.

\$400 million, combining previous appeals from U.N. agencies such as UNHCR, UNICEF, and WFP. A pledging conference chaired by U.N. Secretary General Perez de Cuellar was held in Geneva on June 12, and attended by over 200 representatives from donor governments, international organizations, and non-governmental organizations. In FY 1991, RP provided over \$46.5 million in response to the U.N. appeal. These funds went to U.N. agencies providing assistance to Iraqi refugees in Turkey and Iran, as well as returnees to Iraq.

In addition, RP provided \$6,000,000 to the U.N. Relief and Works Administration for relief assistance and associated costs for several hundred thousand Palestinians affected and displaced due to Iraq's occupation of Kuwait and subsequent events. RP also contributed \$12,900,000 to ICRC and \$250,000 to LRCS for its relief program at the Abdali displaced persons camp in Kuwait. Lastly, RP contributed \$1,880,000 to the Turkish Red Crescent and other relief organizations that provided assistance to Iraqi refugees in Turkey.

DOD Assistance

Operation Provide Comfort began on April 6 and by mid-May had delivered over 16,600 tons of relief supplies to Iraqi refugees. Of this amount, more than 12,000 tons were delivered by military aircraft. The remainder was delivered by ground transportation. These relief supplies included bulk food, pre-packaged meals (MREs), water, blankets, tents, plastic sheeting, and clothing. *Operation Provide Comfort* included the participation of military contingents from the United States, the United Kingdom, France, Germany, Netherlands, and Italy. Over 12,200 U.S. military personnel participated in the operation in Turkey and later northern Iraq. DOD's Office of Global Affairs estimated costs incurred by *Operation Provide Comfort* to be at least \$449 million.

In addition, DOD donated an estimated \$15.1 million of excess property (food, tents, etc.) to UNHCR for its humanitarian assistance programs in Iraq, and an additional \$1 million of excess property to the U.N. Guard Force.

Summary of USG Assistance

OFDA Assistance

Grant to UNICEF.....	\$869,000
Grant to ICRC.....	\$131,000
Grant to CRS.....	\$4,544,411
Grant to IRC.....	\$1,336,174
Grant to CARE.....	\$984,819
USAID/Ankara Allotment for Local Purchase .	\$250,000
DART Local Purchase.....	\$3,328,390
DOD Local Purchase.....	\$60,000
TDY of RP officer to Turkey.....	\$6,290
DART Personnel.....	\$111,657
Team Support (supplies and radio equipment)...	\$57,012
INTERTECT Contract.....	\$258,457
CDC Personnel.....	\$34,869
Purchase of ORS from UNICEF/UNIPAC.....	\$40,000
Purchase of immunization equipment.....	\$13,500
Purchase of measles vaccine.....	\$13,000
Replacement costs of 96,640 blankets.....	\$418,670
Replacement costs of 1,500 rolls of plastic sheeting.....	\$434,700
Value of tents and repair kits .	\$439,385

FFP Assistance

17,000 MT of diverted food (FY 1990).....	\$8,980,000
47,757 MT of Title II food (FY 1991).....	\$12,384,100
Ocean freight and transport (FY 1991).....	\$15,608,900

RP Assistance

Grants to UNHCR..... \$28,870,000

Grant to UNICEF..... \$3,000,000

Grant to WHO..... \$500,000

Grant to WFP..... \$3,000,000

Grant to IOM..... \$3,750,000

Grant for the U.N. Guard Force..... \$6,500,000

Grant to U.N. Office of the Executive Delegate..... \$900,000

Grant to UNRWA..... \$6,000,000

Grant to ICRC..... \$12,900,000

Grant to LRCS..... \$250,000

Grants to Turkish Red Crescent and other Turkish organizations..... \$1,880,000

DOD Assistance

Operation Provide Comfort (estimated incurred costs)..... \$449,000,000

Value of Excess Property donated to UNHCR..... \$15,100,000

Value of Excess Property donated to U.N. Guard Force..... \$1,000,000

Total OFDA..... \$13,331,334

Total FFP..... \$36,973,000

Total RP..... \$67,550,000

Total DOD..... \$465,100,000

TOTAL \$582,954,334

Assistance Provided by U.S. Voluntary Agencies

ADRA - sent a team to distribute clothing, blankets, medicines, and provided water and health assistance to Iraqi refugees in Turkey.

American Friends Service Committee - donated clothing and personal hygiene kits for refugees in Turkey.

ARC - dispatched an assessment team, three logisticians, and a physician to assist in relief efforts in Turkey. ARC also donated blankets and WHO health kits.

American Refugee Committee - sent medicine, medical supplies, and medical personnel to Turkey.

Americares - sent a medical team to work in north-western Iran, but was forced to pull out on May 3.

CARE - managed food distribution and a commodity management program in northern Iraq.

CRS - managed a nationwide feeding and maternal child health program in Iraq.

CWS - sent clothing and blankets for refugees in Turkey.

Direct Relief International - sent two shipments of medical supplies consigned to the Kurdish Relief Association and the Iranian Red Crescent.

FHI - shipped baby food, medical supplies, blankets, and seeds to MSF and the Turkish Red Crescent.

International Medical Corps - sent public health and trauma specialists to Turkey.

IRC - sent teams to Turkish refugee camps, and later managed a health, sanitation, and shelter program in northern Iraq.

LWR - donated blankets for refugees in Turkey.

MAP International - provided medicine through Food for the Hungry.

MCI - shipped children blankets to Turkey.

Northwest Medical Team - sent trauma specialists, physicians, and nurses and set up medical logistics system in northern Iraq.

Operation USA - sent ORS packets and therapeutic vitamins for refugees in Turkey.

Project Concern International - sent medical supplies and personnel to Turkey in association with American Refugee Committee.

SCF/US - sent relief teams to provide public health, water, and sanitation assistance in Turkey.

World Relief - sent a survey team, and a team of health specialists and logisticians to Turkey.

WVRD - sent a team to Turkey to distribute blankets, clothing, food, and medicine purchased locally.

Assistance Provided by the International Community

International and Intergovernmental Organizations
UNDRO released regular financial reports on commitments to the consolidated U.N. appeal. Reported contributions to U.N. agencies were taken from UNDRO Financial Report F13 dated Jan. 3, 1992.

EC - reported that it would provide \$180,000,000 in humanitarian assistance to the region, most of it for Iraqi refugees in Iran. Most European donor governments channeled a portion of their contributions through the EC.

FAO - oversaw short-term emergency material assistance program in Iraq. Total contributions reported at \$1,371,319.

ICRC - set up and operated refugee camps in Iran; managed food distribution programs in northern Iraq; and implemented water and sanitation projects throughout Iraq, POW exchange programs in Iraq and Saudi Arabia, and detainee protection programs in Kuwait.

IOM - managed repatriation programs for Iraqi returnees. Total contributions reported at \$11,290,775.

LRCS - supported the work of the ICRC, Turkish Red Crescent, and Iranian Red Crescent.

U.N. Office of the Executive Delegate - coordinated the U.N.'s Regional Humanitarian Plan of Action. Prince

Sadruddin Aga Khan was named the U.N. Executive Delegate. Total contributions valued at \$3,560,010.

U.N. Guard Force - sent over 400 lightly armed U.N. Guards to protect U.N. personnel, assets, and NGO operations linked with the U.N. humanitarian program. Total contributions reported at \$49,822,371.

UNHCR - served as the lead U.N. agency, and maintained approximately 400 international and local staff in Iraq, Iran, and Turkey, 11 field offices, and 35 relief supply warehouses. Total contributions reported at \$152,991,857.

UNICEF - was responsible for emergency maternal-child care, water and sanitation programs, immunization campaigns, and other health-related programs. Total contributions reported at \$42,245,010.

U.N. Volunteers - provided staff for U.N. operations. Total contribution reported at \$1,793,346.

WFP - managed the U.N.'s food distribution program for refugees and returnees in Iraq. Total contribution reported at \$55,646,171.

WHO - provided technical assistance for the design of public health services, epidemiological surveillance, and environmental health assistance in Kuwait. Total contribution reported at \$1,365,000.

Governments

The following is a partial list of government donations reported to OFDA as of June 6, 1991. To avoid double-counting, government contributions to the U.N. appeal have been excluded.

Australia - contributed \$704,000 to ICRC, \$200,000 to Australian NGOs, and \$93,600 in relief supplies.

Austria - donated \$1,100,000 to ICRC.

Belgium - contributed \$2,890,173 to the ICRC, and more than \$5,000,000 to the Belgium Red Cross, Oxfam, and MSF.

Canada - donated \$3,600,000 to ICRC, \$1,760,000 through the Canadian Red Cross, and \$1,300,000 to LRCS.

Czechoslovakia - provided \$500,000 for in-kind relief supplies.

Denmark - contributed over \$4,000,000 to the Danish Red Cross, Danish ChurchAid, and Save the Children/Denmark.

Finland - donated \$500,000 to ICRC.

France - participated in *Operation Provide Comfort* airdrops, donated over \$180,000 to MSF and reported \$22,500,000 for in-kind contributions to Iraqi displaced persons in Iran, Turkey, and Iraq.

Germany - participated in *Operation Provide Comfort* airdrops and provided over \$100,000,000 to the German Red Cross, ICRC, and other NGOs.

Greece - donated \$54,000 for in-kind assistance to Iraqi refugees in Iran.

Hungary - gave \$20,000 to the Hungarian Red Cross and \$60,000 for in-kind contributions.

Indonesia - provided \$125,000 for in-kind assistance through the Indonesian Red Cross/Red Crescent.

Ireland - donated \$41,000 to ICRC, \$320,000 to the Irish Red Cross, and \$160,000 to Irish CONCERN.

Italy - gave \$1,600,000 to ICRC, and \$400,000 in medical supplies through the Italian Red Cross.

Japan - reported \$390,000 for in-kind assistance to Iran, \$304,000 for in-kind assistance to Turkey, and \$3,000,000 to ICRC.

Korea, Rep. - gave \$360,000 to ICRC.

Luxembourg - reported \$1,500,000 in assistance for Iraqi refugees.

Malaysia - donated \$100,000 through the Malaysian Red Crescent.

Netherlands - participated in relief operations in Turkey and northern Iraq, and provided \$1,400,000 to MSF, and \$1,850,000 to the Dutch Red Cross.

Norway - donated over \$1,000,000 to ICRC, and \$18,000,000 to various relief organizations.

Pakistan - contributed \$780,000 for in-kind assistance to refugees in Iran.

Poland - donated \$210,000 through the Polish Red Cross, and \$52,500 for in-kind contributions.

Spain - reported \$30,000,000 for in-kind assistance for refugees in Iran and Turkey.

Sweden - donated \$1,700,000 to ICRC.

Switzerland - contributed \$3,500,000 to ICRC.

Turkey - reported spending at least \$200,000,000 in assistance for Iraqi refugees.

United Kingdom - participated in *Operation Provide Comfort* airdrops and relief operations in northern Iraq, dubbed *Operation Safe Haven*. The U.K.'s Overseas Development Administration sent medical personnel, engineers, and relief workers to provide humanitarian assistance in northern Iraq. Reported providing at least \$65,000,000 in cash donations, \$10,714,286 to SCF/UK to support the Iranian Red Crescent, and \$5,500,000 to ICRC.

Yugoslavia - reported \$330,000 for in-kind assistance.

Non-Governmental Organizations

Action Nord Sud - provided medical personnel in Turkey and northern Iraq.

AICF (Action International Contre la Faim) - sent medical teams to Turkey and northern Iraq.

AIM (Architects and Engineers of the World) - constructed clinics and schools in northern Iraq.

Christian Outreach - sent public and primary health specialists to work in Turkey and northern Iraq.

Danish Refugee Council - managed water projects in Iraq in association with UNHCR.

Danish Church Aid - implemented water and shelter programs for Iraqi returnees in association with UNHCR.

Equilibre - sent medical personnel, food, medical supplies, clothes, and baby food to refugee camps in Turkey.

Global Partners - sent a team of doctors and logistic coordinators to Turkey and northern Iraq.

Medecins du Monde - sent medical personnel to Turkey and northern Iraq.

MSF/Belgium/France/Netherlands - sent several medical teams to Turkey, Iran, and Iraq. MSF also managed several health, water, and sanitation programs in Iraq and Iran.

Norwegian Refugee Council - seconded staff to UNHCR to work in Iraq.

Operation Mercy - sent volunteers, blankets, and tents for distribution at the camps in Turkey.

Oxfam/UK - sent water engineers to Turkey and Iraq.

SCF/UK - provided assistance to groups working in Iran.

Swedish Radda Barnen - seconded staff to UNHCR to work in Iraq.

LEBANON - Civil Strife

Date: Oct. 13, 1990

Location: Beirut

No. Dead: At least 200 civilians

No. Affected: 90,000; 720 injured

Total USG Assistance: \$29,746,896

The Disaster

A massive military operation led by the Syrian-backed Lebanese army ousted rebel Christian General Michel Aoun from his Ba'abda Palace stronghold on Oct. 13, 1990. Aoun's occupation of the presidential palace had obstructed a peace process for Lebanon agreed upon by the National Assembly at a conference in Taif, Saudi Arabia, in October 1989. As self-proclaimed leader of Lebanon, General Aoun refused to recognize the election of Elias Hrawi as president in 1989 and rejected the peace plan on grounds that it did not set a timetable for the withdrawal of Syrian troops from Lebanon. Aoun led an unsuccessful six-month battle in 1989 to expel Syrian forces from Lebanon. His cause was further damaged by his failure to gain complete control of the Christian heartland when his troops fought a rival Christian militia in the early months of 1990. (See "Lebanon -Civil Strife" in the FY 1989 and FY 1990 OFDA Annual Reports.)

Frustrated in its attempts to gain Aoun's cooperation for major initiatives to reunify the country and the Lebanese army, the Hrawi government turned first to an economic blockade of the General's enclave and finally to a military showdown. With Syrian aircraft providing air support, the Lebanese army and Syrian armed forces staged an attack on the presidential palace on Oct. 13.

The intense shelling that finally forced Aoun to surrender and seek asylum in the French embassy left at least 200 civilians dead and 720 wounded. Extensive damage was caused to basic infrastructure in 15 villages and communities in the Metn region. Thousands of homes were destroyed, affecting some 90,000 people, and several orphanages, hospitals, and social welfare organizations suffered severe damage.

Action Taken by the Government of Lebanon (GOL) and Non-Governmental Organizations

With the national economy in a state of crisis after nearly 16 years of civil war, the GOI was largely dependent on the continuing relief and rehabilitation assistance provided by international donors. Prime Minister Selim al-Hoss called an emergency meeting of donors on Nov. 14, requesting urgent assistance in removing rubble and repairing institutions that provide essential services to residents of the damaged area.

Assistance Provided by the U.S. Government

On Dec. 3, U.S. Ambassador Ryan Crocker declared that a disaster situation existed in Lebanon as a result of the Oct. 13 conflict. SCF/US, which had an ongoing program in Lebanon, appealed to OFDA for funding to support medical assistance, and the distribution of milk and basic relief supplies in the area of Beirut affected by the recent fighting. A grant to SCF/US in the amount of \$147,896 was signed by OFDA on Dec. 10 to support an expanded emergency program.

A.I.D. continued to fund activities in Lebanon in FY 1991 that responded to general, country-wide emergency needs, including a P.L. Title II food program. Some of the food was diverted for the victims of this disaster, and some of the ASHA (American Schools and Hospitals Abroad) funds may have been spent for medical care at the American University Hospital in Beirut for the injured. It is not possible, however, to separate out these expenditures.

TOTAL

\$147,896

Assistance Provided by U.S. Voluntary Agencies

CRS - using funds from a USAID grant, carried out repair of health care and educational facilities, welfare institutions, and private homes.

SCF/US - assessed on-site damage, began a rubble removal and clean-up campaign, and resumed distribution of P.L. 480 Title II food in all areas, including the Metn region affected by the embargo against General Aoun's Christian enclave. SCF also administered an OFDA grant to provide essential relief items to destitute families and badly needed medical supplies to hospitals and health care centers.

WRF - continued its work begun in 1984 to upgrade skills of medical professionals disabled by armed conflict. WRF also provided modern rehabilitation equipment and supplies.

YMCA/Lebanon - provided continuing assistance to the most needy displaced and war-affected families in Lebanon.

Assistance Provided by the International Community

International Organizations

EC - donated \$763,855 for hospitals, \$263,852 through NGOs, and \$1,327,019 for repair of the electricity supply through UNDRO. EC and WFP provided 5,889 MT of rice, canned fish, and other food to displaced persons throughout Lebanon.

EC/UNDRO - provided \$1,000,000 for a UNICEF program to repair the Beirut water network.

UNICEF - in a \$3,100,000 program assisted by Germany, continued to repair and improve water supplies in all regions. UNICEF also helped the GOL's Ministry of Health to serve 80,000 patients through 725 dispensaries.

WHO - contributed medical supplies worth \$8,000.

Governments

Belgium - provided generators for hospitals through MSF at a cost of \$126,582, as well as medical assistance valued at \$28,173 through other NGOs.

Canada - donated clothing valued at \$91,667.

Germany - supplied generators for hospitals and orphanages at a cost of \$185,185, and also assisted UNICEF in a water network repair program (see above).

Kuwait - donated \$500,000 for an essential drugs program.

Spain - contributed medicine and medical supplies worth \$100,503.

Sweden - donated \$243,564 for the repair of shelters through Caritas and \$1,130,435 to assist a YMCA medical project.

Non-Governmental Organizations

Solidarity (France) - sent a team to assess needs for reconstructing and rehabilitating 93 schools damaged in Lebanese conflicts.

U.N. Friendship Club - donated 80 cartons of clothes.

military's C-5 aircraft successfully delivered two pallets of litter cots, and 30,000 blankets from DOD's excess stock to the League's main office in Yerevan, Armenia. The cots and blankets were loaded onto 12 trucks sent from Georgia, and escorted by Georgian police and League representatives to Georgia, where they were distributed to the quake victims the next day.

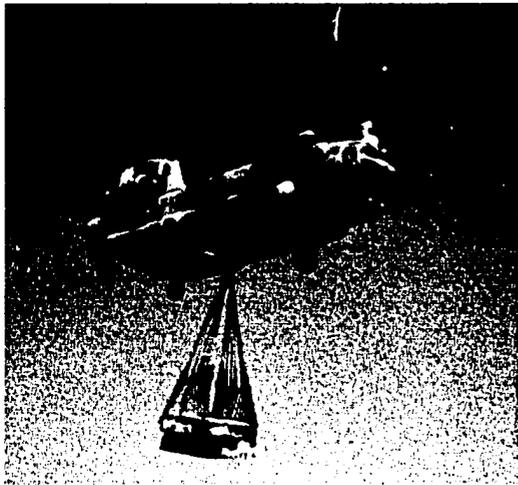
LRCS and 10 national Red Cross societies made contributions of cash and tents, blankets, food, and injectors valued at \$814,830.

TOTAL USG \$25,000



DART Command Center in Silopi, Turkey, with Metro Dade communications consultant, Bill Kunderman, and Beverly Youmans, DART information officer
Photo courtesy of Beverly Youmans, QFDA/LAI

Dayton Maxwell (l) and Fred Cole (r), U.S. DART team leaders at U.N. flag raising ceremony in Iraq, May 13, 1991
Photo by Franca Brilliant, QFDA/LAI



British helicopter airdropping supplies to Cukurca camp, one of the largest camps on the Iraq-Turkish border
Photo by Renee Batallis, AID/XA



Kurdish family at Isikveren camp (note how trees have been chopped down and others stripped bare for firewood)

Photo by Ronald Libby, QFDA/Forest Service

134



Children at transit camp near Zakhu, Iraq, standing in front of OFDA-purchased tents
Photo by Franca Brilliant, OFDA/LAI

U.S. soldiers moving cases of MREs (part of DOD surplus donated to the relief effort) at Silope, Turkey
Photo by Beverly Youmans, OFDA/LAI



OFDA's Joe Gettler and U.S.-trained interpreter Sgt. Saad stand before burning oil well, just south of Kuwait's border with Iraq. Gettler served in the Gulf for 60 days during the conflict as AID's expert advisor to coalition forces on humanitarian assistance.
Photo courtesy of Joseph Gettler, AID/FHA/OFDA

Latin America and the Caribbean

Latin America and the Caribbean



COSTA RICA - Earthquake

Date: April 22 through May 1991

Location: Southeastern Costa Rica, especially Limon and San Jose, (and northwestern Panama)

No. Dead: 47

No. Affected: At least 7,500, of which 4,000 were left homeless and 299 were injured

Total USG Assistance: \$2,319,961

The Disaster

On April 22, at 3:55 p.m. local time, an earthquake measuring 7.4 on the Richter scale shook southeastern Costa Rica and northwestern Panama. This was followed by powerful recurrent tremors of magnitudes 4.0 to 5.9 that struck the same areas from April throughout the month of May (see "Panama -Earthquake" for details on the impact of the disaster on that country). The quake's epicenter was situated approximately 112 km. south of San Jose and about 48 km. south of Puerto Limon. Also as a result of the earthquake, several landslides occurred between San Jose and Puerto Limon.

A joint U.S./Costa Rican team, including USAID Director Ron Venezia, OFDA Regional Advisor Paul Bell, and some members of the local National Emergency Commission (NEC), visited the disaster site to assess the extent of the damage. The team found that throughout the southeastern portion of the country, some 1,254 housing units were partially wrecked and at least 1,154 were completely demolished, leaving approximately 4,000 people homeless and about 299 injured. The quake also caused 47 confirmed deaths, and affected a population of at least 7,500. Observing that most displaced townspeople were forced by circumstances into camping out in crowded town centers and soccer fields, the team recommended that health conditions regarding water and sanitation, especially in Limon and other large towns, be carefully monitored. About 44 public buildings, including schools, health clinics, one hospital, and several churches, also suffered damage. Costa Rica's main state-owned oil refinery, located in Limon, was set afire by the quake.

The most devastating impact of the quake was on the Atlantic region's physical infrastructure. At least 30% of its roads, railways, and bridges were damaged or completely destroyed, including the San Jose-Limon Highway and the highway linking Limon to Sixaola, Panama. (Limon, a port city with 65,000 inhabitants, handles about 80% of Costa Rica's exports.) Thus, an estimated 150 communities were left isolated, lacking food supplies and access to health facilities, and unable to transport their perishable export goods (primarily bananas, but also plantains and cocoa) to market. As a result of this forced isolation, many small and large growers/exporters of bananas and other food crops suffered tremendous export earning losses with millions of boxes of their goods rotting due to inaccessible transport facilities. Local tourism was also dealt a severe blow when many hotels and lodges were flattened, and roads and bridges to those sites were destroyed.

Although the main Atlantic ports continued to operate, they were badly in need of repair and dredging in order for ships to load to full capacity. Serious adverse effects on the local water system included damage to aqueducts, holding tanks, and distribution facilities. The Rio Banano Aqueduct, which produced over 70% of Limon City's water, was demolished by the tremor and could not be repaired until the end of the rainy season. In addition to suffering a water shortage, the local populace lost electricity and telephone services. The total repair/reconstruction costs were estimated at \$90 million (including infrastructure, buildings, and housing).

Action Taken by the Government of Costa Rica (GOCR) and Non-Governmental Organizations

The President of Costa Rica, accompanied by the Minister of Housing and the head of the Social Security Institute, traveled to the affected areas to see for himself the effects of the calamity and to meet with various GOCR institutions, local business people, and neighborhood community leaders to discuss their losses. He informed those with whom he spoke that he had received a \$60 million loan from the World Bank for emergency road and bridge repair, and he also requested further international assistance to help his country cope with the crisis. Meanwhile, the NEC promptly collaborated with other governmental departments at the central, regional, and technical levels, such as the civil guard, the police, the fire department, and the Costa

Rican Red Cross, to implement search and rescue and emergency relief efforts.

Some local private businesses also made contributions. Standard Fruit furnished aid worth \$1,000,000, and the Costa Rican Dos Pinos Dairy Cooperative donated food.

Assistance Provided by the U.S. Government

On April 23, based on the U.S./Costa Rican team's assessment and the appeal for help, U.S. Charge d'Affaires Robert O. Homme issued a disaster declaration and provided \$25,000 to the NEC for its ongoing relief efforts. The same day, OFDA arranged for a U.S. SOUTHCOM C-130 Hercules aircraft to be used in conjunction with several small private airplanes to airlift injured civilians, and to transport relief supplies. The C-130 delivered 100 rolls (260,000 sq. ft.) of plastic sheeting to Costa Rica from the OFDA Panama Stockpile. Also, three SOUTHCOM UH-60 helicopters were provided to transport a U.S. military engineering damage assessment team to the affected areas to assess damage to, and provide assistance in repairing, roads, bridges, port facilities, airfields, and other kinds of infrastructure; to survey and provide food, water, and other items to rural communities; and to evacuate resident U.S. citizens.

The cost of the air operations, including the charter of a plane to fly over Limon to assess damage, amounted to \$265,849 and was paid for out of OFDA funds. The replacement value of the 100 rolls of plastic sheeting was \$28,980.

In June, OFDA arranged with the USGS to send a technical team to Costa Rica and Panama to meet with country counterparts and evaluate the effects of the earthquake, subsequent aftershocks, and ground failure. The expenses of the three-person team, comprising a landslide specialist, a seismologist, and neotectonics expert, came to \$4,132 for the Costa Rican portion of the assessment.

OFDA also provided a Mission allotment for bridge/road repair projects. The A.I.D. Latin America Bureau reimbursed OFDA for the total value of \$1,996,000. These repairs led to an early resumption of Costa Rican agricultural exports valued at approximately \$1 million per day.

Total OFDA \$323,961
Total Other USG \$1,996,000

TOTAL **\$2,319,961**

Assistance Provided by U.S. Voluntary Agencies

(Note: in some cases it is hard to distinguish between aid given solely to Costa Rica and that given to both Costa Rica and Panama for the same disaster. To avoid double counting, contributions unspecified as to country have been listed only once, under either Costa Rica or Panama).

ARC - contributed 10,000 blankets, 60 tents, 105 rolls of plastic sheeting, 1,500 kitchen utensils, 7,500 comfort kits (see "Panama - Earthquake" for information on contents), as well as medical and other emergency assistance.

CARE - airlifted purified water.

CWS - set aside \$12,500 for ongoing relief activities in both countries.

CRS - provided food items.

Operation USA - issued a grant for \$25,000 in humanitarian aid.

Pan American Development Foundation - donated tents, blankets, first-aid and family survival kits, plastic sheeting, rescue equipment, and water.

SCF/UK - established a \$5,000 emergency fund for needy children and their families in Limon, Costa Rica, and provided other relief aid to the disaster-affected areas.

WVRD - provided \$22,129 in earthquake relief.

Assistance Provided by the International Community

International Organizations

EC - allocated \$295,000 through NGOs for the distribution of tents, blankets, and medical supplies.

International Financial Institutes - The IDB issued a grant for \$200,000; the IBRD provided loans.

OAS/Citibank - supplied 200 water jugs (2.5 gallons), 100 bottles of water purification tablets to purify 15,000 gallons of water, 10 first-aid kits, masks, machetes, and lanterns.

ONUCA (a U.N. observer force established to help with the Central American peace process) - provided three helicopters and six medics.

Sistema Economico Latino Americano - sent \$4,500.

UNDRO - sent delegates to the disaster site and dispatched a U.N.-provided helicopter to evacuate injured civilians and transport relief supplies. UNDRO also provided a grant for \$30,000 and appealed to the international community for blankets, tents, water reservoirs, electrical generators, and medical equipment.

University for Peace - gave \$8,475.

WHO/PAHO - sent an assessment team.

Governments

Argentina - gave 12 MT of milk and kitchen utensils.

Canada - gave \$86,957 and financed \$508,475 worth of humanitarian aid, including tents, blankets, generators, and housing reconstruction.

Columbia - provided 4 MT of rice, 3 MT of beans, one-half MT of sugar, and one-half MT each of pasta and potatoes.

El Salvador - offered one airplane, temporary shelters, food, and medicine.

Germany - sent \$88,000 for the local purchase of food, clothes, and other necessities, as well as an assessment team and generators for Limon hospital.

Guatemala - offered unspecified assistance.

Honduras - dispatched helicopters and medics.

Japan - provided tents, blankets, and other relief assistance worth \$166,000.

Mexico - delivered food, medicine, blankets, and mattresses, in addition to offering the services of one C-130 aircraft.

Nicaragua - contributed five helicopters for medivac purposes and gave blankets and mattresses.

Spain - supplied electric generators, tents, blankets, first-aid teams and kits, and water purification tablets, all valued at \$508,475.

Switzerland - provided two teams with trained dogs to search for and rescue survivors trapped under the rubble.

Taiwan - gave \$200,000.

United Kingdom - dispatched a 15-member international rescue team.

Venezuela - delivered rice, beans, sugar, and potatoes, and its President visited Costa Rica.

Non-Governmental Organizations

Canadá Red Cross - issued a grant for \$4,348.

Finland Red Cross - donated \$112,500 in humanitarian assistance.

International Rescue Corps/ UK - sent a 15-member rescue team and rescue equipment.

Norway Red Cross - provided a cash contribution of \$38,110.

HONDURAS - Floods

Date: Nov. 2 - Dec. 12, 1990
Location: Sula and Aguan Valleys
No. Dead: 15
No. Affected: 85,000
Total USG Assistance: \$1,937,673

The Disaster

During the period from Nov. 2 to Dec. 12, 1990, torrential rains generated serious flooding in the Sula and Aguan valleys in the northern part of Honduras. The heavy rains, together with strong winds and high waves along the north coast, caused several major rivers to overflow their banks. Officials at the El Cajon Dam reported an extremely high water catchment rate that forced the discharge of 960 cubic meters per second of water for an extended period, contributing to the highest flood level ever recorded on the Ulua River. The Ulua and the Chamelecon Rivers inundated the Sula Valley, while the Aguan River inundated the Aguan Valley.

According to USAID/Honduras, 85,000 people were affected by the floods. Of those affected, 15 were killed and approximately 6,000 were left homeless. At least 3,080 houses were either damaged or destroyed. The floods washed out roads and bridges, complicating the transport of essential relief supplies and medicine. In the city of San Pedro Sula, high waters damaged the water system, resulting in a temporary cutoff of drinking water to the city. Banana plantations, sugar cane, and other food crops, as well as livestock, suffered extensive damage. Total flood damage was estimated at over \$48 million.

Action Taken by the Government of Honduras (GOH)

The GOH assigned the Permanent Council for National Emergencies (Spanish acronym COPEN) to coordinate and implement relief and reconstruction efforts. The Honduran army supplied personnel and six trucks to transport relief supplies. COPEN coordinated the procurement and distribution of relief supplies and conducted surveys to establish the extent of the damage and the immediate and long-term needs. COPEN's

regional chapters, CODERES, coordinated relief and reconstruction efforts in their regions. Local chapters were activated to handle relief operations at the local level.

Over 100 local volunteers from the Fire Service, Red Cross, Rotary, Boy Scouts, and Amateur Radio Club assisted in the distribution of plastic sheeting and cotton blankets. In addition, there was a strong demonstration of support from the Honduran private sector in the affected areas. Businesses and individuals contributed services, commodities, and transportation to assist in the relief efforts.

USAID commended COPEN for its efficient handling of disaster relief efforts. Several hundred of the more than 1,200 Hondurans who went through the USAID-financed COPEN training worked in critical supporting roles throughout the disaster.

Assistance Provided by the U.S. Government

At the onset of the floods, USAID/Honduras made available to COPEN and the Ministries of Health and Public Works the amount of \$1,854,621 to finance the following activities: per diem costs for individuals working in emergency activities; fuel and lubricants required for emergency activities; food, clothing, temporary shelter, and tools; infrastructure repairs on 148 km. of rural roads in coffee plantations and other emergency repairs on main roads and bridges; and the procurement of medicine, materials, and supplies for the health sector.

After receiving an appeal from the GOH for emergency assistance, U.S. Ambassador Cresencio Arcos declared on Dec. 3, 1990, that a disaster existed warranting USG emergency assistance. The \$25,000 Ambassador's Authority was donated to COPEN for local purchase of relief supplies. OFDA's Regional Advisor, Paul Bell, traveled to Honduras to assess the situation and advise an appropriate USG response. OFDA arranged for DOD transport of 120 rolls (312,000 sq. ft.) of reinforced plastic sheeting, 5,166 cotton blankets, and six tents from its stockpile in Panama. On Dec. 4 the commodities were airlifted to Honduras, loaded onto six trucks from the Honduran army, and taken immediately to the operations centers of the CODERES. DOD transport, replacement purchase of the plastic sheeting,

and shipping costs to replace the plastic and blankets to the stockpile totaled \$55,604. The tents were not replaced in the stockpile and were considered an in-kind contribution valued at \$2,448.

Red Cross - various member societies sent volunteers and rescue teams for evacuation, and contributed a total of \$103,000 in cash.

Total OFDA \$83,052
Total USAID \$1,854,621

TOTAL **\$1,937,673**

Assistance Provided by the International Community

International Organizations

EC - provided \$139,000 to the MSF/France emergency relief program.

UNDP - donated \$30,000 to cover transportation and handling services.

UNDRO - contributed \$15,000 to cover local expenses for emergency needs.

WFP - provided 89 MT of corn, beans, packed-fish, and vegoil.

LRCS - contributed \$13,423 to emergency relief efforts.

Governments

France - channeled medicine, 200 MT sugar, and 160 MT vegoil through UNHCR.

Germany - provided \$70,000 to purchase medicine, tools, and construction materials.

Governments of Spain, Mexico, and the United Kingdom - gave in-kind contributions of food, materials, and technical assistance.

Japan - provided \$100,000 for medicine, blankets, tents, cots, and tools.

Non-Governmental Organizations

MSF/France - established an emergency relief program to provide drugs, medical equipment, and medical staff.

PANAMA - Earthquake

Date: April 22 through May 1991

Location: Northwestern Panama, especially Almirante, Bocas del Torro, and Changuinola, (and southeastern Costa Rica)

No. Dead: 23

No. Affected: 5,000 homeless; 270 injured.

Total USG Assistance: \$275,696

The Disaster

On April 22, 1991, a 7.4 magnitude earthquake rocked northwestern Panama and southeastern Costa Rica (see "Costa Rica - Earthquake"). Following the quake, several aftershocks, registering from 4.0 to 5.9 on the Richter scale, jolted the same areas throughout the next month. The most serious effects in Panama were felt in the towns of Changuinola, Almirante, Bocas del Torro, and Guabito, where widespread flooding and severe structural damage were reported.

On April 23, a joint team of U.S. and Panamanian experts visited the affected areas to assess the damage caused by the temblor. The team was comprised of an A.I.D. official, two physicians, the Secretary of the Ministry of Government and Justice, and the Vice Minister of Housing. Based on communication with local residents and overflights above the disaster site, the U.S./Panama team assessed that approximately 850 to 1,000 homes caved in, resulting in 23 deaths and 270 injuries. Buildings still standing were cracked, sheared in half, or had sunk one meter into the ground, and thus were structurally unsound, leaving about 5,000 homeless. No potable water was available, nor was there any electricity due to the extensive damage to the power lines.

The tremor also dealt a severe blow to businesses in the affected areas. Local economic activity essentially consists of exports of bananas, banana puree, melons, pineapples, lobsters, and other kinds of seafood, as well as cardboard boxes to Europe. As the Sixoala bridge from Panama to Costa Rica collapsed during the quake, and ferry owners could not afford dredging operations to deepen the channel to allow the passage of their ferries,

badly needed staple supplies and medicines to the disaster site were also cut off.

Action Taken by the Government of Panama (GOP)

To respond to the extensive damage caused by the earthquake, the GOP declared a national state of emergency, established an operations center in Changuinola, organized disaster assessment teams and relief activities for all affected areas, and appealed for international emergency assistance. Through special supplemental legislation, the GOP allocated \$10 million for earthquake reconstruction.

Assistance Provided by the U.S. Government

In response to the GOP's appeal for help and the U.S./Panama team's assessment, U.S. Ambassador Dean R. Hinton declared a disaster on April 23, releasing \$2,086 from his Ambassador's Authority to fund a USAID/Panama assessment of the stricken area. On April 24, OFDA Regional Advisors, a USAID official, and a Mission engineer traveled to Changuinola to further assess the extent of the crisis and to conduct field operations.

Following the assessment, OFDA tasked DOD to transport 225 rolls (585,000 sq. ft.) of plastic sheeting, 1,000 blankets, and eight 3,000-gallon water bladders from the Panama stockpile to the disaster victims and to provide 40 cases of Meals Ready to Eat (MREs). Transport costs totalled \$15,000, plastic sheeting was valued at \$65,205, blankets were valued at \$4,050, and MREs were worth \$2,046. OFDA also obligated \$4,516 to locally purchase fuel for DOD relief flights and arranged with DOD to provide a reverse osmosis water purification unit at a cost of \$3,840.

A USGS team, funded by OFDA, traveled to Panama to examine the effects of the earthquake and to provide technical expertise. The team's travel expenses totaled \$2,868. OFDA also paid travel costs for a seismic expert to assess earthquake damage and sponsored a seismic technician who repaired, installed, and ensured proper usage of seismic equipment. Their travel costs combined totaled \$5,085.

The U.S. military from SOUTHCOM provided medical assistance, transported medical supplies to disaster victims, and provided 40 cases of military MREs (paid for by OFDA) for relief workers to the affected areas. In addition, the Panama Canal Commission donated 16 pallets of plywood and medical supplies worth \$21,000 from the U.S. Excess Property Program to the GOP for reconstruction efforts.

In May, USAID/Panama allocated \$150,000 under its Immediate Recovery Project to provide matching funds for self-help activities at the community level.

Summary of USG Assistance

Ambassador's Authority	\$2,086
DOD transport of plastic sheeting, blankets, water bladders and MREs (OFDA).....	\$15,000
Value of plastic sheeting (OFDA).....	\$65,205
Value of blankets (OFDA)	\$4,050
Fuel for DOD flights (OFDA).....	\$4,516
Travel costs for USGS team (OFDA).....	\$2,868
Travel costs of seismic expert and seismic technician (OFDA).....	\$5,085
Cost of 40 cases of MREs (OFDA).....	\$2,046
Use of DOD water purification unit (OFDA).....	\$3,840
Medical supplies and 16 pallets of plywood (Panama Canal Commission).....	\$21,000
Allocation of funds under Immediate Recovery Project (USAID/Panama)	\$150,000
Total OFDA	\$104,696
Total Other USG	\$171,000
TOTAL	\$275,696

Assistance Provided by U.S. Voluntary Organizations

ARC - dispatched delegates to provide medical relief services to the disaster victims. ARC also shipped a consignment of 8,000 blankets, six tents, 1,000 kitchen utensils, and 7,500 comfort kits consisting of personal hygiene items and toys for children, and gave \$4,386 in cash to Panama.

SCF/US - provided relief services.

Assistance provided by the International Community

International Organizations

UNICEF- dispatched \$25,000 worth of food, medicines, and other medical supplies.

Governments

Belgium - provided tents, blankets, generators, and water tanks valued at \$72,046 via MSF/Belgium.

Canada - sent \$43,478 through LRCS and \$26,087 worth of medical supplies through PAHO to Panama.

Finland - gave \$27,681 through LRCS.

Italy - provided three generators, 200 tarpaulins, 150 kitchen sets, 141 family kits, and 25 tents (including transportation) at a cost of \$52,500, via UNDRO.

Japan - donated \$128,000 worth of emergency assistance to Panama.

Spain - gave 50 tents, 500 blankets, one MT of medicine, and 1.348 MT of first-aid materials valued at \$157,143. Transportation costs of these relief supplies was \$32,381.

United Kingdom - gave \$17,544 for the local purchase of various emergency items.

PERU - Epidemic

Date: Began January 1991

Location: Countrywide

No. Dead: 2,909 in 1991; 283 in 1992 as of March 7

No. Affected: 322,652 cases in 1991; 79,617 cases in 1992 as of March 7

Total USG Assistance: \$1,037,339

The Disaster

The first case of what was to become the first cholera epidemic in this century in the western hemisphere was reported on Jan. 23, 1991, in the port of Chancay, some 60 km. north of Lima. Fifty-three cases were reported in Chancay on Jan. 29, by which time smaller outbreaks were also occurring in Chimbote and Piura, coastal towns to the north. The cholera organism was positively identified in laboratory tests on Feb. 4 as *vibrio cholera* of El Tor biotype.

The epidemic spread rapidly up and down the coast and in some of the highlands, reaching a peak in February (60,208 cases and 285 deaths), March (77,893 cases and 762 deaths), and April (52,659 cases and 555 deaths). By March, the epidemic had also spread to the Amazon Basin where the number of cases rose markedly in April and May. From May to October, the overall number of cases declined for the country, but smaller outbreaks began to occur again in November with the beginning of summer in the southern hemisphere. The total number of probable cholera cases in Peru in 1991 reached at least 322,652, with 119,523 hospitalizations and 2,909 deaths. Some tracking of statistics, however, may have been neglected during a long-term strike of Ministry of Health personnel during 1991. (As of March 7, 79,617 probable cases of cholera had been reported in 1992, with 35,814 hospitalizations and 283 deaths.)

In July 1991, government reports indicated that the highest incidence of the cholera epidemic had been in coastal departments, with 86% of the cases, 82% of hospitalizations, and 41% of the deaths. The case-fatality rate in the coastal departments was the lowest of the three regions due to better access to health services. In the highlands and jungle areas, however, where

health facilities were scarce to non-existent, the case-fatality rate was eight to nine times higher than in the coastal areas.

Cholera is an intestinal disease spread through contaminated water or food and causing diarrhea and severe fluid loss that can lead to death in a matter of hours, if left untreated. Although the source of introduction of the disease in Peru was undetermined, conditions favoring the development of an outbreak of cholera clearly existed, especially among the large shantytown populations lacking access to safe water. A team from the Water and Sanitation for Health Project (WASH), tasked by USAID/Peru to conduct an assessment, noted that the water supply and sanitation conditions in Peru had been characterized as a disaster waiting to happen. According to a report submitted by the WASH team, poorly maintained infrastructure subjected most urban water supplies to contamination from leaks, back-siphoning, and cross-connections. Chlorination of water supplies was rare, and most areas were not serviced by properly functioning sanitary sewers. In the poorest neighborhoods, residents were not connected to piped water or sewage systems and had to make use of public standpipes or buy water from vendors. Poor hygienic practices created a serious danger of contamination of stored water and food. The common practice of discharging raw sewage into the sea was suspected as a source of contamination of coastal fishing grounds. This was of major concern as fish is a main staple in the diet of coastal populations.

The cholera epidemic, once started in the Americas, did not stop at Peru's borders, although nowhere else did the outbreak strike with such severity. Cases were also reported in Ecuador, Colombia, Chile, Brazil, Bolivia, Guatemala, Panama, El Salvador, and Mexico.

The epidemic had a serious impact on Peru's already strained economy. By Feb. 25, losses in export revenues were estimated between \$132-\$343 million due to the cancellation of contracts in several countries that purchase Peru's fruits, vegetables, fish, and seafood. Approximately 10,000 fishermen were put out of work by the drop in sales of fish and seafood. In a visit to Peru in mid-March, WHO's Director-General estimated total costs of the epidemic at \$1 billion, and appealed for international assistance to help Peru strengthen its

medical infrastructure, and rebuild its water and sewage treatment facilities.

Action Taken by the Government of Peru (GOP)

The Office of Epidemiology of the GOP's Ministry of Health (MOH) sent a team of field epidemiologists to Chancay when the first cases of suspected cholera were reported. Once the disease was positively identified, the GOP promptly organized a nationwide control and treatment program. The GOP declared a national health emergency to last for 120 days in the most severely affected regions, and appealed for international assistance to provide drugs, ORS, hospital and laboratory equipment, support for educational programs, and technical expertise.

The MOH began an educational campaign to alert the public to the symptoms of the disease, and to recommend the adoption of preventive measures such as boiling water, cooking fish and seafood thoroughly, disposing of human wastes safely, and handling food hygienically. The MOH also sent extra medical supplies to health facilities in the affected areas and informed health personnel of the appropriate treatment procedures. Assisted by the Peruvian air force, the MOH airlifted between seven and ten tons of medical supplies to different department health units daily. Fortunately, the MOH had adequate supplies of IV solutions and ORS on hand for early successful treatment of patients. This reduced the case-fatality rate to below 1% countrywide. As of Feb. 27, the GOP had allocated \$4 million to fighting the epidemic.

The GOP recognized that to prevent cholera from becoming endemic, long-term measures were required. At a Feb. 24 press conference, the Minister of Health declared the GOP's intention to repair and extend water and sewer lines. He added, however, that resource constraints would prohibit such work in the near future. The emphasis, therefore, remained on shorter term prevention and control. On March 5, the Health Minister submitted a formal request to USAID/Peru for the services of two specialists from the Drinking Water Quality Research Division of the U.S. Environmental Protection Agency (EPA) to provide technical assistance to strengthen control measures. In late April, an inter-ministerial "National Multi-Sectoral Commission for the Fight Against Cholera" was established by the GOP.

The commission was chaired by the Minister of Health and attended by several other ministries, including housing, education, agriculture, and fisheries. Upon the recommendation of the commission, the GOP approved a plan to improve environmental sanitation and adopted a plan for cholera control and prevention for the period 1992-93. A sectoral cholera committee headed by the Vice-Minister of Health managed specific aspects of the anti-cholera campaign and coordinated with external donors.

Other local organizations helping to combat the cholera outbreak included the Center for Disaster Study and Prevention and the Project for Integral Development, both of which provided educational resources and other assistance. In northern Peru, a Church World Service colleague agency, the Fisheries, Agriculture, and Livestock Promotion Services (SPA), helped find alternative employment for those whose fishing livelihood had been lost.

The GOP cooperated fully with other governments in Latin America concerned that the disease would spread to their countries. Peruvian health officials met in Lima on Feb. 27 with health ministers from Bolivia, Colombia, Chile, Ecuador, and Venezuela to coordinate preventive action. This was followed by an intergovernmental meeting in Bolivia April 20 to 22, and a PAHO-sponsored seminar in Washington, D.C. from April 29 to May 3. On May 15, Peru and Brazil signed a joint anti-cholera strategy agreement, and Brazilian doctors traveled to the Peruvian Amazon region to help care for cholera victims in communities having little access to health services. Presidents of the Andean Pact countries (Bolivia, Colombia, Ecuador, Peru, and Venezuela) met in Caracas on May 17 to draft a three-year plan entitled "Andean Emergency Health Program: Cholera."

Assistance Provided by the U.S. Government

A.I.D. development programs, under the Child Survival Project, had supported the MOH and local health institutions for several years before the cholera epidemic began. These programs helped the MOH identify and respond to the epidemic quickly, holding the case-fatality rate to a low level. The field epidemiologists sent to investigate the first reported cases had participated in the A.I.D.-supported Field Epidemiology

Training Program. USAID/Peru further assisted the MOH by developing a computerized health information system which enabled the MOH to track the course of the epidemic. The Child Survival Project also supported training for diarrheal disease control which prepared the MOH staff to begin prompt treatment of cholera victims with the use of ORS. Using P.L. 480 Title I counterpart funds, USAID/Peru assisted with the local procurement of ORS. At the request of the MOH, USAID/Peru arranged for two senior CDC epidemiologists to travel to Lima on Feb. 10 to work with local epidemiologists in designing and implementing control measures. The CDC team was joined on Feb. 27 by three more CDC epidemiologists.

Because of the severity of the outbreak and the limitation of country resources, U.S. Ambassador Anthony Quainton responded to the GOP appeal for international assistance with a disaster declaration on Feb. 26. OFDA augmented the Ambassador's Authority to provide a total of \$42,000 for the local purchase of medicine, which included 22,000 bottles of IV solution and 10,000 IV sets (tubing). OFDA arranged with DOD to transport the medicine to Peru from Bogota, Colombia, where it had been purchased. The first planeload arrived on March 8 in a USSOUTHCOM C-141. The second load arrived on March 10 on a C-130 aircraft of the Colombia Air Force. The cost of the airlift was \$28,000. Most supplies were used in the Cajamarca Department, one of the most severely affected regions.

On April 5, a U.S. Air Force C-5A Galaxy aircraft delivered 70 tons of supplies to Peru, including two tons of hospital beds from DOD and 65 tons of medical supplies contributed by U.S. PVOs, Project Hope, and WVRD.

USAID continued to support control efforts of the MOH by providing and coordinating the provision of various types of technical assistance. At the request of the GOP, two specialists from EPA traveled to Peru to assess the water quality, while a team from the U.S. Food and Drug Administration (FDA) conducted a food safety assessment of the seafood industry. The Office of International Health of the U.S. Department of Health and Human Services arranged with PAHO to send the second CDC team, and the EPA and FDA teams to Peru.

In March, USAID requested a team from the WASH to survey the country's water supply and sanitation sector, with respect to the cholera epidemic. The team submitted a field report entitled "Cholera in Peru: A Rapid Assessment of the Country's Water and Sanitation Infrastructure and its Role in the Epidemic." Additional WASH assistance was requested to organize a four-day workshop in June, with the participation of 35 people from 25 different institutions dealing with potable water supply and sanitation. Three experts from WASH worked with staff from the GOP's Multi-Sectoral Cholera Committee to draft a national master action plan for water and sanitation services for the medium term.

To assist efforts by A.I.D. Missions in Latin America to control cholera in the region, the Latin America Caribbean Bureau made available an additional \$10 million in development assistance funds for a two-year program, beginning in FY 1991. The funds were added to the regional Health and Nutrition Technical Services Support Project to provide technical support from A.I.D. central projects, as well as to establish agreements with the CDC and the U.S. Public Health Service. Missions were invited to submit requests after consulting their respective ministers of health.

Summary of USG Assistance

OFDA Assistance

Ambassador's Authority used for purchase of medicine	\$42,000
DOD airlift of medicine from Colombia	\$28,000

Other USG Assistance

USAID/Peru	
Travel cost of first CDC team	\$7,000
Buy-in for technical assistance in health communications.....	\$70,000

DOD

Transport of medical supplies and donation of equipment	\$274,000
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LAC Bureau
Travel of second CDC team, EPA and FDA teams (HHS/OIH/PAHO)..... \$20,000
WASH survey \$27,000
WASH health project..... \$40,250

LAC Regional Program
WASH workshop \$83,410
Travel of experts and clinical training workshop..... \$12,654
Health communications technical assistance \$94,010
ORS quality control equipment for Laboratorios Unidos (LUSA) (through HHS/PHS)..... \$16,065
IV fluids (HHS/PHS) \$78,440
Supplies for the National Health Institute (HHS/PHS)..... \$235,000
CDC technical assistance..... \$9,510
Total OFDA \$70,000
Total Other USG \$967,339

TOTAL \$1,037,339

CRS - provided medical supplies and training worth \$56,000.
CWS - issued an appeal, sent \$5,000 from the Executive Director's Emergency Fund, and gave an additional \$94,295 in medical supplies and cash to local organizations in Peru helping to combat cholera.
Direct Relief International (DRI) - targeted a children's hospital and two other facilities caring for cholera patients to receive a 8,555 pound shipment of medical supplies, with a wholesale value of \$80,071.
LWR - shipped 1,380 health kits and 10 bales of blankets to its office in Lima.
MAP - sent about \$250,000 worth of health supplies to Peru, Ecuador, and Bolivia.
Northwest Medical Teams - sent medical supplies valued at \$10,000.
Operation USA - provided medical supplies for DRI's shipment.
SCF/US - delivered \$2,000 worth of antibiotics.
WVRD - gave medicine and equipment valued at \$90,000.

Assistance Provided by U.S. Voluntary Agencies
(Note: In some cases, assistance for Peru cannot be separated from assistance to other countries in the region. All contributions listed below were for Peru unless otherwise specified.)

CARE - provided antibiotics, ORS, and Ringer's lactate to the MOH. CARE also conducted educational campaigns in marginal neighborhoods, constructed latrines in Lima slums, and purchased water tanks for community kitchens.
Christian Children's Fund - donated medical supplies and laboratory equipment valued at \$15,250.

Assistance Provided by the International Community

International Organizations
EC - provided grants totaling \$1,370,000 for the purchase of drugs, medical equipment, and disinfectants.
International Development Bank - donated (through PAHO) \$1,000,000 worth of equipment for water treatment, ORS, laboratories and hospitals, and educational materials.
LRCS - provided 10,000 saline solvents, 2,000 IV sets, and other supplies.
UNDRO - issued an international appeal and disseminated information.

UNICEF - provided IV solutions, IV administering sets, ORS, antibiotics, and support for media campaigns and training. Assistance to Peru amounted to \$588,000.

WHO/PAHO - sent medical teams and supplies, coordinated the relief effort, and convened seminars.

Governments

Argentina - gave 20 MT of medicine.

Austria - donated medical supplies.

Bolivia - sent a medical team and three MT of medicine.

Brazil - provided medical personnel and supplies, all valued at \$200,000.

Canada - provided \$412,000 in grants to PAHO, UNICEF, and NGOs for sanitation and medical programs.

Chile - gave medical assistance worth \$47,000.

Colombia - donated medicine and ORS.

Cuba - airlifted IV fluids and antibiotics at a cost of \$45,000.

Dominican Republic - sent medicine.

France - dispatched a team of epidemiologists and one MT of medicine. The assistance was valued at \$40,000.

Germany - donated antibiotics, water treatment supplies, and support to health services, all valued at \$343,760.

Ireland - gave \$30,000 through UNDRO and PAHO.

Italy - donated \$5,000 worth of antibiotics and IV sets.

Japan - contributed medicine and medical supplies worth \$532,000.

Mexico - donated medicine valued at \$25,000.

Netherlands - gave \$59,524 through PAHO.

Norway - provided \$155,000 through NGOs.

Spain - sent relief flights to Peru, Bolivia, and Ecuador, all valued at \$1,792,000.

Sweden - donated \$141,000 through NGOs.

Switzerland - sent a medical team, medicine, and supplies at a cost of \$197,000.

United Kingdom - provided \$210,840 worth of aid.

Uruguay - donated medicine and other supplies.

Vatican - gave \$30,000.

Venezuela - sent 10 MT of medicine worth \$10,000.

Non-Governmental Organizations

Adveniat (Germany) - contributed \$68,000.

Caritas (Austria, Germany, Italy, Netherlands) - gave \$302,000.

Diakonisches Werk - donated \$209,000 to support health programs.

Medecins du Monde - sent a team and supplies.

MSF (Belgium, France) - sent a team and 17 MT of supplies.

Red Cross Societies (Austria, Colombia) - donated \$19,000 worth of medicine.

Secours Catholique (France) - contributed \$141,000 worth of assistance.

OTHER LATIN AMERICA AND CARIBBEAN DECLARED DISASTERS

ARGENTINA - Volcanic Eruption

Following seismic activity measuring two to five on the Richter Scale, Mount Hudson Volcano, located in southern Chile, began a series of major eruptions that lasted from Aug. 8 through Aug. 26, 1991. This volcanic eruption occurred after a 20-year dormant period. Initially, ash and gas emissions moved primarily north toward Chile. Powerful gales (140 kph.), however, changed the direction of the fallout, and caused it to move southeastward from the northwestern to the southeastern regions of neighboring Argentina, reaching as far as the Atlantic coast.

Heavy accumulations of ash and coarse sand from 10 to 50 cm. thick were reported in the Argentine towns surrounding the volcano, especially in the sparsely populated semi-arid southwestern province of Santa Cruz. Thick layers of ash and lapilli-sized sand deposits, combined with heavy rain, snowfalls, and ice blocks up to five meters in diameter dislodged from a large glacier at the mouth of the volcano, covered large expanses of Argentine agricultural lands and river valleys. As a result, about 175,000 ha. of grazing fields became unusable and food and water supplies were contaminated. In addition, many expensive, partially-completed mineral exploration surveys were terminated due to excessive ash-contamination of those areas.

Although no casualties were reported, an estimated 62,000 people (in Chile and Argentina) were affected, of which approximately 1,200 were left homeless. The affected population also suffered respiratory and gastrointestinal problems, as well as eye and nose infections. These problems were caused by the distribution of volcanic dust particles with a high content of sulfur dioxide, fluoride, and other chemicals and noxious gases. Difficulties in livestock feeding, resulting from wasted grazing fields and contaminated waters, adversely affected roughly 600,000 cattle and sheep. The local salmon fishing industry also suffered when large numbers of fish perished due to heavy accumulations of ash, silt, and sharp glass shards. Transportation and communications were cut off in this already remote and desolate part of the world.

The Government of Argentina (GOA) promptly dispatched a team of medical and national emergency experts as well as officials from the Ministries of Interior, Agriculture, and Public Works to the affected

area to assess the situation, and coordinate and head local relief efforts. The GOA military provided victims in Santa Cruz with 6,000 disposable gas masks, food, water, fuel, and medical supplies through the Argentine Red Cross. In addition, the GOA evacuated affected residents to emergency shelters in safer regions of the country. The provincial government reserved \$50,000 to deal with the crisis. The Argentine American Chamber of Commerce in the United States offered free air travel and hotel accommodations to all U.S. emergency experts sent to help deal with the disaster. Aerolineas Argentinas volunteered to transport all international donor relief supplies free of charge.

On Aug. 19, 1991, following an appeal for international emergency assistance from Argentina's Minister of Health, U.S. Ambassador Terence A. Todman used \$25,000 provided under his Disaster Assistance Authority to help alleviate the effects of the volcanic eruption on the population of Santa Cruz. The funds were used to provide the Argentine Ministry of Health (MOH) with 400 pairs of industrial goggles, and, through the U.S. Salvation Army, 1,500 liters of mineral water and 1,500 liters of milk, as well as eye drops and industrial tape to MOH officials in Santa Cruz.

Subsequently, OFDA arranged to send Dr. Carol Rubin, a veterinarian, to investigate livestock problems caused by the volcano. Her travel expenses amounted to \$3,579. OFDA also contributed 5,000 disposable respirator face masks from the Panama stockpile.

UNDRO/UNDP requested the loan of radio-linked seismographs from Colombia, and asked the USG for equipment and expertise for field measurement of fluorides and other poisonous elements, to assess the risks associated with the volcanic eruption. In addition, UNDRO arranged with the USG to send Dr. Norman Banks of the Cascades Volcano Observatory in Vancouver, Washington, to Argentina and Chile. Dr. Banks' objective was to determine the short- and long-term impact of the volcanic eruption on Argentine human and livestock health, and to make recommendations for minimizing the adverse effects of the disaster.

Israel gave the GOA 2,000 gas masks.

TOTAL USG

\$28,579

Costa Rica (GOCR) issued an appeal for international aid.

On Jan. 3, 1991, the U.S. Deputy Chief of Mission, Robert Homme, declared that a disaster existed in Costa Rica. He requested materials from OFDA to construct temporary housing for the evacuees sheltered in public schools to ensure that the schools would be available for the opening of the school session. OFDA authorized \$7,000 to DOD to airlift 100 rolls of plastic sheeting from the Panama stockpile and eight 3,000-gallon water tanks to Costa Rica. The plastic sheeting, including the cost of restocking the stockpile, was valued at \$29,980, and the water tanks were valued at \$15,696. International relief agencies, including PAHO, IFRC, and UNDRO/UNDP worked with OFDA and the GOCR to assess the earthquake's damage.

TOTAL USG \$52,676

COSTA RICA - Floods

From Aug. 11 through Aug. 15, 1991, raging torrents of rain hit Costa Rica and neighboring Panama (see "Panama - Floods" for details on the impact of the disaster on that country). In Costa Rica, the resulting 100 plus centimeters of rainfall precipitated severe flooding and landslides, displacing people in the densely populated areas of Turrialba, Talamanca, and Valle de la Estrella, and in towns near southern Limon. The same areas were struck by the April 22 earthquake earlier that year.

Costa Rica's National Emergency Committee (NEC) reported that some 56 villages were submerged and approximately 54 communities were isolated (mostly in Valle de la Estrella and Talamanca), affecting an estimated 33,000 families (about 165,000 people). At least 3,500 homes were destroyed, leaving possibly as many as 20,000 people homeless. Fortunately, there was only one confirmed death. Such low casualties were attributable largely to the country's high level of public awareness and efficient communication networks. About 50 U.S. citizens were stranded in Puerto Viejo, located near Limon City.

The floods cut off 28 rural water supply lines and contaminated the water in wells used by people in the disaster area. Damage to the infrastructure was

extensive: eight highways were destroyed, at least nine bridges collapsed, roads were washed out, and railway services were disrupted. Continuous rain, combined with road and bridge destruction, complicated search and rescue operations and ruined A.I.D.-financed earthquake reconstruction efforts implemented in April. The local economy also suffered tremendously with the loss of over 4,500 ha. of large-scale banana plantations and small-farmer operations, which totaled an estimated \$8 million in damage.

At a meeting with key donor representatives on Aug. 14, the Government of Costa Rica (GOCR) appealed for relief transportation, portable water equipment, temporary shelter materials, electric generators (13-15 kws.), chlorine tablets for water purification, radio equipment to monitor the water level of the Pocosi and Sigueres rivers, and other international assistance to help its people cope with the disaster. The NEC, firemen, civil and rural guard, and the Costa Rican Red Cross received air-amphibious transportation assistance for evacuation and rescue efforts in the form of helicopters from the Nicaraguan Air Force and the U.S. Army, as well as boats supplied by national institutions. In addition, the GOCR set up 26 emergency camps housing 7,958 displaced persons, and provided them with food, water, milk, medicine, clothing, blankets, and mattresses. The Costa Rican Ministry of Health (MOH) promptly took action in the health sector by monitoring the disaster-affected area for evidence of water-borne diseases such as cholera, providing chemical latrines for the emergency camps, rebuilding medical centers, supplying drinking water, and supervising the distribution of food to isolated zones.

On Aug. 12, 1991, U.S. Deputy Chief of Mission Robert Homme declared the situation a disaster and exercised his Disaster Assistance Authority. The \$25,000 was used for SOUTHCOM's provision of 20 hours of helicopter flight time for relief and evacuation purposes. OFDA later augmented these funds by \$80,000 to cover the cost of 60 additional hours of helicopter flying time, and to airlift 160 rolls of plastic sheeting from Panama to Costa Rica for the construction of temporary housing. The replacement cost of the 160 rolls of plastic sheeting was \$46,368. Shipping costs to replace water tanks used for the earthquake and flood disasters amounted to \$623.

Additional contributions from the international community were also made towards the relief effort. UNDRO provided \$20,000 in cash for the local purchase of relief items. Norway donated \$11,000 in cash.

TOTAL USG \$151,991

HAITI - Civil Strife

On Jan. 17, 1991, a land dispute escalated into an attack on the village of Gervais in the Artibonite Valley, by a group from a neighboring village. The assailants burned homes, assaulted residents with machetes, stole livestock, and destroyed crops and other property. Some reports indicated that the aggressors may have acted with support from local authorities. Ten days later, rioting erupted in various sections of Port-au-Prince and other Haitian cities. The protests were allegedly based on the false rumor that a coup d'etat was in progress and that Dr. Roger Lafontant, former interior minister under Jean-Claude Duvalier and a leader of the Tontons Macoutes, was soon to be released from prison.

According to the Haitian Red Cross (HRC), at least 58 people were killed and more than 50 were wounded during the attack on Gervais. In Port-au-Prince, many were injured and an estimated 12 people were killed, including two blind musicians who were burned to death. Over 360 houses were reportedly burned or otherwise destroyed in Gervais, and the destruction of property rendered at least 40 families homeless in Port-au-Prince.

A team from the Haitian Disaster Relief Agency, OPDES, along with health care professionals and an engineer from the Haitian Red Cross, traveled to Gervais to assess damage. OPDES also assessed needs in Port-au-Prince and submitted a written request to the U.S. Embassy in Haiti for assistance with displaced families in both areas.

On Feb. 1, the U.S. Ambassador to Haiti, Alvin P. Adams, declared that the two episodes of civil unrest constituted a disaster that was beyond the government's capability to adequately respond. OFDA provided \$25,000 to the USAID/Haiti for the HRC to purchase building materials, food, blankets, medical supplies, and cooking utensils for displaced Haitians, and to cover

administrative costs for relief operations. FFP also allocated 28 MT of PL-480 Title II food to the Haitian Red Cross for a one-time emergency food distribution. The food, valued at approximately \$12,000, was taken from FFP's regular Title II allocations for Haiti.

TOTAL USG \$37,000

HAITI - Emergency

On Dec. 5, 1990, a large explosive device detonated in the midst of a political rally in support of presidential candidate, Jean-Bertrand Aristide. PAHO and the Haitian Red Cross (HRC) reported seven killed and 51 injured by the explosion in Petionville, seven miles outside of Port-au-Prince. Many of the wounded suffered severe lower body injuries, some requiring amputation. Beyond the casualties, there was no substantial damage.

The Haitian Disaster Relief Agency asked for USG assistance after concluding that the need for medical supplies and equipment to deal with the seriousness of the injuries was beyond local capacity. On Dec. 7, 1990, Ambassador Alvin P. Adams declared a disaster and donated \$25,000 to the HRC. The funds were used to purchase medical supplies for private and public hospitals, and to cover some administrative costs relating to the care of the bomb victims. The fund agreement was later amended to purchase emergency medical equipment and supplies to prepare for potential emergencies during the pre- and post-electoral period. The amended fund was also used to procure 720 white sheets and antibiotics from the USG for the Department of Orthopedics of the University Hospital in Haiti.

TOTAL USG \$25,000

JAMAICA - Floods

Torrential rains hit the island of Jamaica from May 21 to 22, 1991, inundating the parishes of St. Catherine and Kingston. Flood waters caused the collapse of the Rio Cobre Diversion Dam, disabled its accompanying spillway and gravity-fed irrigation systems, and broke its thirty-inch pipeline that served the island's major pumping station in Kingston. At least 150,000 people were left without piped water, and 80,000 rural families were temporarily displaced. The affected population

totaled about 550,000. The floods caused an overall estimated damage of about \$33 million.

U.S. Ambassador Glen A. Holden issued a disaster declaration on May 24, and received \$890 under his disaster authority to airfreight 16 3,000-gallon, portable water tanks to Jamaica from the stockpile in Panama. Transport costs to replace the water tanks in the stockpile amounted to \$1,034.

TOTAL USG **\$1,924**

PANAMA - Floods/Mudslides

From Aug. 11 through Aug. 19, 1991, torrential rains triggered severe flooding and landslides in Bocas del Toro Province, an area rocked by an earthquake four months earlier. Serious effects in the province were felt in the watershed area of the towns of Las Tablas and Barranca Adentro, where huge boulders, large chunks of earth, and massive trees uprooted by the April quake came crashing down from the hills. The combination of floods and mudslides also caused the collapse of the water supply reservoir above Las Tablas.

According to the Government of Panama (GOP), the calamity adversely affected 20,000 people, left two dead and 10 missing, and resulted in 61 injuries. Some 400 homes were submerged under the combination of mud and water. A major concern was the high vulnerability of the populace in Changuinola, Chiriqui Grande, and Bocas del Toro to a potential epidemic caused by stagnant flood water.

The Ministry of Justice's civil protection organization (Sistema Nacional de Proteccion Civil) and the Ministry of Health (MOH) were in charge of local emergency operations. The GOP managed to evacuate about 1,129 affected people to temporary shelters. Most of the immediate needs of the victims were met with food and water from Panamanian sources, and from leftover supplies from the preceding earthquake relief effort. The MOH also monitored the disaster area out of concern that the damage to water and sewerage systems might increase the community's susceptibility to water-borne diseases. The GOP appealed to the international community for emergency assistance in the form of pharmaceutical supplies such as antibiotics, temporary housing materials, and the technical expertise of a

landslide expert to assess the situation and offer suggestions on how to alleviate the effects of future similar hazards.

On Aug. 16, U.S. Deputy Chief of Mission David R. Beall declared that a state of emergency existed in Bocas del Toro, warranting USG disaster assistance. The \$25,000 provided under the Ambassador's Authority and additional funds were used for the following emergency operations and supplies: 60 hours of DOD helicopter airlift services (\$12,000), shipping costs to replace eight 3,000 gallon water tanks in the Panama stockpile (\$512), procurement of 1,000 wool blankets to replace in the stockpile (\$4,050), and transport of excess DOD lumber from Panama City to Bocas del Toro for the local Catholic Charities (\$5,500). The lumber was used to rehabilitate homes and infrastructure in two villages devastated by floods and landslides. In addition, USAID/Panama used \$7,500 for relief activities.

TOTAL USG **\$29,562**

PERU - Earthquake

From April 4 through April 8, a series of eight seismic shocks, each more destructive than the last, rocked the provinces of Moyabamba, Rioja, and Union in the northeastern department of San Martin, Peru. The successive shocks, ranging from 4.5 to 6.9 on the Richter scale, struck the same region hit by the 6.5 magnitude earthquake in May 1990.

According to the Peruvian Civil Defense, the quake took the lives of 53 people and caused 232 injuries. Over 9,000 houses were damaged, of which 900 were completely destroyed, rendering survivors homeless, and without proper sanitation. The shocks disrupted electrical power and the water supply, along with the island's sewage disposal system. Seven health centers, 78 educational centers, and some island roads also suffered damage.

The Government of Peru (GOP) responded to the disaster by airlifting 130 tents, 2,740 blankets, and 21,412 corrugated iron pieces, along with medical supplies, food, tools, and collapsible water tanks to affected areas. Relief efforts were complicated by torrential rains that obstructed the arrival of helicopter rescue teams. GOP resources were also strained from

their efforts to combat a concurrent cholera epidemic (see "Peru - Epidemic").

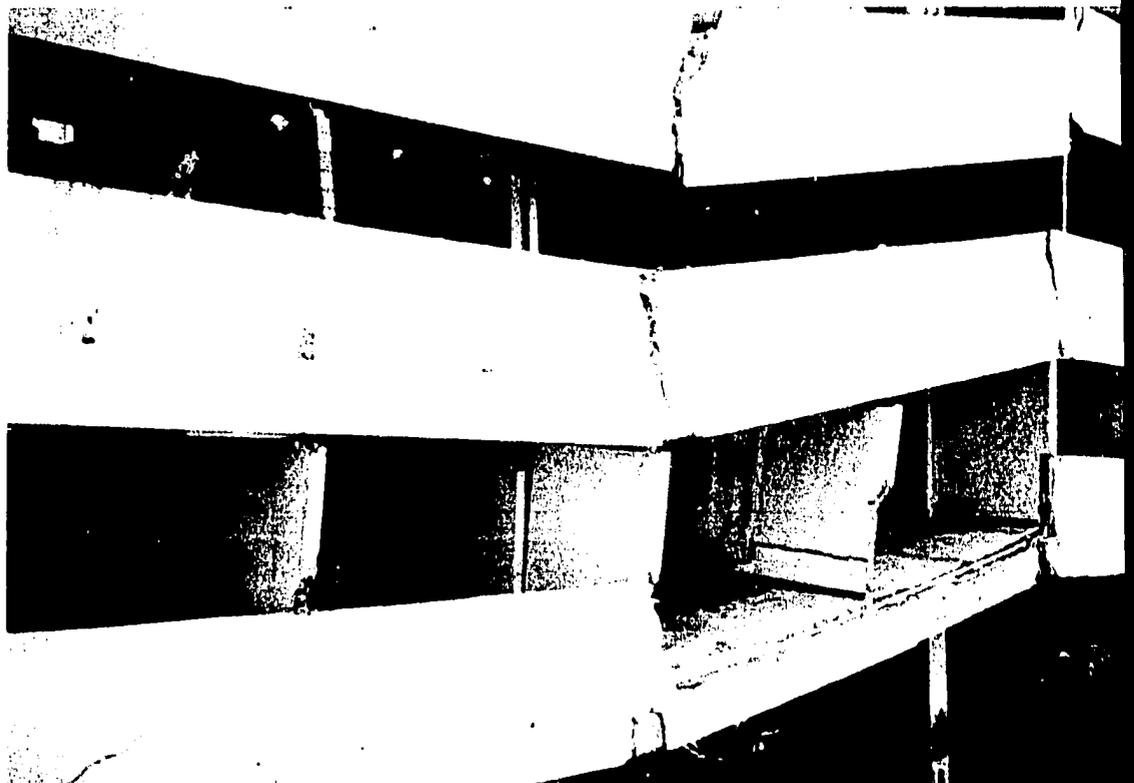
On April 9, U.S. Ambassador Anthony C.E. Quinton declared a disaster and released \$25,000 to purchase corrugated metal sheets to construct temporary housing for displaced families. Other donors included the EC, which contributed \$620,000 to finance emergency relief programs for quake and cholera victims.

TOTAL USG	\$25,000
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The April earthquake flattened many houses such as this one in Panama (above) and caused the collapse of the Hotel Olas in Limon, Costa Rica (below)

Photos by Alejandro James, OFDA Costa Rica





The Sixaola bridge in Costa Rica collapsed during the April earthquake
Photos by Alejandro James, OFDA/Costa Rica

OFDA water tanks in use after the earthquake in Panama



157