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# 20 Years of Response



Office of US  
Foreign Disaster  
Assistance

Annual Report  
FY 1984

Agency for  
International  
Development

THE WHITE HOUSE

WASHINGTON

September 18, 1984

Dear General Becton:

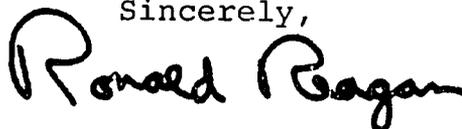
On behalf of all Americans, I congratulate the Office of U.S. Foreign Disaster Assistance and its dedicated employees on its 20th anniversary. The humanitarian service your office provides to disaster victims worldwide is one of which we are truly proud.

By coordinating U.S. Government aid to countries hit by natural or man-made disasters, OFDA has set an example of cooperation among government agencies while working effectively with our private sector and other donors to relieve suffering around the world.

Americans are generous people. When disasters strike here at home or overseas, the response is always, "What can I do to help?" That humanitarian spirit is reflected in the work of OFDA. We know the agony and sorrow our own citizens endure when floods, hurricanes, or drought strike our nation. In poor countries where development is still a goal -- not a reality -- the loss is intensified a thousand times.

I am pleased to recognize the Office of Foreign Disaster Assistance for its 20 years of outstanding service in bringing America's concern and care in times of emergency to millions of people who are unable to help themselves.

Sincerely,

A handwritten signature in black ink that reads "Ronald Reagan". The signature is written in a cursive, slightly slanted style.

General Julius W. Becton, Jr., USA (Ret.)  
Director  
U.S. Office of Foreign Disaster Assistance  
Agency for International Development  
Washington, D.C. 20523

# Contents

Congratulations from the President .....	ii
Message from the Director .....	iv
Administrator's Statement .....	iv
Twenty Years of Disaster Response .....	1
Disaster Relief in FY 1984 .....	6
U.S. Foreign Disaster Assistance .....	92
Summary Financial Tables .....	94

## Africa

Botswana — Drought .....	10
Burkina Faso — Drought and Food Shortage .....	12
Burkina Faso — Meningitis Epidemic .....	14
Djibouti — Drought .....	15
Ghana — Food Shortage .....	16
Guinea — Earthquake .....	20
Madagascar — Cyclones .....	23
Mali — Drought .....	27
Mauritania — Drought and Food Shortage .....	30
Mauritania — Floods .....	34
Mauritius — Cyclone .....	35
Mozambique — Cyclone .....	36
Mozambique — Drought .....	39
Niger — Drought .....	46
Sao Tome and Principe — Drought and Food Shortage .....	51
Senegal — Drought .....	52
South Africa — Cyclone .....	54
Swaziland — Cyclone .....	55

## Asia and the Pacific

Burma — Fire .....	58
India — Cyclone .....	59
Korea, Republic of — Floods .....	61
New Zealand — Floods .....	62
Papua New Guinea — Volcanic Activity .....	62
Philippines — Typhoons .....	64
Philippines — Volcanic Eruption .....	67
Sri Lanka — Floods .....	69
Thailand — Floods .....	70

## Latin America and the Caribbean

Antigua and Barbuda — Drought .....	72
Bolivia — Drought .....	75
Brazil — Floods .....	76
Costa Rica — Fire .....	77
El Salvador — Civil Strife and Displaced Persons .....	78
Grenada — Emergency .....	80
Guatemala — Civil Strife and Displaced Persons .....	84

## Europe and the Near East

Portugal — Floods .....	86
Spain — Floods .....	87
Turkey — Earthquake .....	88

## Message from the Director

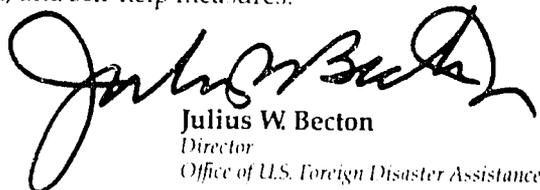
One year after the world's attention focused on massive flooding and drought throughout Latin America, OFDA began to respond to the first signs of a large-scale drought sweeping the African continent. Unlike regional bureaus that focus exclusively on one area, OFDA is responsible for coordinating U.S. assistance to disaster victims all over the world. So, while our office worked around-the-clock to bring food and needed supplies to victims of drought and other natural disasters in 15 countries in Africa, supplies were also being rushed to the Philippines following two devastating typhoons, to 33,000 homeless following a winter earthquake in Turkey, to survivors of a cyclone in India, and to thousands affected by fires, floods, and civil strife in countries in Central America.



AID Administrator Peter McPherson (center) honoring OFDA's first Director, Stephen Tripp (right), at 20th Anniversary celebration. Current OFDA Director, Julius Becton on left.

On a parallel front, OFDA's disaster preparedness and early warning programs concentrated on reducing the long-term effects of disasters. Individuals from over 50 countries participated in OFDA-sponsored preparedness programs, conferences, and training seminars in 1984 on topics ranging from crop monitoring and firefighting techniques to seismic-resistant construction and airport safety.

Disasters will not go away, but we're working to minimize their effects through rapid relief, mitigation, and self-help measures.

  
Julius W. Becton  
Director  
Office of U.S. Foreign Disaster Assistance

## Administrator's Statement

America has a proud tradition of responding generously to helping victims when disasters strike.

The Office of Foreign Disaster Assistance (OFDA) — celebrating its 20th anniversary this year — is that arm of AID which embodies that same American spirit and tradition of aiding disaster victims. During its 20 year history, OFDA has assisted victims of 772 disasters in 128 countries. OFDA staff works around the clock to get emergency relief supplies to victims suffering from famine, floods, fires, earthquakes, cyclones, and civil strife.

OFDA has been recognized the world over for its unique responsibility in coordinating with other international donors, organizations, and private and voluntary organizations in getting food and relief assistance wherever disaster strikes.

This year Americans have watched with shock and horror the starvation and death of thousands of African famine victims. The response both from the U.S. Government and the American people have been more generous than ever before in aiding these victims. OFDA has been in the forefront of this disaster effort. Long before television alerted the world to this disaster, OFDA was spearheading relief efforts.

But meeting emergency needs once disaster has struck is only part of OFDA's mission. More than at any other time in its history, OFDA is supporting disaster monitoring and early warning systems research to predict disasters. It is also actively assisting foreign governments by increasing their capacity to prevent disasters.

We can take pride in the accomplishments of OFDA — a U.S. Government office which truly reflects the spirit, concern, and generosity of the American people. We will continue to work together to prevent and alleviate disasters in the years ahead.



M. Peter McPherson  
Administrator  
Agency for International Development

# 20 Years of Disaster Response

## Tradition of Assistance Established Early

**T**he U.S. Congress made its first foreign aid appropriation in 1812, when \$50,000 worth of food and other supplies were delivered to victims of a massive earthquake in Venezuela. Until late in the century, however, most American foreign disaster assistance was provided by private voluntary agencies. After the Spanish American War the U.S. Government began to take a more active role in overseas relief: in 1899 Congress voted \$100,000 to aid war refugees in Cuba, \$200,000 was sent to help victims of the 1902 volcanic eruption in Martinique, and \$800,000 went to aid survivors of the Italian earthquakes of 1908.

Although foreign aid became institutionalized with the adoption of the Marshall Plan in 1947, foreign *disaster* assistance remained an *ad hoc* matter. No central office was responsible for disaster relief and little or no coordination existed between the government and the many American private agencies and international organizations already providing relief.

In 1963, when a devastating earthquake shook Skopje, Yugoslavia, the U.S. joined the international relief effort and sent food, tents, blankets, an Army field hospital, and other supplies from a variety of U.S. agencies. From the problems encountered in orchestrating this multi-agency response, the need for one central office to coordinate all USG assistance was identified. A year later, the Agency for International Development named its first Disaster Relief Coordinator. Thus, 1984 marks the 20-year anniversary of the U.S. Foreign Disaster Assistance program.

## The Program Today

**T**he Office of U.S. Foreign Disaster Assistance (OFDA) is now an independent office reporting directly to the A.I.D. Administrator, who is the President's Special Coordinator for International Disaster Assistance. OFDA is responsible for directing U.S. foreign relief efforts in all parts of the world. The agency is organized into three geographic divisions - Latin America and the Caribbean, Africa and Europe, and Asia and the Pacific - which facilitates coordination with other bureaus in A.I.D.,

the Department of State, and the Department of Defense. Augmenting OFDA regional divisions is the Operations Support Division, which has specialists in health, procurement, logistics, and science and technology.

OFDA's mission is to provide humanitarian assistance to victims of disasters around the world. The office responds to all types of natural disasters, including earthquakes, volcanic eruptions, cyclonic storms, floods, and droughts. It also provides technical assistance in the wake of accidental or man-made catastrophes, such as oil or toxic waste spills, power shortages, fires, explosions, and air crashes. When large numbers of civilians are affected by civil strife and temporarily forced to abandon their homes and livelihoods, OFDA provides immediate assistance.

OFDA can deliver relief supplies in 24 to 72 hours from stockpiles in five strategic locations around the world. Supplies include tents, blankets, cots, cooking stoves, plastic sheeting, emergency water treatment and disinfection units, water pumps, and hand tools. Additional supplies and equipment can be procured from companies in the United States.

## A Cooperative Effort

**O**FDA is not alone in responding to foreign disasters. As coordinator of the U.S. government's response, it can call upon the resources and expertise of other agencies such as the Departments of Defense, Health and Human Services, and Agriculture as well as the Peace Corps, the U.S. Geological Survey, the U.S. Forest Service, and the National Weather Service. Close cooperation is also maintained with American voluntary agencies and the international community. OFDA supports voluntary agencies in developing disaster preparedness plans and mitigation initiatives as well as relief operations. . . . the aftermath of Cyclones Oscar and Sara in Fiji, for example, a U.S. voluntary agency worked with OFDA and the Fiji government to design and construct new cyclone-resistant houses.

### The Three Phases of Disaster Assistance

**T**he international disaster community identifies three stages of disaster response: emergency relief, short-term rehabilitation, and reconstruction.

Emergency relief is the assistance given to save lives and alleviate suffering in the first days or weeks following a disaster. It includes meeting victims' immediate needs for food, water, clothing, shelter, and medical care.

Short-term rehabilitation includes actions taken in the weeks or months following a disaster to restore essential services, repair damaged houses or build temporary shelter, and allow a population to regain its previous level of self-sufficiency.

The final response stage is reconstruction. Projects in this phase include constructing permanent housing, expanding health care delivery systems, and improving national road networks. Reconstruction projects are essentially development activities and are therefore administered by the regional bureaus and overseas Missions of the Agency for International Development.

### Disaster Preparedness

**P**roviding emergency assistance to countries affected by disasters is just one of OFDA's functions under its mandate from the Foreign Assistance Act of 1961.

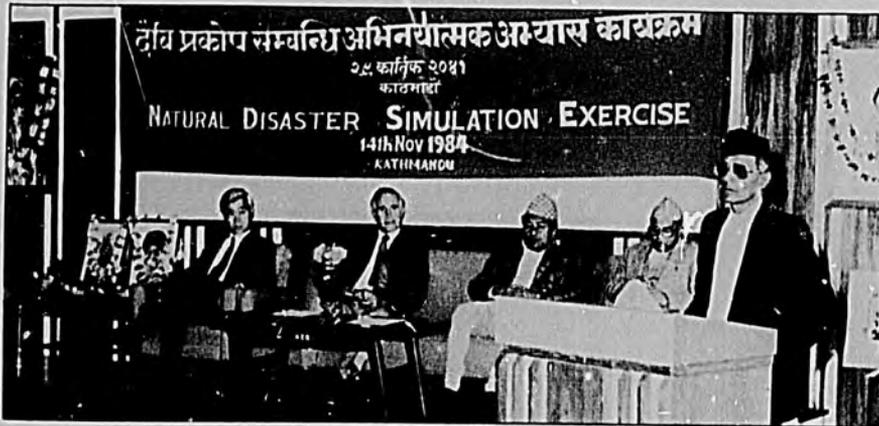
OFDA also helps disaster-prone countries to develop their own emergency plans and disaster preparedness programs. Technical assistance is provided to train country officials to establish national disaster organizations, enact disaster response legislation, and prepare national disaster plans.

Training efforts, which form an important part of OFDA's preparedness program, range from teaching foreign disaster managers new techniques in hazard identification and damage assessment to conducting disaster simulations for local officials and U.S. government personnel in overseas Missions.

For example, officials from the meteorological and agricultural agencies of nine Asian countries recently gathered in Thailand to learn about new computer-assisted techniques to assess climatic data and ways to use the data in monitoring food supplies.

*Fire suppression training.*





*Earthquake simulation in Nepal.*

Another training program sponsored by A.I.D. and the U.S. Department of Agriculture brought together foresters from 20 Spanish-speaking countries for a three-week course in wildfire suppression at the U.S. Fire Service training center in Arizona. Participants were trained in the latest fire-fighting methods using equipment available in their own countries. When they returned home, they were able to share their knowledge with their colleagues using audio-visual materials provided in the course.

Regional conferences are an important way to share information and stimulate dialog between countries with similar problems. OFDA, the League of Red Cross Societies, and several agencies of the United Nations have sponsored cyclone preparedness conferences for the South Asian nations and for countries in the southwest Indian Ocean cyclone belt. Regional preparedness conferences in other parts of the world have fostered cooperation among participants and led to the establishment of permanent disaster organizations.

Because providing disaster assistance is often a joint effort of OFDA, the U.S. Mission in the stricken country, and other Federal agencies, periodic training is necessary to ensure effective coordination among these groups. OFDA has found that one particularly useful training method is the disaster simulation. Participants are presented with a scenario to which they react as they would in real life. A simulation which was conducted in early 1984 involved a hurricane hitting

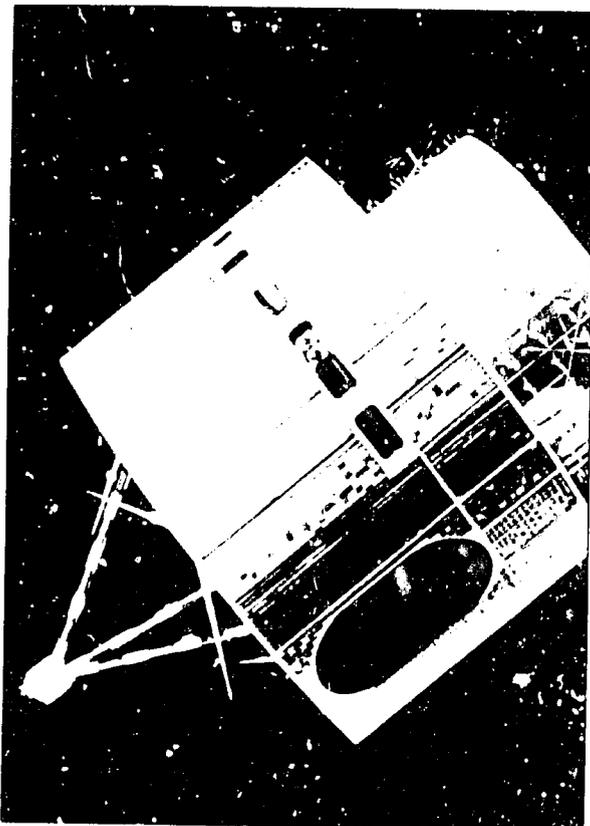
an island in the Caribbean. OFDA staff, Department of Defense personnel responsible for U.S. operations in the Caribbean region, and U.S. Mission and foreign government officials from Caribbean countries participated. Such simulations allow procedures to be tested and problems to be resolved before a real disaster occurs.

### Early Warning

**F**or centuries the weather and its effects have been perceived as "acts of God" over which humans had little or no control. Sophisticated techniques have been developed to monitor weather patterns, however, and the ability to forecast such activity has become an important tool for natural disaster planning and preparedness. Warning of impending severe storms can allow time to alert threatened populations, thereby saving lives and protecting property.

By using technology to monitor potentially destructive natural phenomena, OFDA helps to identify the likelihood of disasters and thereby increase the disaster planning and response capacity in vulnerable countries. For example, during a 20-year period, Bangladesh suffered 28 severe, storm-related disasters, which killed over 390,000 people, seriously affected over 107 million people, and caused more than \$900 million in damage. In order to better prepare for these situations, the Government of Bangladesh requested assistance in improving its tropical cyclone early warning system. OFDA provided a basic cyclone detection and monitoring system in October 1978 and an improved high resolution system in 1981.

Weather satellite.



Unlike severe storms, which can be tracked before they strike land, volcanic eruptions, earthquakes, and tsunamis remain relatively unpredictable. Important information can be gathered about them, however, by seismographs strategically placed along fault zones, tide gauges floating along a coastline, and volcanic monitoring equipment perched on a crater's cone, all of which generate data which aid in understanding the movements of the earth. These technological advances help OFDA in its efforts to inform other countries about potential dangers and to respond rapidly when disasters strike.

Methods are also available to monitor rainfall patterns and identify variations which can indicate drought. OFDA coordinates a number of projects using agroclimatic techniques aimed at forecasting drought-induced food shortages in such areas as the Caribbean Basin, South and Southeast Asia, the South Pacific, and regions of Africa and Latin America. Weather/crop assessment models, historical indices, and crop calendars are all ele-

ments of a systematic early warning program for subsistence farmers operating in over 70 countries in sub-Saharan Africa and the Caribbean. This program has provided significant lead time on drought conditions and potential food shortages around the world.

Not all early warning systems utilize high technology. Nutritional surveillance studies can disclose dramatic increases in cases of malnutrition caused by severe food shortages due to drought, flooding, or crop failure. One such study conducted for OFDA in Mauritania by the U.S. Public Health Service's Centers for Disease Control measured the health of the most vulnerable population group. Weight and arm circumference measurements of young children were sampled in three different target populations to determine if malnutrition was increasing due to the prolonged drought. When compared with world standards and data gathered on previous assessments in these regions, the results confirmed the population's declining nutritional status and prompted the Government of Mauritania to start a food distribution program.

The purpose of this project was to strengthen the Bangladesh government's capacity to obtain and use remote sensing data for disaster alert, environmental monitoring, and agroclimatic analyses. The project provided equipment and training in the operation and maintenance of a meteorological satellite ground receiving station as well as training for government officials responsible for cyclone preparedness in the countryside, and a public education program to increase awareness and insure the system's credibility among the populace.

### Disaster Mitigation

**M**itigation or risk reduction is a new focus of the disaster assistance program, which is aimed at reducing the vulnerability of people and property to natural hazards. Property damage caused by disasters runs into the hundreds of millions of dollars and the long-term economic consequences can be devastating to developing countries. Techniques of risk reduction can also be applied to agriculture, health, and environmental management as well as protection of transportation, power, and communications infrastructure.

A timely mitigation effort was carried out in Indonesia after a disaster occurred. A series of violently explosive eruptions of the Mt. Galunggung Volcano in West Java, Indonesia covered a 15-km area with lava and ash debris. The population in the immediate vicinity was safely evacuated, but fields, houses, ponds, and rivers were blanketed with the ash. As the monsoon season approached, Indonesian officials recognized that lahars – volcanic mudflows caused by accumulated debris and heavy rainfall – would cause the rivers to overflow and flood surrounding fields and homes. Effective mitigation measures included village efforts to clear the river bed, construct dams at four points along the river, and reinforce embankments and building foundations with sandbags filled with debris. This community mitigation effort reduced the damage from the lahars and safeguarded the lives and property of as many as 300,000 people in 210 low-lying villages.

In Popayan, Colombia, property damage caused by a March 1983 earthquake totaled over \$410 million. Over 80% of the town was demolished with schools, hospitals, churches, public buildings and up to 9,000 homes sustaining heavy damage. Older historic neighborhoods and poorer sections suffered considerable damage, as did newer housing units built in the last 30 years but not engineered to seismic standards.

In a coordinated relief and risk reduction effort, the United States sent emergency relief supplies, including tents and blankets. The U.S. also sought to improve local construction techniques so that structures which were rebuilt or repaired would withstand future earthquakes. In a self-help project funded by the U.S. Government and a Colombian group, low-income people were trained in simple techniques that would make their homes more earthquake-resistant. Pictorial training materials were developed for the participants and four model houses were constructed, while community leaders took courses in earthquake-resistant building methods. By helping stricken communities to help themselves, mitigation projects can provide benefits long after emergency needs have been met.

*Seismic monitoring equipment in Fiji.*

## Disasters and the Development Process

**B**ecause disasters constitute a serious impediment to economic and social progress, alleviation of their effects through preparedness, early warning, and mitigation is a valuable contribution to a country's development. Disaster planning in the broadest sense involves many of the fundamental sectors of a society: health, housing, agriculture, education, communications, and transportation. In directing attention to these important areas, disaster planning based on analysis of hazards is addressing basic development issues. A.I.D. will continue its efforts to focus attention on the critical link between disasters and development.

During the past twenty years, the United States Government has provided assistance to millions of victims of disasters around the globe through its Office of Foreign Disaster Assistance. Over the years, approaches to disaster relief have been evaluated and modified. As OFDA looks to the future, the goal of saving lives remains in the forefront as new long-term solutions are sought to the problems caused by the natural and man-made events we call disasters.



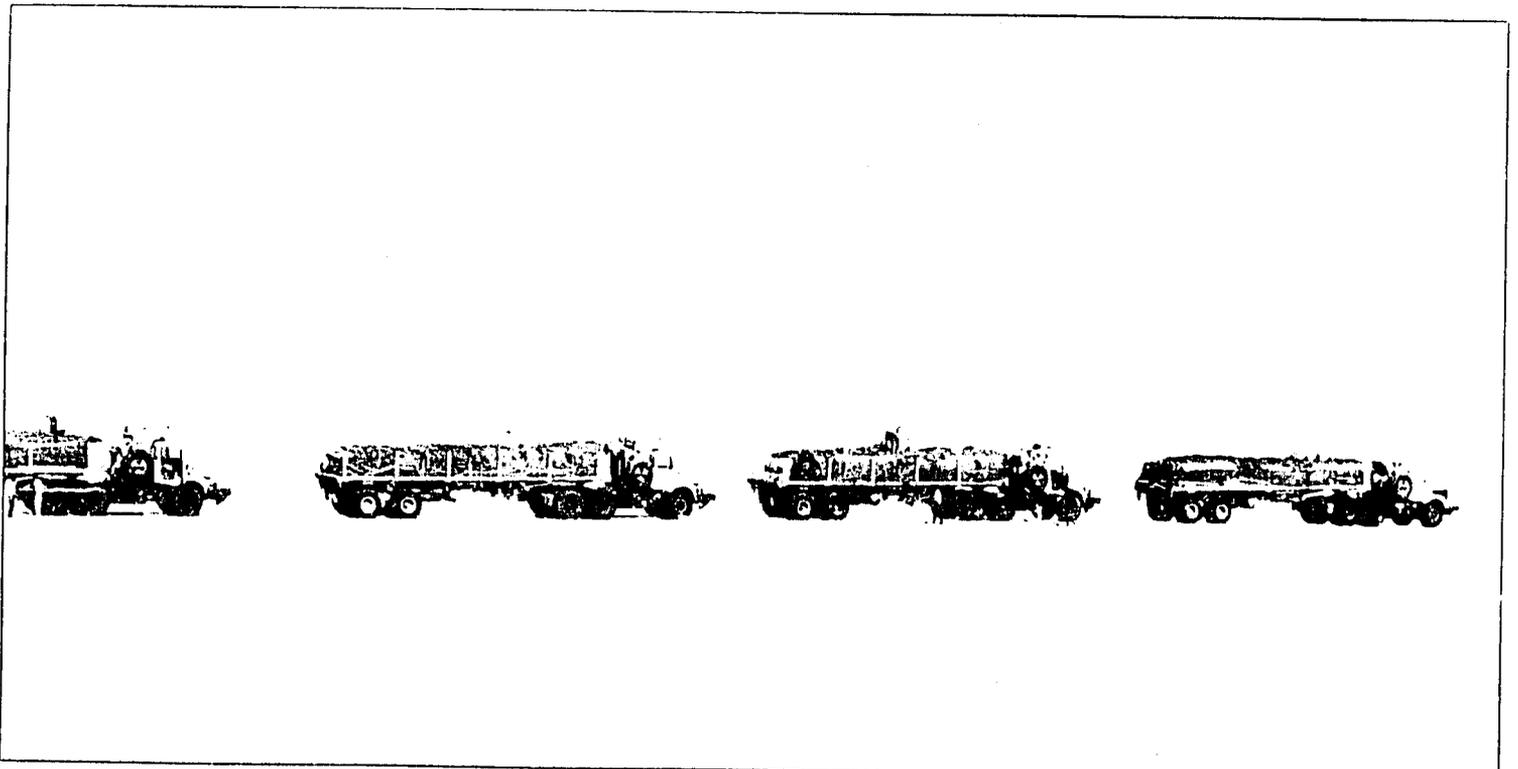
# Disaster Relief in FY 1984

**W**ith the growing crisis in Africa, much of OFDA's disaster relief was directed toward that continent in FY 1984. Of the 41 declared disasters worldwide, affecting 33 countries, nearly half were in Africa. Drought or food shortage disasters were declared in ten African nations where an estimated 25 million people were affected by adverse weather and poor harvests. Two other African nations — Ethiopia and South Africa — continued to receive OFDA assistance in FY 1984 for drought disasters declared the previous fiscal year.

While the African drought was a matter of continuing concern, OFDA responded with prompt assistance in many other emergency situations occurring around the globe. Two typhoons and a volcanic eruption devastated sections of the Philippines, leaving thousands homeless, crops and livestock destroyed, and power and communications badly damaged. A powerful earthquake in eastern Turkey flattened several villages and took the lives of over 1,300 people. Destructive cyclones in Madagascar, Mozambique, Swaziland, and South Africa, and an earthquake in Guinea, added to the suffering of the beleaguered African people. After drought, floods with nine incidences, and cyclones with eight, were the most prevalent disaster types in FY 1984.

In performing its disaster relief function, OFDA provided both material and technical assistance and coordinated disaster services donated through other USC offices. Relief supplies, such as tents, blankets, plastic sheeting and water containers, were airlifted to stricken countries from five USG-maintained stockpiles around the globe. OFDA also provided funds for the local purchase of relief items and dispatched disaster specialists to help assess relief requirements and coordinate the U.S. response.

In the case of the African drought disasters, the bulk of U.S. Government assistance was in the form of P.L. 480 Title II food commodities provided by the Office of Food for Peace. However, taking advantage of its quick response capability, OFDA funded the cost of food and water assessments in several countries, purchased life-saving medicines and other relief supplies, and facilitated food transport and storage by providing grants to governments and private voluntary agencies engaged in ongoing feeding programs.



### Special Appropriation for Inland Transport

**T**oward the end of August 1984, Congress appropriated \$16 million to help overcome the severe logistical problems existing in many of the drought-stricken African countries. OFDA was given responsibility for obligating these funds for inland transport of emergency food by the end of the fiscal year. A small working group in CFDA consulted with representatives of the Africa Bureau and Food for Peace, as well as voluntary agencies and others in the field, to determine how the allocations should be made. Based on the group's recommendations, OFDA obligated the entire \$16 million within the time mandated, providing grants to voluntary agencies or directly to governments in the following African nations:

Burundi — \$79,164  
 Ethiopia — \$3,177,293  
 Kenya — \$2,954,237  
 Mali — \$350,000  
 Mauritania — \$1,445,656  
 Mozambique — \$1,010,800  
 Niger — \$1,780,000  
 Rwanda — \$1,000,000  
 Senegal — \$1,250,000  
 Tanzania — \$1,000,000  
 Zaire — \$1,000,000  
 Zimbabwe — \$952,850

### Disasters Carried Over from Previous Years

**O**FDA also obligated funds to provide assistance to countries with ongoing disasters declared in previous fiscal years or to replace stockpile items.

The following disasters were carried over from previous years:

Argentina — Floods (FY 1983) — \$99,341 (replacement of 5,000 wool blankets and 284 rolls of plastic to stockpiles).  
 Brazil — Drought (FY 1983) — \$132,500 (grant to Brazilian Red Cross and PASA with USGS).  
 Ecuador — Floods (FY 1983) — \$122,560 (rehabilitation of water purification units and a grant to CRS).  
 El Salvador — Displaced Persons (FY 1982) — \$548,064 (purchase of oral rehydration salts and grant to Project HOPE).

Ethiopia — Drought (FY 1983) — \$2,534,885 (grants to CRS, CWS, LWR, and UNICEF for emergency programs).

Paraguay — Floods (FY 1983) — \$44,840 (replacement of 160 rolls of plastic to stockpiles).

Peru — Floods (FY 1983) — \$493 (spare parts for sewer cleaning equipment).

South Africa — Drought (FY 1983) — \$450,000 (grants to Operation Hunger and the South African Red Cross to support feeding programs and to World Vision International for a long-term water conservation project).

Sri Lanka — Civil Strife (FY 1983) — \$374,945 (replacement of 1,000 tents/flys and 500 rolls of plastic sheeting to stockpiles).

Uganda — Displaced Persons (FY 1983) — \$150,000 (local purchase of hoes and pangas).

Because of the large number of declared disasters in FY 1984, obligations for disaster relief exceeded appropriated levels in the International Disaster Assistance (IDA) account. In responding to the following disasters, OFDA administered funds from another A.I.D. account in the amounts indicated.

Ethiopia — Drought (FY 83) — \$1,000,000  
 Mali — Drought — \$25,000  
 Mauritania — Floods — \$25,000  
 Mozambique — Drought — \$130,000  
 Niger — Drought — \$22,469  
 Philippines — Typhoon — \$2,049,500  
 Philippines — Volcano — \$50,358  
 Turkey — Earthquake — \$174,396

Please note: In the disaster case reports which follow, the listings of assistance provided by 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 dollar value of in-kind contributions. As a result, the total dollar values indicated in these sections should be taken as representative figures.

**Acronyms Used in This Report**

ADRA	Adventist Development Relief Agency
CARE	Cooperation for American Relief Everywhere
CDC	Centers for Disease Control, U.S. Department of Health and Human Services
CRS	Catholic Relief Services
CWS	Church World Service
EEC	European Economic Community
FAO	United Nations Food and Agriculture Organization
FED	European Development Fund
FFP	Food for Peace, USAID
FFW	Food for Work
ICRS	International Committee of the Red Cross
LORCS	League of Red Cross Societies
LWF	Lutheran World Federation
LWR	Lutheran World Relief
OPEC	Organization of Petroleum Exporting Countries
PAHO	Pan American Health Organization
PVO	Private Voluntary Agency
UNDP	United Nations Development Program
UNDRO	Office of U.N. Disaster Relief Coordinator
UNHCR	Office of U.N. High Commissioner for Refugees
UNICEF	United Nations International Children's Fund
USG	United States Government
USGS	United States Geological Survey
WCC	World Council of Churches
WFP	World Food Program
WHO	World Health Organization

# Africa



Botswana – Drought	10	Mauritius – Cyclone	35
Burkina Faso – Drought and Food Shortage	12	Mozambique – Cyclone	36
Burkina Faso – Meningitis Epidemic	14	Mozambique – Drought	39
Djibouti – Drought	15	Niger – Drought	46
Ghana – Food Shortage	16	Sao Tome and Principe – Drought and Food Shortage	51
Guinea – Earthquake	20	Senegal – Drought	52
Madagascar – Cyclones	23	South Africa – Cyclone	54
Mali – Drought	27	Swaziland – Cyclone	55
Mauritania – Drought and Food Shortage	30		
Mauritania – Floods	34		

**Drought****Botswana**

**Date**  
1983-1984

**Location**  
Countrywide, especially in the east

**No. Dead**  
Not reported

**No. Affected**  
Entire population, approximately 1,037,300

**Damage**  
Increase in malnutrition; loss of crops and livestock

**The Disaster**

Botswana has suffered three consecutive years of drought, and 1984 was predicted to be the worst in the country's recent history. In the eastern region, where most crop production and cattle raising occurs, rainfall was from 25% to 60% below normal in 1983 and early 1984. January was exceptionally dry with only 33 mm compared to the usual 100 mm of rainfall. The shortage caused village boreholes and many rivers to dry up and crops planted earlier to wither and die.

The three years of drought have significantly reduced the number of farm households which plant and harvest crops. The 1984 harvest of the two principal crops, sorghum and maize, contributed less than 5% of the country's cereal needs. Botswana normally imports from 50% to 70% of its staple grain but it was estimated that the country would need to import at least 95% in 1984. The cattle industry also suffered from the drought, as livestock deaths and malnutrition increased. About a third of the 2.85 million livestock were seriously affected, including cattle used as draft animals for planting and ploughing.

A government survey identified 31% of the children as nutritionally at risk and approximately 2,000 children severely malnourished.

**Action Taken by the Government of Botswana (GOB)**

The president of Botswana officially declared the country in an emergency drought situation on February 27, and a month later the GOB made a general appeal for international assistance. In its appeal, the GOB requested help with its drought relief program and specified assistance requiring approximately \$45 million.

Various government agencies were actively involved in the relief efforts. An Inter-Ministerial Drought Committee (IDC), activated in 1982, coordinated emergency feeding programs through its Food and Nutrition Committee. The GOB's drought relief program also included an enlarged public works and cash-for-work program established to provide income for rural people as compensation for losses resulting from the drought. It employed approximately 25,000 persons, and an additional 7,000 women worked in a "hand stamping" program using mortars and pestles to pound WFP and GOB-purchased sorghum into flour.

To restore the agricultural sector to its previous level of performance, the GOB distributed free seeds, granted subsidies to encourage increased cultivation, and constructed urgently needed village water supply systems.

Local cash donations were given by Yasier Motors, Marapula School, and the Lutheran Church Kanye (\$2,520).



**Assistance Provided by the United States Government**

On April 18, 1984, in response to the GOB's appeal for assistance, the U.S. Ambassador used his disaster assistance authority to obligate \$25,000 for priority projects within the GOB's drought relief program.

In May, the USG approved a bilateral grant of 3,000 MT of P.L. 480 Title II vegetable oil for distribution through Botswana's Food Relief Program. As the drought continued and more food arrived, storage and transportation needs increased. To help defray the associated costs, the USG approved a donation of 6,000 MT of Title II whole corn to be monetized, with the proceeds to be used for construction of new depots and for transport needs. Of the above amounts, 2,000 MT of vegoil and 3,000 MT of corn were delivered in FY 84. The cost of the commodities was \$2,428,800; additional costs for ocean freight and inland transport to rail depots amounted to \$825,000. The remaining 4,000 MT was committed for FY 85 and is valued at \$1,416,700 with ocean freight costs at \$600,000.

The U.S. Peace Corps provided six volunteers for a labor-based relief project.

Total OFDA assistance . . . . .	\$25,000
Total Food for Peace assistance (FY 84) .	\$3,253,800
Total USG assistance (FY 84) . . . . .	\$3,278,800
Total Food for Peace assistance (FY 85) .	\$2,016,700
<b>TOTAL</b>	<b>\$5,295,500</b>

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**TOTAL \$3,733,502**

**Assistance Provided by the International Community**

**International Organizations**

EEC — pledge of 4,100 MT of maize and 480 MT of dry skim milk for 1985.

FAO — \$229,100 for seed purchase and storage, stock feed supply, and a food management advisor for the GOB's Food Resources Department (FRD).

The UNDP provided \$963,000 for food storage, seed production and fodder seeds, a food logistics officer for the FRD, emergency village water supplies, and plastic covers for stockfeed.

UNICEF — \$25,400 for a nutritional surveillance project and \$30,500 for cooking equipment for schools and clinics

WFP — \$10,200 for training food storage personnel and a pledge of 14,120 MT of sorghum, 880 MT of cornmeal, 24,245 of instant corn-soya milk, 4,660 MT of beans, 4,330 MT of vegoil, and 860 MT of dry skim milk for 1985.

**Governments**

Australia — grant of \$170,502 for humanitarian assistance to drought victims.

Canada — pledge of 5,000 MT of beans and 100 MT of dry skim milk for 1985.

Germany, Fed. Rep. — \$576,000 for seeds for the Molapo Development Project, \$430,000 for additional seed purchase, and a pledge of 2,680 MT of wheat flour for 1985.

Sweden — \$900,000 for water equipment.

United Kingdom — \$117,000 for seed purchase and transport; twelve trailers for mobile clinics and twenty diesel engines for boreholes, value not reported.

**Voluntary Agencies and Other Groups**

Barclays/Standard/Bank of Credit and Commerce — \$13,200 for general relief.

China, Peoples Rep., Red Cross — \$8,000 for general relief.

Lutheran World Federation — \$260,600 for food storage facilities.

**Drought****Burkina Faso****Date**

December 1983

**Location**

Entire country, particularly in Sahelian regions

**No. Dead**

Not available

**No. Affected**

Not available

*(Note: At the time of this disaster, Burkina Faso was known as Upper Volta.)*

**The Disaster**

By December 1983, it was apparent that there was a serious food deficit in Upper Volta. The Government reported that the cereal deficit amounted to 118,000 MT, while in January 1984, USAID determined that the situation was rapidly deteriorating and put the food deficit at an alarming 188,000 MT. Several factors contributed to the food shortage: first, the rainy season started late in most of the country. Second, there were dry spells during the middle of the rainy season which were particularly damaging to the maize crop, usually 10% of total cereal production. Finally, the rainy season ended early, in many areas during the flowering stage of crop growth, and this resulted in below average yields.

The lack of adequate rainfall caused other serious problems besides crop deficits. Many areas reported inadequate surface water supplies for both people and herds and the nomadic population was forced to migrate farther south to find enough water and forage.

**Action Taken by the Government of Upper Volta (GOUV)**

On November 11, the GOUV formed the Revolutionary Solidarity Fund to receive contributions from civil servants and other people to assist those affected by the drought. In mid-December the

GOUV decided to buy cereal (which eventually amounted to about 7,000 MT) with money collected by the fund. The GOUV also requested emergency food assistance from the WFP, the U.S., and other donor countries. When food aid began to arrive, the GOUV National Cereal Board (OFNACER) distributed it (including the U.S.-donated 15,000 MT) to the food deficit regions.

**Assistance Provided by the United States Government**

On January 9, Ambassador Walker determined that the food deficit in Upper Volta constituted a disaster and he then divided his disaster assistance authority funds into two grants of \$12,500 each for Save the Children Fund and the Centre International de Developpement et Recherche (a French PVO which works with village groups). Each grant was used to purchase 50 MT of grain on the local market for distribution to village groups and cereal banks.

OFDA sent two food supply experts to assess the country's food needs and review the capability of CRS to expand its regular feeding program to meet the emergency requirements. The cost of the team totaled \$12,602.

The U.S. donated 15,000 MT of P.L. 480 Title II red sorghum to the GOUV for a government-to-government emergency program. The food was valued at \$2,146,200 and freight costs came to \$2,903,000.

P.L. 480 Title II commodities were provided to CRS for an emergency feeding program consisting of 7,505 MT of cornmeal and 772.5 MT of vegetable oil. The commodity cost was \$2,622,500 and the freight cost totaled \$1,691,900. OFDA agreed to finance the inland transport of 4,000 MT (the transport of the other 4,277.5 MT was paid for with local currencies generated through the sale of the 15,000 MT donated to the GOUV). OFDA funds were also used to pay food storage costs. Total OFDA support of the CRS emergency feeding program was \$108,500.

Total OFDA funds	\$146,102
Total Food for Peace funds	\$9,363,600
<b>TOTAL</b>	<b>\$9,509,702</b>

**Assistance Provided by U.S. Voluntary Agencies**

CRS — with funds provided by USAID, CRS expanded its regular maternal-child health and food-for-work programs to operate an emergency feeding program for five months.

Save the Children Fund — used a grant from the USG to distribute 50 MT of grain.

**Assistance Provided by the International Community****International Organizations**

EEC — 6,000 MT of food.

Fund for Economic Development — 6,400 MT of cereal

WFP — 50,000 MT of food

**Governments**

Belgium — 1,500 MT of grain.

Canada — 3,000 MT of cereal.

France — 8,000 MT of cereal.

Germany, Fed. Rep. of — 4,000 MT of cereal.

Japan — 1,000 MT of rice.

Kuwait — 1,085 MT of rice.

Netherlands — 3,700 MT wheat.

**Voluntary Agencies**

Centre International de Developpement et Recherche — used a grant from the USG to expand its regular program to distribute 50 MT of emergency food aid.



**Meningitis  
Epidemic****Burkina Faso****Date**

February-April 1984

**Location**

Much of the country, including the towns of Kaya, Kougoussi, Ouagadougou, Ouahigouya, Dedougou, Zabre, and Dori

**No. Dead**

Unknown

**No. Affected**

More than 1,000

*(Note: At the time of this disaster, Burkina Faso was known as Upper Volta.)*

**The Disaster**

Outbreaks of cerebro-spinal meningitis are endemic to Burkina Faso and often occur in the months preceding the rainy season. A vaccination program was carried out in 1981 and children entering school are periodically vaccinated. Despite these measures, the 1984 outbreak became an epidemic. A study by the U.S. Centers for Disease Control (CDC) indicated that a significant number of unvaccinated individuals had entered Ouagadougou since the 1981 epidemic. In March, the CDC Meningitis Research Team reported an overall incidence of at least 140 cases of the disease per 100,000 people in Ouagadougou and a 240 per 100,000 incidence among the highest risk group (ages 1-19).

**Action Taken by the Government of Upper Volta (GOUV)**

On March 9, the GOUV asked the United States to provide one million doses of meningitis vaccine, as well as funds for 10,000 liters of fuel to conduct an emergency vaccination program in Ouagadougou and other parts of the country. Additional vaccine was requested from UNICEF and Save the Children/UK. When the medicine arrived, the GOUV Ministry of Health conducted the vaccination program in Ouagadougou.

**Assistance Provided by the United States Government**

After Ambassador Walker received the request for the vaccine and fuel from the GOUV on March 9, he asked that the CDC Meningitis Research Team conduct an assessment to determine the appropri-

ate level of response. Within several weeks, the CDC team recommended that the GOUV vaccination program be aimed only toward persons at high risk (those aged 1-19) in Ouagadougou who had not yet been vaccinated. The Ambassador endorsed this recommendation, and on March 21, he invoked his disaster assistance authority of \$25,000 and asked OFDA to procure and transport by air 175,000 doses of bivalent meningitis polysaccharide vaccine. OFDA obtained 145,000 doses of vaccine, which arrived in Upper Volta's capital on March 26. The remaining 30,000 doses were provided by the WHO office in Mauritania.

**TOTAL \$20,706**

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community**

WHO — 30,000 doses of meningitis vaccine, value not reported.

**Drought****Djibouti****Date**

1983-1984

**Location**

Dikhil, Ali-Sabieh, Jadjourah, Obock, and Djibouti

**No. Dead**

Not reported

**No. Affected**

80,000 (30% of the population); 12,000 severely affected

**Damage**

Lack of rain in the spring of 1984 caused wells to dry up and grazing pasture to disappear. It also resulted in extensive slaughtering of herds.

**The Disaster**

Though lack of rainfall leading to drought and food shortage is a cyclical problem in Djibouti, the country is ill-equipped to handle such situations; this drought followed closely on the heels of the 1980-81 dry spell and decimated the livestock population. The nomads, who rely upon their flocks, grouped around the few remaining wells, but grazing land had become practically nonexistent. By late March, much of the nomadic population required public assistance.

**Action Taken by the Government of the Republic of Djibouti (GROD)**

The GROD's disaster and refugee assistance agency, ONARS, coordinated and implemented the country's relief effort. Specifically, ONARS distributed food and other relief supplies, appointed GROD relief coordinators in all five districts, and participated in a drought assessment.

The GROD established a drought assistance fund of \$283,000 and made an appeal to the international community on April 9, 1984.

**Assistance Provided by the United States Government**

On April 12, 1984, Ambassador Alvin Adams declared the situation in Djibouti to be a disaster and obligated \$25,000 for the relief effort. This money was used to purchase a 6,000-liter water truck. In addition, the USG donated 34 MT of vegetable oil to CRS for the emergency. The food had a value of \$33,500 and ocean freight costs were \$6,000.

Total OFDA assistance . . . . .	\$25,000
Total Food for Peace assistance . . . . .	\$33,500
<b>TOTAL</b>	<b>\$64,500</b>

**Assistance Provided by U.S. Voluntary Agencies**

CRS — donated 61 MT of rice, 10.5 MT of vegetable oil, and some non-fat dried milk, worth \$125,000, from its regular P.L. 480 Title II program.

**TOTAL \$125,000**

**Assistance Provided by the International Community****International Organizations**

EEC — \$212,500 in cash and 100 MT of non-fat dried milk, value not reported.

Palestine Liberation Organization — tents, value not reported.

UNDP — provided \$1,800,000.

UNICEF — \$30,000 for water storage bags.

WFP — 260 MT of rice or sorghum, 217 MT of vegetable oil, and 347 MT of non-fat dried milk, worth \$1,700,000.

**Governments**

France — 1,000 MT of wheat, value not reported.

Libya — 50 MT of sorghum, value not reported.

**TOTAL \$3,742,500**

**Food Shortage****Ghana****Date**

1982-1984; declared  
October 19, 1983

**Location**

Countrywide, but Upper and Northern Regions, southern Brong Ahafo, and northern Ashanti (the traditional breadbasket of Ghana) were the most affected

**No. Dead**

Hundreds, mainly children

**No. Affected**

Entire population of approximately 12.5 million; about 1.5 million suffered from malnutrition, anemia, and kwashiorkor

**Damage**

Major crop losses due to drought and fires caused a scarcity of food which in turn led to higher food prices and increased incidences of malnutrition.

**The Disaster**

The food shortage in Ghana resulted from a combination of events, some natural and some human in origin, which occurred over a two-year period. Starting in 1982 and continuing until the end of 1983, rainfall in all the major food producing areas was late and erratic, and its sudden cessation in July in the Ashanti, Brong-Ahafo, and Eastern Regions and in September in Northern and Upper Regions severely reduced the output of maize and other cereals. Widespread maize virus disease and a lack of fertilizer and other agricultural inputs further reduced yields of food grains.

Very dry conditions caused by the prolonged drought, coupled with an extended harmattan (dry wind from the Sahara), contributed to the spread of bush fires, especially in the northern third of the country. These fires damaged both stored and standing crops. In some regions, up to 35% of total food production was destroyed by fires. In addition to the major cereal crops, traditional subsistence crops such as cassava, yams, and plantains as well as cash crops such as cocoa and timber were seriously affected. The net effect of these catastrophes was to reduce both food availability and foreign exchange earnings, which are used for food imports.

Another factor contributing to the food shortage was the return in early 1983 of several hundred thousand Ghanaians from Nigeria (see *OFDA Annual Report FY 1983, West Africa — Expelled Persons*). Estimates of the total number of returnees, mainly young men, ranged from 600,000 to over one million. This influx significantly increased demand for food at a time when production was dramatically reduced.

The food shortage resulted in spiraling food prices, which rendered even staple commodities unobtainable for many people, and increasing incidences of malnutrition, anemia, and kwashiorkor, particularly among children. Schools were closed for lack of food and hospitals refused to accept patients unless their relatives could provide food.

**Action Taken by the Government of Ghana (GOG)**

The GOG, recognizing that the growing disaster would require outside assistance, sought help in mid-1983 from the international community. The GOG also moved quickly to solve problems such as pilferage at the ports and lack of fuel. These efforts were led by the National Mobilization Committee (NMC), which had primary respon-



sibility for food relief. (This organization grew out of the Repatriation Task Force, which was formed in early 1983 to resettle Ghanaians expelled from Nigeria.) The NMC played a crucial role in mobilizing GOG resources, reducing commodity losses, and allocating fuel on a priority basis for food donors' vehicles.

The GOG publicized the seriousness of the food shortage, giving daily media attention to food and agricultural imports, back-to-the-land movements, and incentives for gardening and increased food production. During the latter half of 1983 and the first quarter of 1984, more than 147,000 MT of food were imported by the GOG. Most of the food was allocated to GOG institutions and agencies for release into the market at a subsidized cost. A small portion was distributed free of charge.

The NMC also distributed 27,040 MT of maize, wheat, fish, cheese, dried skimmed milk, and corn soya milk provided through WFP. Transport was hired from the State Transport Corporation and private truckers and distribution was carried out through maternal-child health clinics either directly or through local voluntary agencies. The operation was financed in part by the GOG; however, due to fiscal constraints, donors arranged for the sale of some commodities with the proceeds going to defray GOG transport and administrative costs.

The NMC held periodic meetings with international donors to coordinate the relief effort and thereby avoid duplication of assistance and minimize port congestion. Such meetings allowed the GOG to identify and fill unmet needs in assistance and also to respond to donors' requests for GOG support in areas such as fuel allocation, port clearance, and food aid security.

### Assistance Provided by the United States Government

In response to the deteriorating food supply situation, the U.S. Ambassador on October 19, 1984, issued a disaster declaration and authorized \$25,000 for the rehabilitation of 17 Hyster forklifts belonging to the Ghana Cargo Handling Co. The forklifts were then made available on a priority basis to unload emergency food.

Shortly after the disaster declaration, OFDA dispatched a two-man team to Ghana to assess the situation and review the feasibility of CRS and ADRA proposals to finance emergency relief. The cost of the assessment, including travel and per diem, totaled \$26,213.

A grant of \$999,427 was made to CRS for a nutrition and general assistance program to be implemented through its ongoing Title II program. Elements of the program included: 1) provision of medicines and medical supplies to counter the effects of malnutrition among children; 2) provision of agricultural tools to farmers; 3) expansion of CRS' administrative, supervisory, and logistical capacities to ensure a steady flow of food inland from ports; 4) operation of warehousing sufficient to handle the food assistance; 5) establishment of a communications system to facilitate the movement of food; and 6) provision of tires, spare parts, and tarpaulins as incentives to truck operators (see below for P.L. 480 Title II commodities provided through the CRS emergency program).

The Adventist Development and Relief Agency received a grant of \$559,931 from OFDA to conduct an emergency feeding program using 6,000 MT of Title II food. Through its network of local centers, ADRA distributed monthly rations consisting of six kg of bulgar, two kg of milk, and one kg of vegetable oil to approximately 100,000 needy people. Priority was given to families with children under five years of age, pregnant and lactating women, the elderly, and families not benefiting from other feeding programs.

OFDA funded contracts totaling \$33,349 for a food aid manager and a food monitor to assist the USAID Mission in implementing and supervising the emergency program. They oversaw the unloading of food at the ports, visited distribution centers to monitor program administration, and worked with the GOG to coordinate the international response.

*Ambassador Robert Fritts formally presenting U.S. relief assistance to head of Ghanaian disaster organization*

An engineer provided through the WASH project at a cost of \$7,711 spent three weeks in Ghana assessing the water shortage. The supply, which is normally poor, was further depleted by the drought; he subsequently made a series of recommendations for short term emergency actions and longer term improvement projects.

As a result of the water engineer's assessment, OFDA funded the transport costs (\$40,000) of well drilling equipment from Baltimore, Maryland to Tema for a water project in Wenchi District, Brong-Ahafo Region, sponsored by a Catholic mission. The goal of the project is to provide good drinking water in 75 villages in Wenchi District. Three Peace Corps Volunteers are serving on the project, one as advisor and two on the drilling team. The equipment, including drills, water pumps, vehicles, and spare parts worth \$550,000, was purchased with private funds in the U.S. and Europe (see below, *Assistance Provided by U.S. Voluntary Agencies*).

In response to a GOG request for rice seed (the 1983 crop suffered a 95% loss), USAID/Accra arranged for the purchase of 160 MT of rice seed from the Philippines. Of the 160 MT, 120 MT was purchased and transported with USAID/Accra project funds (\$55,800 for the rice seed and \$330,000 for air freight) with the remainder funded by UNDP (see *Assistance Provided by the International Community*). The rice seed was distributed by the Ghana Feed Company, a USAID project, to farmers in northern Ghana.

A total of 31,478 MT of PL 480 Title II commodities were provided by Food for Peace for direct distribution by CRS and ADRA. CRS received 25,478 MT valued at \$9,436,100 plus freight costs of \$2,944,500; ADRA received 6,000 MT of Evulgar, non-fat dried milk, and vegetable oil valued at \$2,074,300 plus shipping costs of \$800,000. An other 5,646 MT of non-fat dried milk and rice (\$3,640,000) was provided by the USG for sale by the GOG to generate local currency to help cover internal transport costs of the CRS and ADRA programs.

The USG also contributed 2,160 MT of PL 480 commodities valued at \$509,800 for distribution through WFP. Ocean freight came to \$162,500 bringing the total cost to \$672,300.

### Summary of USG Assistance

Ambassador's authority . . . . .	\$25,000
Food shortage assessment . . . . .	\$26,213
Grant to CRS . . . . .	\$999,427
Grant to ADRA . . . . .	\$559,931
Food aid monitors . . . . .	\$33,349
WASH project water engineer . . . . .	\$7,711
Transport of well drilling equipment . . . . .	\$40,000
Total OFDA Assistance . . . . .	\$1,691,631
Purchase and transport of rice seed . . . . .	\$385,800
PL 480 Title II commodities . . . . .	\$19,557,200
<b>TOTAL</b>	<b>\$21,634,631</b>

### Assistance Provided by U.S. Voluntary Agencies

ADRA -- conducted an emergency feeding program funded by the USG. Utilized existing staff and a network of distribution centers to implement the program; value of expended ADRA resources unknown.

CARE -- funded two transportation systems experts for the FAO multidonor assessment mission; provided two logisticians on detail through FAO to help the GOG National Mobilization Committee with port and inland transport operations.

CRS -- with funding provided by the USG, increased its regular Title II program by 40% to meet the food crisis. CRS used its long established management system and operational agreements with GOG agencies to accommodate the expanded program.

Divine Word Missionaries -- with \$550,000 provided through private donations in Ghana, Great Britain, the Netherlands, the Philippines, Scotland, the U.S. and West Germany, purchased well drilling equipment for the Wenchi water project.

**TOTAL**      **\$550,000**



U.S. relief commodities arriving at port.

### Assistance Provided by the International Community

#### International Organizations

EEC — donated 9,500 MT of rice, 2,500 MT of butteroil, and 1,000 MT of dried skim milk as well as an unspecified amount of seeds and medicines; total value of \$2,125,000. Also provided \$1.65 million to fund internal road transportation costs incurred by various food aid donors.

FAO — funded a multidonor mission to assess the food supply situation.

UNDP — in conjunction with USAID/Accra, funded purchase and transport of 40 MT of rice seed from Manila at a total cost of \$128,600.

WCC — contributed an unspecified amount of rice through WFP.

WFP — contributed 10,800 MT of maize, 10,000 MT of wheat, 1,080 MT of dried skim milk, 1,080 MT of fish and cheese, and 1,080 MT of corn-soy milk for free distribution to women and children under age five; 13,000 MT of wheat for Upper and Northern Regions; and 10,000 MT of wheat were donated for sale, with the proceeds used to cover internal transport costs; total value of \$14 million. The Resident Representative headed the multidonor food assistance coordinating group.

#### Governments

Australia — 5,000 MT of rice and 8,500 MT of wheat, value not reported.

Canada — provided 15,000 MT of wheat and two food monitors, value not reported.

Denmark — 3,500 MT of wheat, value not reported.

Germany, Fed. Rep. — 4,000 MT of sorghum grains, value not reported.

Japan — 6,000 MT of rice, valued not reported.

Netherlands — 800 MT of rice, value not reported.

Spain — 2,500 MT of wheat, value not reported.

Switzerland — provided a balance of payments support grant of \$6.3 million to rehabilitate 50 trucks and maintain for 18 months the State Transport Corporations' fleet of 90 trucks.

United Kingdom — 12,000 MT of maize and 5,000 MT of sorghum through WFP, value not reported.

#### Voluntary Agencies

Consortium consisting of Caritas, the Salvation Army, the Sudan Interior Mission, and WCC — 16,000 MT of food grains, value unknown.

TOTAL \$24,203,600

**Earthquake****Guinea****Date**

December 22, 1983

**Location**

Northwest Guinea, including the departments of Gaoual, Mamou, Kindia, and Labe

**No. Dead**

275

**No. Affected**

20,000 homeless, 1,436 injured

**Damage**

Sixteen villages destroyed, considerable material damage and loss of livestock

**The Disaster**

A strong earthquake, registering 6.3 on the Richter scale, shook the Fouba-Djallon Massif region in northwestern Guinea the night of December 21-22. A second quake occurred on December 24 in the town of Koumbia and the surrounding area. The affected area is a high plateau region of cold winds and freezing temperatures. Many people were left homeless and in a state of panic, as tremors, lasting from 5 to 10 seconds, continued for several days after the initial shocks. Hundreds of masonry buildings and thousands of huts were destroyed. Until tents and blankets reached the victims, they slept in the open buffeted by icy winds in temperatures of 2°C.

**Action Taken by the Government of Guinea (GOG)**

Immediately following the earthquake, a 24-hour national mourning period was declared. President Sekou Toure also announced that a government team composed of seven ministers, including those of Social Welfare, Interior and Security, Public Health, and Internal Commerce, would visit Gaoual to assess emergency needs. Following this evaluation, on December 23, the GOG launched an international appeal and requested that UNDRO coordinate emergency relief. Another delegation, including the president and representatives from UNDRO and LORCS, visited the disaster site by helicopter on December 28. By that time, medical supplies, tents, blankets, and food had arrived in Conakry from numerous countries and international organizations, and the GOG and foreign relief teams collaborated to meet all immediate emergency needs. The slightly injured were treated in eight 50-person tents, while the seriously injured transferred to a regional hospital.

By December 30, most emergency needs had been met, and donors focused on medium-term rehabilitation needs such as construction materials, transport, and tank trucks for fuel. Also, due to the limited capacity of the Conakry airport to receive and forward donations, UNDRO recommended that donations be given in cash rather than in kind.

**Assistance Provided by the United States Government**

Based on reports received from the earthquake site and an appeal for international assistance from the GOG, the U.S. Ambassador declared on December 24 that a disaster existed and obligated his disaster assistance authority of \$25,000 for local relief expenses. Of this amount, \$10,000 was contributed to UNDRO to purchase diesel fuel to help move supplies to the stricken area. The remaining \$15,000 was used to purchase food in Dakar and fuel for local transport.

OFDA authorized \$30,000 for the purchase and transport of emergency food from Dakar. Five tons of sweetened condensed milk, four tons of sugar, three tons of corned beef, four tons of peanut oil, and two tons of dried milk were airlifted to Conakry from Dakar in four trips. A C-130 aircraft was chartered in Niamey for this purpose. (Of the \$30,000, \$17,775 was spent on transportation costs.)



*Earthquake damage to Guinean village*

In response to the U.S. Ambassador's request for technical assistance, OFDA contracted two seismic experts from the USGS in January. With the assistance of GOG geologists, they conducted a geologic and seismic examination of the Koumbia earthquake zone. A civil engineer from USAID/Abidjan studied the damaged buildings in order to recommend earthquake-resistant methods for rebuilding. Subsequently, the team presented their findings to a group of 30 GOG technicians and the National Scientific Council. An additional \$5,000 was obligated in January for local support of the USGS team, and the original contract amount of \$21,100 was increased by \$8,000 in April.

In June, OFDA granted \$90,000 to the GOG for the rehabilitation of housing damaged during the earthquake.

#### Summary of USG Assistance

Ambassador's authority . . . . .	\$25,000
Purchase and transport of food from Dakar . . . . .	\$30,000
USGS experts, seismic equipment, and transportation costs . . . . .	\$34,100
Housing rehabilitation program . . . . .	\$90,000
<b>TOTAL</b>	<b>\$179,100</b>

#### Assistance Provided by U.S. Voluntary Agencies

American National Red Cross -- cash contribution of \$10,000 through LORCS.

**TOTAL**     **\$10,000**

#### Assistance Provided by the International Community

##### International Organizations

Conseil Entente (intergovernmental organization) -- cash grant of \$357,143 to the GOG.

Economic Commission for Africa -- \$50,000 grant to the GOG.

EEC -- \$80,458 to UNDR0.

LORCS -- chartered a plane to arrive in Guinea on December 27 with 160 family tents, 4 large tents, 7,000 blankets, one ton of clothes, and a range rover. Three delegates accompanied the air shipment, which was financed by the Red Cross Societies of Denmark and the Federal Republic of Germany (Guinea has no national Red Cross Society). On December 31, LORCS launched an appeal for funds to distribute emergency food to 3,000 injured and other vulnerable people over a three-month period, furnish cooking utensils to 600 homeless families, and repair and resupply the seriously damaged Koumbia dispensary.

Secours Populaires Francais, Federation de Paris -- 20 crates of blankets, value not reported.

UNDP -- \$30,000 to UNDR0.

UNDR0 -- implemented a 3-month emergency program with financial assistance from Switzerland, the USG, UNDP, and the EEC. An UNDR0 team, which arrived a few days after the earthquake, concluded that relief supplies donated by the international community were sufficient to meet emergency needs, but that subsequent transfer from Conakry to the distant and inaccessible disaster site caused delays. It was accordingly decided to use the cash contributions of the above donors (see respective listings for amounts) to strengthen the GOG's transport capacity by providing diesel fuel, tires, and spare parts for heavy-duty trucks.

UNICEF -- medicines and medical supplies, valued at \$40,000; airfreight of medical supplies, valued at \$55,000.

WFP -- 60 MT of rice, 6 MT of canned meat, and 6 MT of milk powder, distributed to 5,000 victims immediately after the earthquake; valued at \$52,000; 180 MT of rice given to 20,000 victims over a 45-day period.

WHO -- two emergency health kits to meet basic and urgent medical needs of 20,000 people for three months, valued at \$20,000.

##### Governments

Canada -- cash contribution of \$2,385 through LORCS.

Cape Verde -- cash grant of \$10,000 to GOG.

China, Peoples Rep. -- cash grant of \$10,000 to GOG.

Congo -- medicines and cash grant of \$238,095 to GOG.

France — one planeload (10 MT) of medicines, blankets, and tents, and a helicopter put at the disposal of the Guinean authorities; value not reported.

Gabon — cash grant of \$357,143 to GOG.

Gambia — cash grant of \$7,143 to GOG.

German Dem. Rep. — 500 blankets, value not reported.

Germany, Fed. Rep. — 7,000 blankets, 4 tents for health posts, one ton of medical supplies, and one range rover, valued at \$63,000, given through the German Red Cross.

Guinea Bissau — cash grant of \$23,810 to GOG.

Italy — one planeload of 30 MT of food and 10 MT of dry skim milk, value not reported.

Ivory Coast — 200 MT of rice, value not reported; and a cash grant of \$238,095 to GOG.

Japan — cash grant of \$100,000 to GOG.

Kuwait — 25 tons of medicines, emergency food, tents, and blankets; value not reported.

Liberia — 225 MT of rice, value not reported.

Mali — 6 tons of medicines and a medical team, value not reported.

Mauritania — 3 MT of frozen fish and 1,000 blankets, value not reported.

Morocco — a medical team of seven doctors and paramedics, three tons of medical supplies, 26 civil defense specialists, 100 tents, 2,000 blankets, five tons of emergency supplies; valued at \$120,000.

Netherlands — cash grant of \$47,925 for purchase of relief items, donated to LORCS through the Netherlands Red Cross.

Niger — cash grant of \$119,048 to GOG.

Saudi Arabia — cash grant of \$5 million and 160 MT of emergency food, medicines, blankets, and other emergency supplies; value not reported.

Sierra Leone — 45 MT of rice and two tons of medical supplies, value not reported.

Switzerland — cash grant of \$30,734 to UNDRO and four communications specialists to establish links between Koumbia and Conakry.

Togo — 25 MT of millet and 25 MT of rice, value not reported.

United Kingdom — cash grant of \$35,450 to LORCS.

Yugoslavia — seismological team and equipment, value not reported.

Zaire — cash grant of \$100,000 to GOG.

### Voluntary Agencies

Action d'Urgence Internationale — two relief teams and one doctor, value not reported.

Algeria Red Crescent — three Hercules C-130 planeloads carrying 42 tons of tents, blankets, medicines, and food; value not reported.

Cameroon Red Cross — cash contribution of \$2,385 through LORCS.

Canada Red Cross — cash contribution of \$4,060 through LORCS.

Egypt Red Crescent — contribution of 900 kg of food through LORCS, value not reported.

Libya Red Crescent — cash contribution of \$3,165 through LORCS.

Norway Red Cross — cash contribution of \$26,606 through LORCS.

Soviet Union Red Cross — 900 kg of medicine, tents, and blankets; and 500 kg of baby food, through LORCS; value not reported.

Spain Red Cross — an airplane with relief supplies valued at \$51,376.

Switzerland Red Cross — 600 kg of cooking utensils through LORCS, valued at \$9,633.

**TOTAL \$7,284,654**

## Cyclones

# Madagascar

### Date

December 1983-April 1984

Cyclone Andry — December 10, 1983

Cyclone Caboto — early January, 1984

Cyclone Domoina — January 20-24, 1984

Cyclone Kamisy — April 9-10, 12-13, 1984

### Location

The four provinces hardest hit by the series of cyclones were Antsiranana (Diego Suarez), Mahajanga (Mahajunga), Toamasina (Tamatave), and Fianarantsoa

First three cyclones — Soalara, Mitsinjo, Marovoay, Fifabe, Mampikony, Farafangana, Vohipeno, Antananarivo, and the east coast

Cyclone Kamisy — Antsiranana, Nosy Be, Mahajanga, Toamasina, and the agricultural areas of Marovoay and Lac Alaotze

### No. Dead

First three cyclones — 42; 3 missing

Cyclone Kamisy — 68; several missing; hundreds injured

### No. Affected

First three cyclones — 13,560 homeless

Cyclone Kamisy — 100,000 homeless in major cities and towns

### Damage

First three cyclones — Wide-spread damage to standing crops and loss of 10,000 tons of stored rice; extensive damage to agricultural infrastructure, bridges, dams, warehouses, roads, and telecommunications system; government estimate of total damage was \$25 million

Cyclone Kamisy — Thousands of private and public buildings destroyed or damaged; communication systems, electricity, and water supply disrupted; port facilities and overland transportation network damaged; material damage (including crops) estimated at \$250 million.

### The Disaster

Four destructive cyclones affected large areas of Madagascar during the 1983-84 rainy season. In addition to cyclone damage, rainfall through February was 220% of normal in some regions. The first three storms occurred in early December and January.

Forty-two lives were lost and over 13,500 people were left homeless as a result of the early cyclones and the heavy rains. Crop damage was widespread, especially in the major rice-growing regions. Ninety-five per cent of cultivated land in the Fifabe rice project was flooded and over 5,300 hectares in the Lac Alaotze region and 7,000 hectares in the Laniera Plain near Antananarivo were inundated. The main export crops, coffee, cloves, and vanilla, sustained some damage as well. Flood waters ruined 10,000 tons of stored rice in Marovoay, one of the most seriously affected regions. Also in that region, over 400 km of irrigation canals were destroyed or silted; bridges, dams, and pumping stations were damaged; 250 km of farm to market roads were washed out, and telecommunications were disrupted. Comparable though less extensive damage occurred in several other areas.

Just as the rainy season was nearing its end, the fourth and most destructive cyclone of the season hit the north coast of Madagascar on April 9. Packing winds up to 220 km per hour, Cyclone Kamisy inflicted heavy damage on Antsiranana and Nosy Be before moving out to sea. The storm continued westward to the Comoro Islands, then reversed direction and slammed into Madagascar again on April 11 at the port city of Mahajanga. Although the winds diminished as Kamisy moved over land, the accompanying rains caused severe renewed flooding in the Marovoay and Lac Alaotze agricultural regions as well as in the lower city of Toamasina on the east coast.

The two major urban centers of the most seriously affected areas, Antsiranana and Mahajanga, were each about 80% destroyed. Port facilities were damaged in the two cities but more extensively in Mahajanga where several warehouses were virtually destroyed. Moreover, an estimated 40,000 to 45,000 people were left homeless in each of the two urban areas as thousands of huts were flattened by the wind or buildings lost their roofs. Some 15,000 people in each city were reported to

have lost all their possessions. Poorly designed homes constructed of thin metal sheets in urban areas, and traditional houses of wattle and daub with tin roofs (Mahajanga area) or of wood pole and raffia construction (Antsiranana) in rural areas, proved to be highly vulnerable to wind damage. Numerous schools, hospitals, churches, and administrative buildings were also damaged or destroyed.

Bridges, dikes, dams, and roads were submerged in some areas, and rail service between the capital and Toamasina was interrupted for a time. Electricity and water lines were cut. An already inadequate communications system was worsened by the storm, thus preventing an accurate damage assessment in the more remote areas of the provinces.

Hundreds of injuries and 68 confirmed deaths resulted from the cyclone. Health problems increased in the aftermath of the disasters as dysentery reached epidemic proportions in Mahajanga, Antsiranana, and Toamasina. Several confirmed cases of typhoid and two suspected cases of cholera were reported.

### Action Taken by the Government of the Democratic Republic of Madagascar (GDRM) and Non-Governmental Agencies

Washed out roads and bridges and submerged airports hampered government efforts to conduct a damage assessment after the early cyclones. By March 6, however, the GDRM Minister of the Interior and President of the National Relief Committee [Conseil National de Secours (CNS)] convened the diplomatic corps to present a report and issue an appeal for disaster assistance. The GDRM sought international aid for repair of the communications system and the agricultural infrastructure as well as donations of rice, medicines, and construction materials. The CNS contributed approximately \$20,243 in cash to the affected provinces in addition to shelter material, medicines, clothes, and emergency food.



*Only the blackboard is left standing after Cyclone Kamisy.*

When Cyclone Kamisy inflicted massive new damage, the government again mobilized its resources to respond to the needs of the affected population. The GDRM flew emergency rice supplies to Antsiranana and Nosy Be and promised additional food and construction materials as soon as supply channels could be reestablished. On April 12, the government appealed once more to the international community for immediate assistance with the provision of rice, milk, medicines, and building materials and for long-term aid in rebuilding infrastructure.

The CNS director welcomed USG-proposed technical assistance in construction techniques to reduce cyclone vulnerability and pledged full cooperation. The CNS was to formulate a list of hospitals, schools, and public buildings where U.S.-donated commodities would be used and to distribute materials from the ports to various locations. Because some buildings in Mahajanga were damaged by flooding as well as by wind, local officials planned to develop a strategy which would help people repair only those houses located in safe areas.

Local voluntary agencies also assisted the relief and recovery effort. The Malagasy Red Cross issued an appeal for blankets, tents, clothing, medicines, and food. Caritas Madagascar worked in conjunction with Catholic Relief Services in distributing food, medicines, and sanitation supplies in Mahajanga and Antsiranana.

### **Assistance Provided by the United States Government**

In response to the GDRM's appeal for emergency aid, the U.S. Charge d'Affaires, David P. Rawson, determined on March 14 that the situation created by three cyclones and torrential rains justified the provision of USG disaster assistance. He exercised his disaster relief authority to obligate \$25,000 for the local relief program.

As conditions worsened dramatically with the arrival of Cyclone Kamisy, U.S. Ambassador Robert B. Keating made a second disaster determination on April 13 and authorized the use of another \$25,000 for local relief.

The Embassy immediately authorized Catholic Relief Services (CRS) to release stocks of P.L. 480 Title II rice and milk from its regular program on a replacement basis to assist the emergency feeding program.

OFDA obligated an additional \$70,000 to augment the Ambassador's authority. The funds were used for the local purchase of 5,000 blankets (\$15,000), 12,000 pounds of soap (\$5,000), medical supplies, and in-country transport and distribution of those items and the CRS food commodities.

In view of the serious health situation developing in the wake of the cyclone and flooding disasters, the U.S. Embassy reviewed medical needs and requested OFDA assistance in procuring priority medical items. The three shipments of drugs and supplies arranged by OFDA included the following: one million units of penicillin and 204,000 tablets of sulfamethazole, both from U.S. suppliers; and 100,000 packets of oral rehydration salts, 200,000 capsules of chloramphenicol, 10,000 ampules of water for injections, 100 syringes, 480 needles, ten stethoscopes, and ten sphygmomanometers, all through UNICEF.

During on-site visits to Mahajanga and Antsiranana, U.S. Embassy personnel noted that considerable quantities of materials would be needed to restore public services and rebuild private dwellings. They agreed with GDRM officials that institutions providing public services should be given top priority and planned accordingly to direct U.S. assistance initially toward the repair of hospitals and schools. Because the needed materials were not available in sufficient quantity in Madagascar, OFDA and the Embassy arranged

with A.I.D.'s Regional Economic, Development, and Service Office (REDSO/ESA) in Nairobi to procure building supplies in Mombasa. OFDA approved first tranche funding of \$250,000 on May 17 for the purchase of roofing sheets, cement, and nails. The construction materials arrived in Madagascar on June 22 and were delivered to Mahajanga. A second tranche of \$250,000 was allocated by OFDA on June 28. Of this amount, \$200,000 was used to purchase 500 tons of cement, five tons of roofing nails, and 14,500 roofing sheets (26 gauge) to be shipped to Antsiranana. OFDA reserved \$50,000 for the local purchase of wood in Madagascar.

As part of the building repair program, OFDA funded an assessment by disaster housing specialists to estimate shelter needs in the cyclone-ravaged areas and make recommendations for USG assistance. To reduce future vulnerability, the housing team proposed that local officials be trained as instructors in safe building repair and rehabilitation methods and encouraged to conduct a public awareness campaign. The team also recommended the subsidized sale of building supplies with proceeds to be used for the purchase of additional materials and the establishment of labor-intensive works projects and small enterprises.

The USG provided more than 11,000 MT of P.L. 480 Title II commodities in response to the emergency. This included 255 MT of foods (rice, milk, oil) to CRS to replace diverted stocks and 10,000 MT of rice and 1,000 MT of vegetable to the GDRM. All but 2,000 MT of the rice was monetized with the proceeds used for relief and rehabilitation projects (including the housing repair program), logistics, and possibly agricultural development.

**Summary of USG Assistance**

Ambassador's Authority used for local relief (first determination) . . . . .	\$25,000
Ambassador's Authority used for local relief (second determination) . . . . .	\$25,000
Increase in Ambassador's Authority for local purchase and transport of relief commodities . . . . .	\$70,000
Cost and transport of medicines purchased in U.S. . . . .	\$15,108

Cost and transport of medicines purchased through UNICEF . . . . .	\$25,498
Administrative expenses of housing vulnerability assessment team . . . . .	\$11,665
First tranche for purchase of building supplies . . . . .	\$250,000
Second tranche for purchase of building supplies . . . . .	\$250,000
Contract for training program to teach principles of cyclone-resistant design and construction . . . . .	\$104,385
<b>Total OFDA funds . . . . .</b>	<b>\$776,656</b>
11,255 MT of P.L. 480 Title II commodities (includes ocean freight) . . . . .	\$5,584,400
<b>TOTAL . . . . .</b>	<b>\$6,361,056</b>

**Assistance Provided by U.S. Voluntary Agencies**

CRS — 1,200 kilos of medicines donated by Catholic Medical Missions and valued at \$10,884; 2,000 pounds of clothing and soap worth \$4,240; distributed milk donated by EEC and P.L. 480 Title II stocks diverted from regular programs (see also Assistance Provided by the International Community and Assistance Provided by the USG).

**TOTAL \$15,124**

**Assistance Provided by the International Community**

**International Organizations**

EEC — \$296,500 in cash through LORCS for the purchase and transport of tents, cooking utensils, milk, etc.; 9,500 kgs of milk to CRS, valued at \$9,000.

Gulf Group Companies — \$50,000 in cash.

Islamic Association — 1.5 tons of rice, value not reported, and \$10,000 in cash for the purchase of relief items.

LORCS — dispatched a four-delegate relief team (from the Netherlands Red Cross), 250 family tents, 2,500 blankets, and \$44,000 in cash for initial purchases (presumably reimbursed from appeal funds); on behalf of the Malagasy Red Cross, appealed for approximately \$601,851 (1,249,100 Swiss francs) in cash and kind to assist 40,000 victims for a three month period.

UNDP — assistance project valued at \$30,000.

UNDR0 — \$30,000 in cash for the local purchase of emergency relief supplies; with U.K., financed an airlift of 32 tons of relief items, including medicines donated by the German Red Cross and Hopital Sans Frontieres.

UNICEF — medicines valued at \$11,000.

WHO — six emergency health kits, with a total value of \$30,000.

WCC — \$20,000 in cash through the Mozambique Federation of Protestant Churches.

### Governments

Australia — \$22,500 in cash through UNDR0 for the purchase of medicines, clothing, and food.

Canada — \$38,300 in cash through LORCS.

China, People's Rep. — \$20,000 in cash.

France — two ship loads of food and building supplies from Reunion (including 300 tons of rice which was later increased to 1,000 tons); five tons of medicines from official and private sources; 500 tons of fuel; four large tents for dispensaries; about 4,500 roofing sheets; technical assistance to repair naval air base and port facilities in Antsiranana; value not reported. France also paid air passage (\$2,325) for an UNDR0 relief officer from Geneva to Madagascar.

Germany, Fed. Rep. — \$3,500 in cash for the local purchase of blankets plus an additional \$19,230 in cash; 1,300 sheets of roofing material, value not reported.

Italy — tents, medicines, milk, and soap, all valued at \$41,500.

Japan — \$92,000 in cash and 5,255 tons of rice, value not reported.

Netherlands — \$65,000 in cash to the Netherlands Red Cross for the purchase of tents.

Norway — \$38,000 in cash to the Norwegian Red Cross and \$28,500 in cash to Save the Children

Soviet Union — 1,000 blankets to the National Relief Committee and one ton of medicines, value not reported.

United Kingdom — \$20,800 worth of medicines through the Ministry of Health, including antibiotic, anti-malarial, and anti-diarrheal drugs; \$74,000 in cash for the airlift of emergency supplies.

Note: Additional contributions totaling \$149,541 from Australia, Canada, Denmark, Finland, France, Netherlands, and Norway were made in response to the LORCS appeal but cannot be itemized by country.

### Voluntary Agencies

Caritas Belgium — \$1,850 in cash through Caritas Madagascar.

Caritas Germany (Fed. Rep.) — \$10,650 in cash through Caritas Madagascar.

Caritas Netherlands — 12 tons of baby food, 12 tons of milk powder, and 108 tons of rice through Caritas Madagascar, value not reported.

France Red Cross — services of a delegate and \$6,242 in cash to LORCS: medicines, value not reported.

Hopital Sans Frontieres (France) — 800 kgs of medicine airlifted by France.

Spain Red Cross — medicines, value not reported.

Switzerland Red Cross — medicines worth \$21,172.

**TOTAL      \$1,142,610**

**Drought****Mali****Date**

June 1984-May 1985

**Location**

Sahelian and Sudanese zones, particularly the regions of Gao, Timbouctou, Segou, Mopti, and Kayes

**No. Dead**

Not reported

**No. Affected**

1,500,000

**Damage**

FAO estimated the net cereal deficit to be 481,000 MT

*(Please note: This disaster, declared near the close of FY 84, was still active at the time of publication.)*

**The Disaster**

Much of Mali lies in the Sahara Desert or in the dry Sahelian zone and is therefore very susceptible to the vagaries of rainfall. Both 1982 and 1983 saw insufficient rainfall in the Sahel, which particularly affected the Gao and Timbouctou regions. When the rains failed again in 1984, the food shortage situation became disastrous, not only in Gao, Timbouctou and Kayes — often affected by drought — but also in Mopti and Segou. In the remote region of Gao, where distances are great and transportation links poor, normally about 49% of the population are nomads, but during this prolonged drought, much of the normally sedentary population had to migrate in search of water.

Medecins Sans Frontieres, a French private voluntary agency, reported serious nutritional deficiencies in the affected areas. In a survey taken of children younger than five years old, the following percentages were found to be below 80% of normal weight-height ratios: Timbouctou: 18-52%; Gourma Rharous (along the Niger River, east of Timbouctou): 27-70%; Dire (southern Gao): 12-47%; Niafunke (northern Mopti): 7-18%; and Goundam (southern Gao): 15-38%.

Many Malians have a precarious economic existence in the best of times and several years of insufficient rainfall, coupled with years of deforestation and erosion, pushed the country toward disaster.

**Action Taken by the Government of the Republic of Mali (GRM)**

In October 1983, the GRM launched an appeal for international aid. It also formed a national commission to aid victims of the drought. The FAO estimate of a 481,000 MT cereal deficit and its recommendation of only 202,000 MT of food aid (because of logistical and management constraints) were endorsed by the GRM, and its requests for emergency food have followed the recommendations.

The GRM has tried to schedule food aid deliveries in the most efficient manner while the Office des Produits Agricoles du Mali (OPAM), the Government's agricultural office, has been charged with distributing much of the food aid.

**Assistance Provided by the United States Government**

On September 13, 1984, Ambassador Ryan declared that the drought had caused a disaster in Mali. His disaster assistance funds were used to provide two grants of \$12,500 each to UNDR0 and to the Coordinating Committee for Emergency Actions (CCAU, a group of non-governmental organizations) for inland grain transport.

OFDA gave CCAU an additional \$300,000 and UNDR0 \$50,000 from its special \$16 million appropriation for inland food transport. (This figure is not included in the total here as it is noted under the section **Disaster Relief in FY 1984** — Special Appropriation for Inland Transport.)

USAID's strategy to alleviate the disaster includes both the sale and free distribution of P.L. 480 Title II food grains. Sales help meet the national cereal requirement during a time of shortage as well as provide the counterpart funds necessary to transport other commodities for free distribution in rural areas. Free distribution will play an increasingly important role throughout FY 85 in preserving the rural structure of the country and averting widespread famine.

To implement this strategy, USAID and the Malian drought relief commission (CNAVS) decided on a management plan for 15,000 MT of P.L. 480 Title II commodities already allocated to Mali. Of the 15,000 MT, 5,000 MT of rice will be sold through OPAM's eight outlets in the region of Mopti. Net proceeds will be placed in a joint GRM-USAID bank account and will be used to pay for free distribution of 10,000 MT of corn and cornmeal. All free distribution will be handled by three private voluntary organizations which already have experience in Mali. (These three are Stromme Memorial Foundation, the Baptist Mission, and Norwegian Church Aid. For more information, see below.) The cost of these commodities is \$3,769,800 and the ocean freight comes to \$7,100,000.

In addition to these commodities, USAID also donated the following amounts of Title II food during FY 84: 10,000 MT of corn to WFP (the cost of the food was \$1,527,800 while the ocean freight came to \$1,100,000); 5,000 MT of cornmeal and 5,000 MT of rice to the GRM (commodity cost \$2,702,900, ocean freight \$1,969,000); and 4,860 MT of corn to the African-American Labor Center (commodity cost \$742,500, freight cost \$1,069,200).

Besides the 15,000 MT donated to the GRM, USAID is also providing 300 MT of non-fat dry milk, 550 MT of rice, and 100 MT of vegetable oil to LORCS in FY 85. The cost of the food is \$309,300 and ocean freight is \$209,000.

Much of sub-Saharan Africa, particularly the Sahel zone, is in deep crisis, rivalling the devastating drought of the early 1970s. Many international donors are mounting a concerted relief effort, partly to prevent famine conditions from arising and partly to deal with the underlying causes of the food shortage.

Consequently, in late January 1985, OFDA is planning to send a two-person team to assess the extent of the emergency in Mali and to determine the most appropriate and effective U.S. response. Their report will enable OFDA to decide on what further aid should be given to Mali in FY 85.

Total OFDA assistance (FY 84) . . . . .	\$25,000
Total Food for Peace assistance (FY 84) . . . . .	\$9,111,400
Total USG assistance (FY 84) . . . . .	\$9,136,400
Total Food for Peace assistance (FY 85) . . . . .	\$7,388,100
<b>TOTAL (as of January 1985)</b>	<b>\$16,524,500</b>

**Assistance Provided by U.S. Private Voluntary Agencies**

African-American Labor Center — handled 4,860 MT of Title II corn provided by the USG.

Baptist Mission — distributed Title II corn in FY 84 and will distribute 3,000 MT of Title II corn in the dryland area of Mopti.



CARE — made surveys of drought-stricken areas.  
World Vision International — distributed 90 MT of rice in Kayes and the Niolo du Sahel area, and will provide food aid and transport to Kayes, Kolokani, and Gao (in Gao, working with LORCS), worth \$496,500.

**TOTAL \$496,500**

### Assistance Provided by the International Community

#### International Organizations

EEC — donated \$1,200,000 for the local purchase of food and seed and for their transport to the affected regions; gave \$625,005 to Medecins Sans Frontieres for a health program; and provided 13,500 MT of cereals and inland transportation, worth \$4,914,700.

FAO — conducted an assessment of the food shortage situation in December 1983 with WFP.

LORCS — provided eight refrigerators and 60 containers to hospitals and health posts; provided medicines and oral rehydration packs for maternal-child health clinics and first aid posts; appealed for a 10-ton truck, two four-wheel drive Toyotas, a Land Rover, and food.

UNDP — used \$1,085,000 from its emergency funds for hydro-agricultural projects and pumps.

UNDRO — sent evaluation teams in May 1984 and in November 1984; sent a representative to Bamako who has been coordinating relief efforts; made an urgent appeal for 400,000 tons of seeds; distributed 5,000 MT of grain and contributed \$9,000 towards this \$90,000 operation.

UNICEF — organized two medical teams for Gao and Timbouctou.

U.N. Sahelian Office — installed 50 pumps.

WFP — distributed more than 100,000 MT of food.

WHO — conducted a health program in the drought zones.

#### Governments

China, Peoples Republic — 2,000 MT of rice.

Denmark — \$90,407 in cash through UNDRO.

France — 7,000 MT of maize.

Netherlands — 4,000 MT of rice and 2,000 MT of yellow corn, valued at \$1,500,000.

Norway — food and medicines worth \$464,100.

Switzerland — \$17,000 to UNDRO for food transport.

#### Private Voluntary Organizations

Coordinating Committee for Emergency Action — channelled donations to PVOs for inland transport of food.

Medecins Sans Frontieres — conducted nutritional surveys and health programs.

Norwegian Church Aid — will distribute 1,500 MT of U.S. Title II corn to nomads through its relief and development project based in Gossi.

Oxfam/U.K. — provided \$32,712 for the purchase of maize and rice, and grants to various PVOs worth \$370,950.

Stromme Memorial Foundation (Norwegian PVO) — worked with Baptist Mission in FY 84 to distribute food; will distribute 2,500 MT of U.S. Title II corn in the inland delta region of Mopti from February to April 1985 and 3,000 MT of Title II corn in May, June, and July; will provide mechanics, drivers, logisticians, nutritionists, and five four-wheel drive trucks for the relief effort.

**TOTAL \$10,308,874**

**Drought and  
Food Shortage****Mauritania****Date**

1984

**Location**

Nationwide, most severely affected regions were Adrar, Brakna, Inchin, Trarza, and Tagant.

**No. Dead**

Not reported

**No. Affected**

1.7 million (entire population)

**Damage**

In 1983, severe rainfall deficits were recorded in nine of the country's twelve regions. Cereal production during the 1983/84 season was 15,000 tons, accounting for only 7% of the national consumption requirement. Nationwide, over 30% of the livestock and 50% of the camels died from starvation or disease and a substantial proportion had to be sold or slaughtered to prevent further losses. It was estimated that 80-90% of the population required emergency food rations.

**The Disaster**

In 1983-84, Mauritania was afflicted with its worst drought since the last Sahelian drought in the early 1970s. Average rainfall during the 1983 planting season was only 20 percent of normal and, as a result, cereal production was down by more than 75 percent. The desert sands of the Sahara continued to creep steadily southward, covering over 80 percent of the Mauritanian landscape. Land suitable for farming or grazing was only available on a narrow strip along the Senegal River and in portions of the South, where rainfall normally measures more than 300 mm a year. Many wells, oases, and watering holes dried up completely and the Senegal River dropped to its lowest level in years.

Mauritania's nomadic population was the hardest hit by the drought. In some areas, as much as 90 percent of the livestock died from starvation or disease. Many nomads migrated south into Senegal and Mali, in search of water and pasture for their herds. Those that stayed behind congregated into squatters camps near food distribution centers run by the government and voluntary agencies. Many displaced by the drought camped on the outskirts of Mauritania's capital, Nouakchott, swelling its population to over 300,000.

As a result of the drought and food shortage, the health situation in Mauritania deteriorated seriously. Health conditions in the refugee camps were especially poor, due to the lack of potable water and adequate sanitation facilities. Measles, tuberculosis, schistosomiasis, and malaria infected many Mauritians already weakened by malnutrition. Nutritional assessments conducted by several health organizations reported that between 40 and 70 percent of the children under five years of age suffered from malnutrition. Cases of anemia, diarrhea, scurvy, and vitamin A deficiency were also quite prevalent throughout the country. Due to the absence of any mortality surveillance system, it is impossible to determine how many deaths could be attributed to the drought.

**Action Taken by the Government of the Islamic Republic of Mauritania (GIRM)**

The summer of 1983 brought the lowest average rainfall to Mauritania in seventy years. In September, President Haidalla called an emergency meeting of regional governors, cabinet ministers, and military commanders to develop a strategy to cope with the drought. Hydrological and health assessments were made of drought-stricken areas in order to target the most affected regions. Based on these assessments and the recommendations of several donor consultants, the GIRM adopted an emergency action plan in November 1983. The plan included an inventory of the GIRM's financial, human, and logistical resources and a list of the resources needed to combat the drought. A national and international appeal was made to help finance implementation of the plan. Even though Mauritania has one of the lowest per capita incomes in the world, the national appeal garnered over US \$1 million in contributions from the private sector and civil servants.

The plan established the National Committee for Assistance to People Affected by the Drought (CNAPES) to coordinate disaster relief at the national level. A technical commission was appointed to recommend long term solutions to the problems caused by chronic droughts. At the regional and local levels, a political movement known as Structure d'Education des Masses (SEM) was organized to assist in the relief effort and educate the populace about proper drought mitigation measures.

The GIRM's Commissariat for Food Security (CSA) was put in charge of distributing approximately 75% of the donated food free of charge to the indigent and as payment to relief workers. Community feeding centers run by the CSA, SEM, Mauritanian Red Crescent, and Catholic Relief Services (CRS) provided extra rations of food to drought victims, especially children, young mothers, and the elderly. Perhaps the most difficult problem was getting the food to the feeding centers and isolated nomadic communities. Trucks owned by CSA, military vehicles, private carriers, and donated land rovers were used to transport food to the regional warehouses and feeding centers. Nomads were encouraged to resettle closer to roads and food distribution sites.

The plan also sought to find ways to mitigate the disastrous effects of the drought. The SEM taught farmers and herders how to protect their land from desertification. Hydraulic brigades were dispatched to the countryside to dig new wells, repair dilapidated wells, and build earthen dams and dikes to conserve water. Mobile medical teams vaccinated both children and livestock in an effort to contain the spread of disease. The plan encouraged vegetable gardening and consumption of dried fish as a means of reducing Mauritania's dependency on imported food. Other mitigation measures promoted by the plan included better nutritional and health surveillance of vulnerable groups and public information campaigns to educate the people about proper health and sanitation practices.

#### **Assistance Provided by the United States Government (USG)**

On August 29, 1983, USAID/Mauritania received a formal request from the GIRM Ministry of Foreign Affairs to provide emergency food aid to Mauritania. USAID proposed an integrated drought relief program targeting three of the most affected regions: Adar, Tagant, and Trarza, which have a total population of 350,000. On October 5, the U.S. Charge d'Affaires declared that the drought situation in Mauritania warranted U.S.G. assistance. USAID immediately requested an epidemiologist from the U.S. Centers for Disease Control (CDC) be sent to analyze nutritional survey data from the three targeted regions. The CDC epidemiologist found that an alarming number of children under five years of age were suffering from severe malnutrition. The epidemiologist also submitted a list of emergency medicines needed to combat disease and malnutrition in the three regions. The list included antibiotics, malaria suppressants, antituberculars, oral rehydration salts, vitamin and iron supplements, and various medical supplies. The Ambassador's \$25,000 disaster assistance authority was immediately allocated for local purchase of medicines and medical supplies (\$17,000), the cost of the CDC visit (\$4,000), and support of the nutritional surveillance study (\$4,000).

Because most of the emergency medicines were not available in Mauritania, OFDA had to pur-

chase emergency drugs and medical supplies from U.S. pharmaceutical companies. The services of a U.S. international air freight company and an international forwarder firm were procured to transport the medical supplies to Nouakchott. In addition, OFDA provided \$36,056 to UNICEF to purchase and transport additional medicines.

In support of a CRS emergency feeding program, OFDA provided a grant to finance inland transportation of 830 MT of P.L. 480 Title II commodities, the purchase of medicines and medical supplies, and local training and personnel costs. The CRS program provided one extra food ration per month to an additional 9,000 pregnant and lactating mothers for a twelve month period.

In recognition of the serious logistical constraints in Mauritania, OFDA committed over \$2.5 million for inland transportation of P.L. 480 food commodities. Due to the inadequacy of the Nouakchott wharf, most of the donated food was shipped to the port at Dakar, Senegal, and from there transported by private carriers and ferry to Rosso. OFDA provided two grants to the GIRM to pay private trucking contractors to transport 16,670 MT of P.L. 480 commodities to distribution centers scattered throughout Mauritania. A food aid monitor was hired to supervise delivery of these commodities. In late FY 1984, OFDA provided \$1,245,656 to CARE to fund emergency transportation of 15,000 MT of food from the 62 distribution centers to remote rural communities. This money, plus a \$200,000 grant to the GIRM for inland transportation costs, came out of the \$16 million Special Congressional Appropriation. (These figures, which total \$1,445,656, are not included in the total USG assistance below as they are listed in the section **Disaster Relief in FY 1984 -- Special Appropriation for Inland Transport.**)

OFDA also funded 3-member WASH team hydrological assessment of the Adar, Tagant, and Trarza regions. An agrometeorologist from NOAA was also sent to Nouakchott to brief GIRM officials in the latest drought forecasting techniques.

**Summary of USG Assistance**

Ambassador's Authority used for local purchase of medicines (\$17,000), CDC epidemiologist (\$4,000), and nutritional survey (\$4,000) .....	\$25,000
Purchase of emergency medicines and supplies from U.S. pharmaceutical companies .....	\$98,441
Air freight and international forwarder costs .....	\$41,749
Purchase and shipment of medicines from UNICEF .....	\$36,056
Grant to CRS emergency feeding program .....	\$192,196
Grants to GIRM for inland transportation of P.L. 480 commodities .....	\$1,065,000
Contract for food aid monitors .....	\$100,000
3-member WASH team .....	\$40,367
NOAA agrometeorologist .....	\$2,600
Total OFDA assistance .....	\$1,601,409

A.I.D.'s Office of Food for Peace (FFP) provided 16,670 MT of P.L. 480 Title II commodities (12,870 MT of wheat, 3,800 MT of NFDN) and 2,500 MT of Section 416 butteroil to the GIRM's Commissariat for Food Security. Another 830 MT of food (475 MT of SFSC, 237 MT of NFDN, 118 MT of vegoil) was provided to CRS for distribution at its feeding centers.

Through GIRM	
P.L. 480 commodities .....	\$2,453,300
Freight cost .....	\$4,400,000
Section 416 commodity cost .....	\$4,550,000
Freight cost .....	\$350,000

Through CRS	
P.L. 480 commodities .....	\$255,500
Freight cost .....	\$245,000
Total FFP Assistance .....	\$12,253,800

In addition, A.I.D. allotted \$110,000 to USAID Mauritania for an emergency water supply program and a water monitor .....	\$110,000
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<b>TOTAL</b>	<b>\$13,965,299</b>
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**Assistance Provided by U.S. Voluntary Agencies**

CARE -- with a grant from OFDA, provided a team of logistics specialists to expedite the movement and distribution of 10,000-15,000 MT of emergency food commodities to rural populations in need.

CRS -- manages the largest on-going emergency feeding program in Mauritania, comprising 23 feeding centers and serving 20,000 mothers and 30,000 children. The OFDA grant added 9,000 recipients to this program. In FY 83, CRS distributed 830 MT of P.L. 480 foods. CRS is also involved in a number of on-going projects, including health education, integrated rural development, self-help and irrigation projects, in collaboration with the GIRM and other private voluntary agencies.

**Assistance Provided by the International Community****International Organizations**

EEC -- donated 17,000 MT of wheat to the GIRM, gave \$480,000 in cash to the health sector and for transportation costs, and provided \$420,012 in response to a LORCS appeal.

FAO -- contributed 2,000 tons of cattlefeed, valued at \$570,000; donated \$200,000 for the purchase of livestock vaccines; and, in conjunction with WFP, allocated 15,500 tons of corn, 1,560 MT powdered milk, and 1,100 MT butteroil, valued at \$11,253,000 including transportation costs.

UNDRO -- at the request of the GIRM, launched an international appeal for assistance on December 30, 1983. UNDRO conducted an inter-UN agency assessment of the health, agricultural, transportation, hydrological, and food sectors in Mauritania. Contributed \$25,000 for the purchase of dried fish.

UNICEF -- obligated \$150,000 from its emergency funds for implementation of on-going health and nutrition projects.

WFP -- committed \$3,601,000 in emergency food supplies, including 20,000 MT of wheat, 1,560 MT milk, and 1,170 MT of butteroil.

WHO -- in response to GIRM appeal for drugs and medical supplies, WHO provided medicines valued at \$187,000.

**Governments**

Algeria — made a cash contribution of \$84,000 to purchase medicines and donated 2,000 MT of flour, 200 MT of dates, and 50 MT of powdered milk.

Argentina — provided 3,000 MT of wheat.

Belgium — contributed 1,500 MT of wheat.

Bulgaria — donated 1,000 MT of flour.

Canada — made a cash contribution of \$852,357 to LORCS and donated 14,400 MT of wheat.

China, Peoples Republic — donated \$50,000 in cash to the relief effort and provided 2,000 MT of wheat.

France — gave 10,000 MT of wheat.

Germany, Fed. Rep. — made a cash contribution of \$234,000 to purchase medicines and donated 9,000 MT of wheat.

Holland — gave 9,000 MT of wheat and 6,000 MT of flour.

Kuwait — contributed 3,600 MT of wheat.

Libya — donated 3,000 MT of barley.

Japan — contributed 3,100 MT of rice.

Norway — made cash contribution of \$27,000 to Norwegian Caritas.

Romania — gave 200 MT of biscuits, 100 MT of sugar and 1,000 MT of flour.

Saudi Arabia — donated 10,000 MT of wheat.

Soviet Union — gave 1,000 MT of rice.

Spain — contributed 4,000 MT of wheat and 500 MT of barley.

United Kingdom — made a cash contribution of \$308,181 to the LORCS appeal; donated eight Land Rovers and \$98,000 in cash to UNDRO.

Vatican — donated \$15,000 in cash.

**International Voluntary Agencies**

LORCS — appealed for over \$7.7 million in cash and in kind to support the Mauritanian Red Crescent's programs. Programs included a supplementary feeding project to provide emergency rations to 250,000 drought victims. Two medical teams were sent to the Brakna and Hodh El Gharzui regions. The following member societies sent monetary contributions and supplies in response to the appeal: (sent or pledged as of 3/31/84)

Belgium Red Cross — \$20,861.

Denmark Red Cross — 100 MT of NFDM of NFDM and 3,500 MT of wheat, valued at \$980,886.

Finland Red Cross — \$46,636, and 23 MT of NFDM, valued at \$82,727.

German Red Cross — 37 MT of clothing, 1,500 blankets, 50 MT of sugar and 10 MT of beef, valued at \$130,000.

Japan Red Cross — 45 MT of NFDM, valued at \$40,357.

Monaco Red Cross — \$3,011.

Netherlands Red Cross — \$3,209.

Norwegian Red Cross — \$45,454 in cash and fish, NFDM, sugar and spare parts, valued at \$735,000.

Switzerland Red Cross — \$45,454.

Sweden Red Cross — \$136,364 in cash and 900 MT of wheat, 80 MT of vegoil, clothing and blankets, valued at \$427,172.

Lutheran World Federation — made a cash contribution of \$5,143 to the LORCS appeal.

Medecins san Frontieres — supported mobile medical teams operating in the Hodh el Gharby region.

Oxfam — cash contribution of \$22,000 to UNDRO.

Terre des Hommes — signed an agreement with GIRM Ministry of Health to provide emergency medical assistance to drought victims in the Brakna region.

World Vision International — established a health project in Mauritania in collaboration with Terre des Hommes.

**TOTAL      \$21,278,824**

**Floods****Mauritania****Date**

September 21, 1984

**Location**

The Adrar region of northern Mauritania, especially the city of Atar and its environs.

**No. Dead**

Several reported

**No. Affected**

Over 3,000 people were rendered homeless or temporarily displaced.

**Damage**

Extensive damage to housing, services, and road infrastructure, power lines downed, dikes, dams, and pumping station destroyed.

**The Disaster**

On Friday, September 21, 46 mm of rain deluged the city of Atar and the surrounding area. This represents more than half of the normal annual rainfall of 75 mm. The downpour overloaded the seasonal watercourses which gather rainfall on the plateau areas north and east of Atar and channel it to the lowlands to the west and south.

The flooding caused several deaths and destroyed 200-300 packed mud houses. Damage to housing was especially severe because of the tendency to build in areas close to watercourses during the previous two years of drought. Flood waters destroyed 80-90% of the structures in a poor area of Atar and displaced up to 3,000 people. Two dispensaries were destroyed, and the regional hospital was flooded. Rural villages also suffered extensive damage.

The electrical supply system was seriously affected as support poles for power lines were washed away, and one of the area's two generating units was rendered inoperable. An important deep-bore well and pumping station which had recently been installed to combat water shortages was destroyed, and major dikes and dams were breached. Flood waters also created a health hazard when carcasses of animals were deposited in the town center and areas of standing water were formed.

The only improved road in the Adrar region was flooded and major sections were washed away, thereby impeding access west to Nouakchott and east to the departments of Chinquetti and Oudane.

**Action Taken by the Government of Mauritania (GIRM)**

President Haidallah visited Atar the day after the heavy rainfall to inspect the damage and begin emergency relief operations. After a meeting between the GIRM and U.S. officials, the GIRM requested immediate emergency assistance.

The Ministry of Public Works made emergency repairs to the road from Atar to Nouakchott. The GIRM's Commission of Food Security authorized the delivery of 500 MT of U.S. relief food for use in the flooded area.

**Assistance Provided by the United States Government**

A USAID Mission representative traveled to Atar on September 25 with GIRM officials, representatives of UNDP, UNICEF, the European Development Fund, and the Embassy of the Federal Republic of Germany to meet with local administrative and military authorities. Based on assessments made in the field and the GIRM request for assistance, the Ambassador used his disaster assistance authority to donate \$25,000 to the government for immediate emergency needs.

**TOTAL      \$25,000**

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community**

None reported.

**Cyclone****Mauritius****Date**

December 8, 1983

**Location**

Agalega Islands

**No Dead**

1

**No. Affected**

350

**Damage**

All homes and a majority of other buildings were leveled; the entire coconut crop was destroyed, and it is estimated that two years will elapse before the crop can be harvested again.

**The Disaster**

On the morning of December 8, 1983, Cyclone Andry passed over the tiny Agalega Islands, located about 1,000 km north of the main island of Mauritius. Winds with gusts up to 150 mph and heavy rains destroyed most of the buildings and coconut trees on the islands. A meteorological radio station on the south island was severely damaged. Sea swells inundated the relatively flat land, flooding wells and polluting the fresh water supply with seawater. The 350 residents, most of whom are commercial fishermen or workers on the coconut plantations, were stranded without food, water, shelter, or electricity.

**Action Taken by the Government of Mauritius (GOM)**

Several hours passed before the Mauritian government was notified of the extent of the devastation. One radio transmitter served as the sole communication link with the outside world. Residents of the south island moved to the north island, where a few buildings and supplies had remained intact. Because of the health hazard posed by stagnant water on the island, the local medical officer began inoculating the population against typhoid and other diseases. The GOM made a general appeal to any foreign vessels in the area to offer any emergency assistance possible.

**Assistance Provided by the United States Government**

Upon learning of the devastation, U.S. Ambassador George R. Andrews declared that the situation warranted USG assistance. An emergency appeal went out to nearby port cities to determine if any U.S. military or commercial vessels were immediately available to transport emergency supplies to Agalega. The American consulate in Mombasa, Kenya promptly responded and dispatched the U.S.S. Fife with a shipload of emergency provisions. The ship arrived at Agalega on December 12 and the supplies were offloaded by helicopter due to the destruction of the pier and the hazard of the coral reefs. Among the emergency supplies distributed were six tarpaulins, water jugs, food, adult and children's clothing, and medical supplies. The total purchase price of these items was \$13,066, which were expended under the Ambassador's disaster authority.

**TOTAL**     **\$13,066**

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community****International Organizations**

EEC — donated \$12,045 to the relief effort through its official delegation in Mauritius.

**Governments**

France — made parachute drops of emergency supplies, including water purification chemicals, rice, and typhoid and polio vaccine. Paratroopers from the French military base on Reunion set up 300 two-man tents as temporary shelter for the homeless and provided medical care. The French frigate Victor Schoelcher was dispatched from Reunion to evacuate casualties and bring five million rupees worth of supplies (equivalent to \$384,615).

India — carried \$20,000 worth of medical supplies to the islands by a diverted merchant ship.

Sevchelles — dispatched a freighter with emergency supplies, value not reported.

United Kingdom — contributed approximately \$7,233 for purchase of relief supplies.

**TOTAL**     **\$423,893**

**Cyclone****Mozambique****Date**

January 29-30, 1984

**Location**Maputo and Gaza Provinces  
in southern Mozambique**No. Dead**

109 known dead

**No. Affected**350,000 were affected to  
some degree by the loss of  
crops; 49,000 rural people  
lost all their possessions.**Damage**

About 250,000 hectares of agricultural land were affected by flood waters, destroying a large portion of the summer harvest. The Maputo waterworks was rendered inoperable, and small irrigation systems, including pumps and dams, were destroyed. Railway and road links to the rest of the country and to Swaziland and South Africa were cut in several locations. Total damage was estimated at over \$75 million.

**The Disaster**

Mozambique found itself unexpectedly in Cyclone Domoina's destructive path on January 29-30. After battering Madagascar earlier in the month (January 20-24), the storm slammed into southern Mozambique with 100 kilometers per hour winds and torrential rains before moving on to Swaziland and South Africa.

In the capital city of Maputo (population about one million), the strong winds felled hundreds of trees, ripped roofs off houses in the center of town, and flattened less durable structures on the city's outskirts. Massive flooding of the Umbeluzi River left the city's waterworks totally disabled and forced thousands of people in the interior to flee before the rising waters. The 300 mm of rain which fell during a two-day period was the equivalent of 40% of the average annual rainfall in Maputo.

Renewed heavy rains on February 2 added to the flooding of the Umbeluzi, Incomati, and other principal rivers in Maputo and southern Gaza provinces. The situation was made even worse by the decision of the South African Government (with GPRM knowledge) to open their flood gates to relieve pressure on their own dams. The result was the worst flooding in Mozambique's recorded history.

While the death toll remained relatively low at 109, material damage from the cyclone and flooding was extensive. Besides the damage to the Maputo water pumping and treatment plant and to many dwellings and public buildings, power and communications were disrupted for a time. Overland links to the north and the south were cut in several places as road and rail lines were breached or damaged.

About 250,000 hectares of agricultural land were inundated, destroying much of the summer harvest: 55,000 tons of corn, 15,000 tons of beans, and 20,000 tons of vegetables. In addition, some 12,000 tons of citrus fruit, 7,000 tons of bananas, and 10,000 tons of sugar cane were lost, and 5,000 head of cattle perished. The loss of numerous small irrigation systems along the rivers jeopardized the winter crop as well. Small private farmers were the most seriously affected.

The heavy crop and livestock losses were regarded with special dismay in this drought-stricken country. (See also MOZAMBIQUE — Drought.) Because the three-year drought had forced farmers to move closer to river beds for most of their planting, they were especially vulnerable when the flooding occurred. Relatively normal rains in Maputo and southern Gaza provinces during the months prior to the cyclone had promised the first substantial harvest in several seasons. With only weeks to go before the summer harvest, most of the promise was suddenly wiped out.

**Action Taken by the Government of the People's Republic of Mozambique (GPRM)**

The GPRM organized a major relief effort under the personal direction of the Foreign Minister. Rescue workers succeeded in moving most of the people stranded by the flooding to safe ground. The Department for the Prevention and Combat of Natural Calamities, with the assistance of the Mozambican Red Cross, distributed food, milk, clothing, and blankets to the flood victims. Food and relief supplies were airdropped to otherwise inaccessible locations.

Lacking the resources to adequately take care of the affected population, the GPRM appealed to the international community for food assistance for the 350,000 persons who had lost their crops, as well as for fuel, seeds, medicines, tents, blankets, and other relief supplies. The GPRM also identified priorities for the country's rehabilitation, with the first being the restoration of the Maputo waterworks and the replenishment of lost stores of chemicals. Provision of seeds and the replacement of the private irrigation systems were also high priority needs.



Government technicians worked round-the-clock to restore electrical power to the Maputo water plant and to improvise ways of keeping it operating until repairs could be made.

The GPRM undertook a national self-help campaign to assist the flood victims, designating February 25 as a national day of support. Donations of clothing, blankets, and household items were received from many organizations and individuals.

**Assistance Provided by the United States Government**

The U.S. Ambassador to Mozambique, Peter Jon de Vos, was one of several diplomats who joined the GPRM Minister of Internal Trade in making an aerial survey of the devastated areas. Based on his personal observation of the destruction caused by the cyclone, the Ambassador determined that a disaster existed which warranted USG assistance. The \$25,000 obligated from his disaster assistance authority was pledged to the GPRM relief effort. Some of the P.L. 480 Title II food which had recently arrived in Maputo for drought relief was diverted to meet the needs of the cyclone victims.

OFDA arranged to send a Water and Sanitation for Health (WASH) engineer to Mozambique to assess the condition of the water treatment plant in Maputo and the small irrigation systems and to develop recommendations for OFDA action. After meeting with GPRM officials and inspecting the treatment plant, pumping stations, and pipeline to Maputo, the engineer reported that the damage was so extensive that the provision of any water at all was extremely precarious. Moreover, the water quality was certain to deteriorate drastically if new supplies of chemicals were not made available. In regard to the irrigation systems, he estimated that 50 small dams had been destroyed and 30 pump sets lost in southern Maputo Province.

In response to the WASH engineer's recommendations, OFDA approved \$550,000 for the repair of the Maputo water system. Of that amount, \$300,000 was to be used to repair or replace equipment and \$250,000 was to go toward the purchase of water treatment chemicals.

OFDA further agreed to assist in replacing the lost irrigation pumps of private farmers. Instead of furnishing 10 new pumps, however, as originally planned, the USG pledged \$340,000 for the purchase of motors and parts for pumps contributed by other donors.

**Summary of USG Assistance**

Ambassador's Authority . . . . .	\$25,000
Grant to GPRM for repair of Maputo waterworks . . . . .	\$550,000
Grant to GPRM for local purchase of motors and parts for donated pumps . . .	\$340,000
Travel and administrative expenses of WASH engineer . . . . .	\$7,518
<b>TOTAL</b>	<b>\$922,518</b>

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

### Assistance Provided by the International Community

Please note: Although every effort has been made to include all contributions reported to OFDA and to avoid double counting, it has not always been possible to separate contributions intended for cyclone relief from those directed to the drought disaster.

#### International Organizations

EEC — water treatment products, tents, blankets, and helicopter fuel, all valued at \$406,000; also, purchase and transport costs of maize and bean seeds, totaling \$1,130,435.

LORCS — on behalf of the Mozambican Red Cross, launched an international appeal on February 11 and sent a delegate to attend to cyclone relief (in addition to the delegates already in the country working on the drought disaster).

UNDP/UNDRO resident coordinator — issued an international appeal for relief and rehabilitation requirements identified by the GPRM.

#### Governments

Australia — \$25,000 in cash.

Austria — \$54,350 in cash for repair of irrigation systems.

Canada — assessment mission to identify relief requirements and \$117,190 in cash through LORCS.

Denmark — 30 pumps for irrigation systems, value not reported.

Germany, Fed. Rep. — \$36,982 in cash for relief supplies and \$11,095 for seeds.

Italy — 82 rubber boats (Zodiak) with 37 outboard motors, medicines, baby food, 70 tents, 1,500 tons of rice, seeds, and transport costs, all valued at \$1,820,700; also, clothing, powdered milk, and 50 tons of fertilizer, value not reported. In addition, Italy planned an assessment mission and funded the cost of a consultant to assist the UNDP/UNDRO resident coordinator with arrangements for the repair of the rail link to Swaziland.

Mongolia — 12 tons of canned meat, value not reported.

Netherlands — \$165,000 in cash, primarily to rebuild dwellings damaged by the cyclone; also, 150 tents, clothing, blankets, and water purification tablets, all valued at \$152,636.

Portugal — 10 tons of canned meat and 35,000 food packages, value not reported; also, food, blankets, transport and technical assistance, with a total value of \$136,935. The Portuguese Air Force donated medicines, powdered milk, vitamin supplements for children, and clothing, value not reported.

Soviet Union — one ton of medicines, 50 tents, 1,000 blankets, and three tons of food, value not reported.

Tanzania — unspecified assistance.

United Kingdom — seeds, spare parts for pumps, culvert material, a Bailey bridge, and a planeload of relief supplies, all valued at \$994,040.

#### Voluntary Agencies

Gulbenkian Foundation (Portugal) — \$100,000 in cash for food, medicines, and shelters.

Italian voluntary agencies — food, medicines, seeds, and blankets, all valued at \$18,750; also, alum for water treatment plant, value not reported.

Oxfam (U.K.) — \$69,700 in cash and seeds valued at \$74,516.

Portugal Red Cross — unspecified contribution.

Soviet Union Red Cross — relief supplies valued at \$250,000.

**TOTAL \$5,563,329**

**Drought****Mozambique****Date**

1981 through 1984 and ongoing

**Location**

The provinces of Maputo, Gaza, Inhambane, Manica, Sofala, Zambezi, and Tete

**No. Dead**

Complete figures are not available; an estimated 40,000 died in 1983, according to the Mozambique government

**No. Affected**

Approximately 4,750,000 people as of December 1983; nearly 1.5 million were in need of urgent assistance by the following April

**Damage**

Crop production had declined by 70-80% in the most seriously affected provinces after three consecutive years of drought. Heavy livestock losses resulted from a lack of pasture and water.

**The Disaster**

The present drought in Mozambique, described by the government as the worst to affect the country in 50 years, began to affect crop production as early as 1981. While the food shortage in the northern provinces was relieved by adequate rainfall in the 1982/83 growing season, the situation continued to deteriorate in the central and southern regions. The rural populations in the provinces of Maputo, Gaza, Inhambane, Manica, Sofala, and Zambezi were the most seriously affected. In parts of those provinces, insufficient rains during the critical planting period resulted in the nearly total loss of staple crops (rice, maize, cassava, sorghum) in the 1982-83 and 1983-84 seasons. Thousands of head of cattle perished from a lack of forage and water. The capital city of Maputo and environs suffered a severe water shortage due to the very low water level of the Umbeluzi River.

As the food and water shortages worsened, the incidence of disease rose markedly. A cholera epidemic in several of the drought-stricken provinces took at least 189 lives in the early months of 1983. Sick and emaciated people from the interior began moving in increasing numbers to coastal areas in search of food. Some 300,000 displaced people were eventually sheltered in government-organized camps in Gaza and Inhambane, while tens of thousands of others (mainly from Tete and Manica Provinces) had fled to Zimbabwe.

Several factors combined to exacerbate the effects of the drought. An opposition guerrilla group, the Movement of National Resistance (MNR), stepped up its attacks against agricultural targets and vital road and rail links, thus affecting food production and commercial activity and seriously hampering the delivery of relief supplies to outlying areas. A shortage of vehicles and spare parts further impeded operations. The fruitless sowing of crops depleted seed supplies, while a critical shortage of foreign exchange prevented the purchase of such agricultural inputs.

Finally, a cyclone in late January 1984 destroyed large portions of the first promising harvest in several seasons in Maputo and Gaza provinces.

By December 1983, the Government of Mozambique estimated that 4,750,000 rural people were affected by the drought, which had cost some 40,000 lives in that year alone. The number of people needing immediate relief was nearly 1.5 million by the following April.

Moreover, with virtually no rainfall in parts of southern Tete Province during the year, the food shortage had reached crisis proportions in that more northern area as well. Although Tete is potentially one of the richest agricultural areas in Mozambique and normally supplies food to less productive areas, crop output fell dramatically due to the drought, the increase in insurgent activity, the breakdown of the transportation fleet, and the dearth of agricultural tools and seeds.

Despite a positive international response, the situation in Mozambique continues to be critical. The World Food Program estimated in April 1984 that the food deficit for the next 12 months would be about 750,000 tons, with emergency feeding requirements of approximately 160,000 tons.

**Action Taken by the Government of the People's Republic of Mozambique (GPRM)**

The GPRM launched an international appeal on January 12, 1983, for cereal donations and assistance in a long-term recovery program for the central and southern provinces. The government later extended its appeal to include seeds; medical supplies; well-drilling equipment and technical assistance for water supply projects in Maputo City and in Gaza, Inhambane, and Sofala provinces; and logistical support to transport food and other relief supplies to the affected areas. The government periodically updated reports on food needs and estimates on the number of people affected by the drought. The GPRM also cooperated with the FAO in determining seed requirements and developed an emergency distribution plan.

The Department for the Prevention and Combat of Natural Calamities (DPCNC) coordinated the activities of the various government ministries involved in disaster relief. All food operations were centralized in the Ministry of Internal Trade. An informal government emergency team, comprised of several ministries, was later established to work with the U.N. in coordinating international assistance.

Using international donations, the Ministry of Health combated cholera and other diseases with a program which included laboratory testing, administering antibiotics, vaccinating high risk populations, and chlorinating water supplies. The government also supplied health centers with medicines and created special rehydration centers in remote areas.

The Minister of Internal Trade and the Director of Marine Transport worked closely with the UNDP/UNDRO/WFP resident coordinator in Mozambique in carrying out a program to ship food supplies from Maputo to Inhambane and thence to smaller ports in remote areas (Nova Mambone, Inhassoro, and Vilanculos). The program, which was designed to overcome the difficult logistical and security problems of delivering food to drought victims by overland routes, required the chartering of a transport vessel and a smaller landing craft. The Ministry of Transport provided navigational assistance for the landing craft. Inland transportation from ports was undertaken by the government, which also bore the costs of loading and unloading. Some 7,555 MT of emergency food were transported in the first two months of the program. The GPRM also provided distribution centers in the port areas as well as camps for displaced persons in Gaza and Inhambane provinces.

With support from external donors, the Mozambique Christian Council (MCC), representing the Protestant churches in Mozambique, had donated 8,000 MT of food by October 1983, including 391.35 tons of maize worth \$48,919. The MCC assisted the GPRM Department for the Prevention and Combat of Natural Calamities in channeling relief assistance.

The Mozambique Red Cross (MRC) was also active in the relief effort. MRC worked with LORCS to conduct a general feeding program for some 160,000 persons in Maputo, Gaza, and Inhambane Provinces. In addition, the MRC set up a station in Manjacaze, Gaza Province, to provide intensive feeding for seriously malnourished mothers and children. This station also served as a training center for volunteers and health workers. Foodstuffs provided by the MRC included 97.93 tons of beans valued at \$30,358.

#### **Assistance Provided by the United States Government**

At the request of the GPRM, the U.S. Charge d'Affaires traveled to the town of Macuacua (Gaza Province) on October 6, 1983, to observe the condition of Mozambicans recently liberated from areas controlled by the anti-government MNR. Among the desperately needy recent arrivals were many severely malnourished abandoned children.

Based on his personal observations and reliable reports that similar conditions could be found in other areas of Mozambique, the Charge determined on October 11 that a disaster existed in Gaza and Inhambane provinces. He obligated \$25,000 from the Ambassador's disaster assistance authority and this sum was donated to the Mozambique Christian Council for the purchase of food and other relief supplies for the reported 10,000 uprooted and/or abandoned children in Gaza Province. The MCC was expected to use the money to buy 15 MT of powdered milk in South Africa.

The Charge requested expert assistance in assessing the magnitude of the disaster and suggesting an appropriate USG response. OFDA accordingly arranged for a physician from the Centers for Disease Control (CDC) to conduct an onsite nutritional and medical survey of children in the affected areas of Gaza and Inhambane. The CDC expert concluded that a potentially disastrous health and nutritional crisis existed in the two provinces. His recommendations included supplemental feeding for the most vulnerable as well as the provision of medical supplies, shelter and clothing, and improved sanitation. He also suggested continued surveillance of the situation.

In response to another request from the U.S. Embassy in Maputo, OFDA provided \$98,500 in disaster assistance funds in support of the UNDRO/WFP program to transport food by sea to isolated areas along the coast. U.S. funds were contributed toward the cost of chartering a landing craft. OFDA also approved a \$1 million grant to CARE to finance the proposed Logistical Support Unit (see below under U.S. Voluntary Agencies) and helped the Red Cross to airlift relief supplies to the interior of Manica Province with a grant of \$130,000.

A total of \$1,010,800 was obligated for use in Mozambique from the \$16 million Congressional Appropriation for Africa in FY 1984. This included a grant to CARE for the purchase of trucks (\$763,000) and a grant to World Vision International for a food distribution program in Tete Province (\$247,800). (These figures are not included in the total USG assistance as they appear in the section **Disaster Relief in FY 1984** — Special Appropriation for Inland Transport.)

In addition to the U.S. Charge's visits to Gaza, Inhambane, and Tete provinces and the CDC assessment, two representatives of A.I.D.'s Africa Bureau spent 12 days in Mozambique in December 1983 to evaluate the impact of the food emergency and study requirements for food assistance, and an OFDA disaster relief officer visited Mozambique in May 1984.

The bulk of USG assistance has taken the form of food commodities (corn, rice, wheat, and dairy products) provided by the Office of Food for Peace.

FY 1984 approvals included 7,468 MT of commodities through the WFP and 51,610 MT bilaterally. Commodity cost and ocean freight totaled \$15,339,800.

In FY 1985, the USG has provided 10,000 MT of corn through World Vision International and another 42,250 MT of corn bilaterally. The value of FY 1985 shipments (as of January 1985) was \$14,148,700.

The GPRM agreed to use the local currency generated from the sale of P.L. 480 Title II foods to expand agricultural production, especially in the private sector, or to support relief and rehabilitation activities.

#### Summary of USG Assistance

Ambassador's authority . . . . .	\$25,000
Travel and administrative expenses of a CDC expert . . . . .	\$4,400
Support for UNDRO/WFP sea transport program . . . . .	\$98,500
Grant to CARE for logistical support unit . . . . .	\$1,000,000
Grant to LORCS . . . . .	\$130,000
Total OFDA assistance . . . . .	\$1,257,900
Value of P.L. 480 Title II commodities (FY 1984) . . . . .	\$15,339,800
Value of P.L. 480 Title II commodities (FY 1985) . . . . .	\$14,148,700
<b>TOTAL</b>	<b>\$30,746,400</b>

#### Assistance Provided by U.S. Voluntary Agencies

CARE — established a logistical support unit (LSU) to coordinate the field distribution of emergency food and other relief supplies to the drought victims and to provide on-the-job training to Mozambique nationals for the operation of the LSU.

CWS — appealed for \$150,000 in support of the WCC appeal for \$500,000; forwarded \$68,200 directly to the Mozambique Council of Churches and \$5,000 to UNDRO.

LWR — gave \$100,000 in cash to support the Lutheran World Federation appeal (presumably included in the LWF's listed contribution).

Mennonite Central Committee — provided 8,500 tons of maize valued at \$1,742,500.

World Vision International — operated a program in Tete Province near the Zimbabwe border, providing food (from the Netherlands, initially) and medical services to 100,000 of the most seriously affected drought victims; supplied diesel fuel (12,000 liters per month for seven months, partly financed by Norway) and trucks to carry out the operation.

**TOTAL      \$1,815,700**

### **Assistance Provided by the International Community**

#### **International Organizations**

Caritas Internationalis — 300 tons of maize, 100 tons of beans, and cash, all valued at \$108,919; additional cereals and canned food, value not reported.

EEC — \$83,340 in cash through German Caritas; technical assistance (four medical personnel and a logistics expert) for five months, rental of four vehicles, local costs related to the relief program, and cash grants through PVO's, all valued at \$1,530,000; support of German Red Cross program in Inhambane; \$1,565,217 through UNHCR and Commission Delegation for Mozambican refugees in Zimbabwe; 20,000 tons of cereal to WFP (\$3,248,000) (presumably included in WFP's listed contribution); beans (\$812,000); additional 42,000 tons of wheat, value not reported.

FAO — launched an international appeal for assistance to drought-stricken countries of Africa; developed a crop rehabilitation program for Mozambique, including seed procurement; gave seeds valued at \$500,000; sent a team to review food requirements.

ICRC — sent a mission to Mozambique in January/February 1983 to confirm seriousness of the cholera epidemic in Gaza Province.

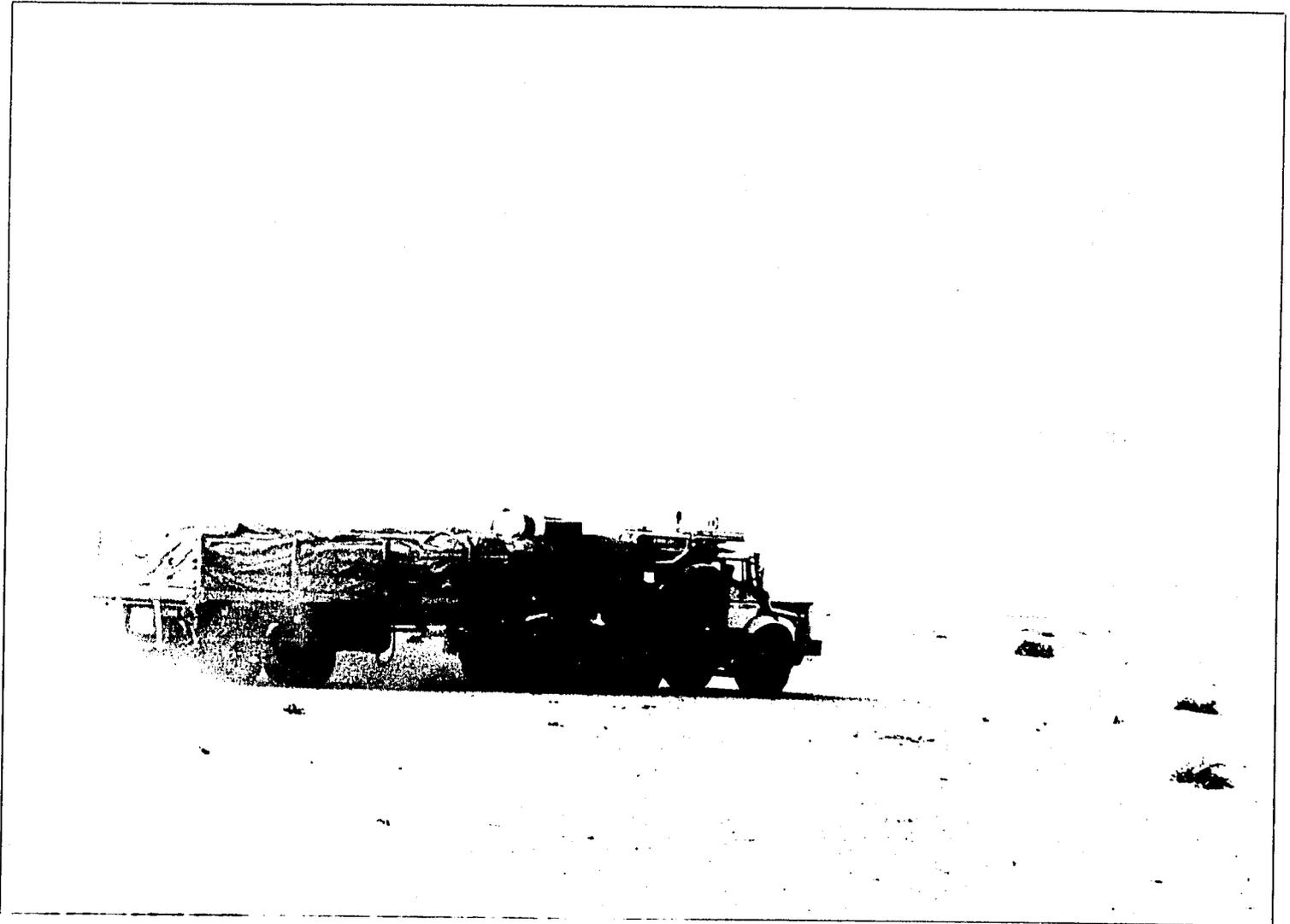
LORCS — issued appeals for medical supplies and emergency food; provided 3,000 feeding bowls and 300 Red Cross tunics, value not reported; conducted a feeding program in Maputo, Gaza, and Nampula provinces, in cooperation with the MRC; contributed 2,548 MT of maize, 340 MT of beans, and 2.3 MT of freeze-dried products for the Manjacaze intensive feeding center for four months, value not reported.

LWF — launched an international appeal for \$391,000; donated 1,036 tons of maize worth \$320,000 and 2,000 liters of oil, value not reported; provided inland transportation costs (\$60,000) for 4,500 tons of wheat from the Danish government.

OPEC — donated 3,000 tons of cereals, value not reported.

UNDP — assisted the GPRM in a borehole project for Gaza, Inhambane, Sofala, and Manica provinces; contributed \$230,000 in cash for the water supply project and planned to spend an additional \$3.2 million on water recovery projects.

UNDRO — supported the GPRM appeal for assistance for the northern provinces in 1982 and, in January 1983, launched an international appeal for relief for the central and southern provinces; extended the appeal to include medical items, equipment and technical assistance for the Maputo water supply and rural well-drilling projects, and cash assistance for the sea-borne food delivery system; donated \$25,000 in cash; headed a U.N. interagency mission to Mozambique in January 1984 to assess the situation and identify unmet needs and measures for rehabilitation. The U.N. planned to assign a permanent representative to Tete Province to help monitor the emergency and administer U.N. assistance.



UNHCR — planned a program to assist Mozambican refugees in Zimbabwe.

UNICEF — donated medicines and medical supplies valued at \$460,000 as well as cooking utensils, value not reported; sent a transport consultant to Tete Province to work with local authorities and two experts from CARE in identifying transport needs. UNICEF also planned to provide a transportation expert for a three month period starting in January 1985 to suggest ways to rehabilitate the truck fleet

U.N. Special Account Mozambique — provided \$101,000 in cash for the water supply project.

WCC — launched an appeal for \$500,000 to assist the Mozambique Christian Council in purchasing food and agricultural inputs and forwarded \$384,000 (as of September 1983). gave \$69,000 in medicines for cholera relief.

WFP — arranged a coastal shipping program and provided a transport expert to travel aboard the relief vessels; provided 50,820 MT of maize, 3,600 MT of pulses, and 25 MT of freeze-dried products (as of February 2, 1984), all valued at \$12,243,000; gave additional food assistance, including an intensive feeding program (\$747,800), a program for 75,000 persons in Tete Province (\$753,000), and food for Mozambican refugees in Zimbabwe (\$859,300).

WHO — prepared a list of medical requirements in cooperation with the GPRM and purchased supplies valued at \$183,486 (using cash from the Government of Finland and credited to Finland); gave 100,000 liters of oral rehydration salts for cholera treatment, with a total value of \$23,500.

### Governments

Australia — 4,000 tons of rice worth \$25,496 and an additional 4,138 tons of rice, value not reported; \$25,000 in cash through UNDRO.

Austria — 14,000 tons of maize, value not reported; \$1,225,000 in cash.

Belgium — \$56,900 in cash through Socialist Solidarity Belgium for the purchase of tools and seeds (presumably included in the listed contributions of that organization); planned to send 2,000 tons of wheat, value not reported.

Canada — \$293,680 in cash through local and international voluntary agencies; 58,225 MT of food valued at \$15,270,000 (1980 to 1984).

Denmark — 7,500 tons of wheat and 100 tons of milk powder, all valued at approximately \$1,410,000, and 29,200 tons of maize, value not reported; \$23,645 in cash through LORCS.

Finland — \$181,818 in cash through WHO and \$131,580 in cash to the Finnish Red Cross; milk powder valued at \$782,609.

France — cash and in-kind assistance for the water supply project, with a total value of \$265,000; three trucks at a cost of \$104,250; 3,800 tons of cereals through WFP; 2,000 tons of wheat, 10 tons of seeds, emergency food, medicines, and tools; value not reported.

Germany, Fed. Rep. — 9,000 tons of maize (of which 3,000 tons were valued at \$525,000); \$20,000 in cash through UNDRO for the coastal shipping operation; \$72,300 in cash through the Embassy in Maputo; corn seeds worth \$38,500; \$153,850 in cash through Caritas and Deutsches Diakonisches Werk for the drought and flood disasters; \$20,770 in cash through Deutsche Welthungerhilfe; \$71,762 in cash to ICRC.

Greece — \$3,000 in cash for the coastal shipping program.

Italy — 7,000 tons of rice and 1.1 tons of medicines and tools, all valued at approximately \$2,205,000; 10,000 tons of maize worth \$5,111,821; \$20,000 in cash to UNDRO for the coastal shipping program and an additional \$263,157 cash grant to UNDRO; \$18,750 for internal transport. Italy planned to provide another 10,000 tons of rice, value not reported.

Ireland — \$16,762 in cash through UNDRO.

Japan — 7,614 tons of rice, with a partial value of \$1,412,000.

Netherlands — 6,000 tons of wheat worth \$1,538,460; cash and in-kind assistance for the water supply project, all valued at \$1 million; 5,000 tons of flour and 10,000 tons of maize with a total value of \$3,340,000; over 20 trucks for Sofala and Manica provinces, value not reported. The Netherlands planned to provide 31,000 tons of maize in 1984 (may include the 10,000 tons listed above).

Norway — 250 tons of fish valued at \$263,890; \$67,568 in cash through UNDRO; services of a shipping expert valued at \$20,000; hardened fat for margarine worth \$633,000; support for transporting maize from Zimbabwe, valued at \$1,265,800; \$135,000 for the purchase of diesel fuel for relief operations in Tete Province; \$2,285 in cash through the Norwegian Red Cross for the transport of 500 kg of fish protein concentrate for Manica Province; \$712,510 in cash through local and international voluntary agencies.

Portugal — medicines, food, and water supply equipment, all valued at \$318,360; canned fish worth \$43,000.

Soviet Union — 10,000 tons of rice, value not reported; 500 kg of medicines and medical supplies valued at \$12,500; three cars, two motorcycles, tents, agricultural tools, clothing and footwear, with a total value of \$280,000; domestic goods worth \$12,000,000.

Spain — 2,000 tons of wheat, value not reported.

Sweden — 8,160 tons of wheat valued at \$1,466,666; inland transportation project, including the provision of 32 trucks, spare parts, mobile workshops, and a road diesel tank unit, partially valued at \$1,746,000, follow-up program to train personnel in transport logistics and administration; seeds worth \$200,000.

Switzerland — \$23,100 in cash; 100 family tents at a cost of \$20,833; 53 tons of dairy products, valued at \$230,090, for distribution through various voluntary agencies; 50 tons of dried milk worth \$252,780.

United Kingdom — 3,000 tons of maize, value not reported, and 11,500 tons of cereals valued at \$2,238,000; protein-enriched food, transport and distribution costs, and cash for seeds, all valued at \$292,000; \$196,078 in cash for relief items for Tete Province and an additional \$196,078 for the purchase of eight trucks and spare parts for use in that province; medical supplies valued at \$92,810 for Inhambane Province; \$149,750 in cash.

Vatican — \$35,000 in cash (of which \$20,000 went to Caritas).

Vietnam — 2,000 tons of rice, value not reported.

Zimbabwe — 25,000 tons of maize valued at \$3,535,353; camps to shelter Mozambican refugees in Zimbabwe.

#### Voluntary Agencies

Arbeiter — Samarita Bund (Germany, Fed. Rep.) — 17.1 tons of food and relief supplies through UN-DRO, value not reported.

Belgium Socialist Solidarity, Norske Folkenjelp (Norway), and Arbeiter — Samarita Bund (Germany, Fed. Rep.) — purchased jointly a truck/trailer, food, and seeds at a cost of \$170,068.

Christian Aid (U.K.) — \$41,840 in cash to Mozambique Council of Churches.

Denmark Red Cross — 3,000 tons of wheat (exchanged for maize), value not reported.

Finland Red Cross — 50 MT of dried fish, value not reported, and \$82,600 in cash.

Germany, Fed. Rep. Red Cross — 2,000 tons of maize worth \$350,000; 99,177 kg of dried fish, value not reported; a relief program (with EEC support) in Inhambane; food, medicines, tents, vehicles, etc. for the relief operation, all valued at \$1,470,180.

Norway Red Cross — dried fish valued at \$780,000; two trucks, value not reported, and \$59,700 in cash for operational costs of the trucks.

Oxfam (U.K.) — Land Rover for use of the District Medical Officer in Vilanculos, and seeds, with a total value of \$81,600; medicines, food, clothing, seeds, and another vehicle, all valued at \$171,831; training program for community health workers in Inhambane.

Sweden Red Cross — 76 tons of enriched flour valued at \$44,570; \$202,520 in cash; services of a nutritional delegate, value not reported.

Switzerland Red Cross — \$27,523 in cash; approximately 10 tons of milk powder and services of two delegates, value not reported.

United Kingdom Red Cross — \$1,517 in cash.

**TOTAL      \$89,556,686**

**Drought****Niger****Date**

November 1983 through  
November 1984

**Location**

Countrywide; Diffa, Agadez,  
and Tahoua most affected

**No. Dead**

Not reported

**No. Affected**

2,000,000

**Damage**

50% reduction in agricultural  
production and livestock  
population; 12% decline in  
gross national product

*(Please note: This  
disaster was still active  
at the time of  
publication.)*

**The Disaster**

Normally self-sufficient in food production, Niger in 1983 experienced its worst crop shortage since the great Sahel-wide drought of the early 1970s. The northern departments of Agadez and Tahoua were the most affected as these normally marginal areas did not produce enough range grasses to support the area's large cattle herds.

After several months of sporadic and insufficient rainfall, Niger suffered its worst harvest in 15 years. The deficits in October and November 1983 were localized, however, and surpluses in Niamey, Maradi, and Zinder Departments were adequate to compensate for shortfalls in northern departments. Falling cattle prices, however, left the herder populations without a source of income and few financial reserves to face the coming year.

As the 1984 harmattan moved into what are normally its last weeks, farmers in the south and marginal areas of the north prepared their fields for planting. The rains required for the millet and sorghum crops did not arrive on schedule, however, and the rains which did arrive were short, sporadic, and insufficient to sustain new seedlings. Throughout July, August, and part of September, farmers planted and replanted. Each time, their fields were "burned" by the sun because the rains arrived too late. Some farmers planted as many as seven times, hoping to reap at least one good harvest and each month the disappointment increased. In October, the rains halted and seed reserves were exhausted.

**Action Taken by the Government of Niger (GON)**

Unlike many other drought-affected Sahelian countries, the GON had pursued an active policy of promoting domestic grain production. After the great drought of the 1970s, the GON established a grain marketing agency (OPVN) to stabilize grain prices throughout the year and maintain stocks to meet emergency needs. OPVN purchased grain from the farmers at harvest and sold it back to the population throughout the year at a flat price. OPVN also maintained a large emergency stock to be used in the event of a harvest deficit.

On November 4, 1983, the Minister of Rural Development called a meeting of the international donor community. He reported that although food assistance needs had doubled as a result of the disastrous 1982/1983 harvest in Diffa Department, stocks maintained by OPVN were adequate to meet the 30,000 MT deficit. Transport funding re-

mained an outstanding need, however. One month later, the estimate of shortfall was revised to 70,000 MT, yet the combination of OPVN stocks, domestic purchases, and unrecorded imports were expected to be sufficient.

By August of 1984, it became clear to the GON that the poor harvest of 1982/83 was not an isolated event. The sporadic rains continued to thwart Nigerien farmers in every region of the country. OPVN stocks continued to be depleted during this typically lean period of the year (pre-harvest) but with less and less prospect of replenishment. The potential for a large-scale crop failure received attention from the local village level to the office of the President. GON ministerial missions traveled throughout the country to obtain early estimates of the upcoming harvest in October-November.

President Kountche, who came to power in 1974 as a result of the previous government's failure to feed the population during the 1970s drought, named the Etat-Majeur of the GON Armed Forces responsible for mobilizing and coordinating all available resources to ensure that no one would go hungry. The GON regularly advised the USG and other donors of the situation and on August 31 convened a meeting of donors. The Minister of Rural Development described the situation as bleak, especially with regard to livestock, and accepted an offer from the UN's Food and Agriculture Organization to conduct a multi-donor assessment of the situation.

The Ministry of Rural Development was asked to provide comprehensive assessments of the locations and magnitude of the crop failures, region by region. Each prefecture prepared detailed tabulations of the numbers of cattle lost, hectares barren, and families affected. OPVN was directed to continue selling grain at its distribution centers, which would normally be closed during the harvest season.

In September, the President established an Inter-ministerial Committee to address the drought and its effects and, on September 20, officially requested food assistance from the USG. The GON requested an initial tranche of 15,000 MT to be delivered in equal parts of 2,000 MT to each of the seven departments, except that Zinder would receive 3,000 MT because of its growing population of displaced herders.



At the same time, the GON initiated a major nationwide program to cultivate areas surrounding small bodies of water. Out-of-season cropping programs were established in each department to serve two purposes: the farming projects would generate a small but valuable harvest of food, and they would provide work to the many herders and farmers who were destitute because of the drought. Wells were sunk in areas where the water table was close to the surface and farmers/herders were supplied with seeds, tools, and technical assistance.

On another front, the GON undertook efforts to assist the herders, all of whom were encouraged to migrate south following their traditional transhumance patterns. Small-scale programs to transport cattle by truck from northern departments to the south assisted those herders whose cattle would not survive the long migration across barren fields. Later the GON began to buy cattle from the herders through a price support program. The purchased cattle were slaughtered and their meat preserved through a natural drying process (sun and wind) for later use as a supplementary food for the nomadic herders. This program provided cash to the herders, enabling them to buy food and other items and maintain their independence.

The GON maintained regular and open communications with the international donor community throughout the early assessment and relief phases of the drought. Each of the responsible ministries was committed to relieving the effects of the drought and coordinating and facilitating international aid and its distribution.

#### **Assistance Provided by the United States Government**

As early as November 1983, when the GON first alerted the donor community of its increasing harvest deficits, the USG Mission in Niamey expressed its fears of a large-scale food shortage to Washington. In response to the GON's needs, USAID/Niamey requested and received permission to donate 5,000 MT of P.L. 480 Title II food, left over from an FY 82 program, to the GON for distribution in Diffa.

By February 1984, the magnitude of the drought began to exceed Niger's ability to respond. U.S. Ambassador William Casey determined that a disaster existed and made available \$25,000 from the International Disaster Assistance account to aid the Nigeriens in transporting dried milk powder to affected areas in the north.

The U.S. Mission in Niamey continued to monitor agricultural and grazing conditions, reporting regularly to OFDA and other bureaus in Washington. By July, USAID was predicting dramatic shortfalls in grain production for the October/November harvest. Declining market prices for all types of livestock were also reported. A Food Status Monitoring Unit established within the USAID Mission's Agricultural Development Office conducted field assessments of market and pasturage conditions in principal and secondary trading centers in August. The unit collected and analyzed data obtained from personal inspections, other AID projects, and international donor projects, voluntary agencies, and the GON Ministry of Rural Development.

In early September, AID's Assistant Administrator for Africa visited Niger and met with President Kountche to discuss the magnitude of the unfolding problem. OFDA offered and the U.S. Mission in Niamey accepted the services of a two-person team to conduct a nationwide assessment of the food shortage and develop recommendations for a U.S. response. The team was scheduled to arrive the end of September.

Before the team arrived, however, Ambassador Casey made a second disaster determination on September 21, in response to the GON's formal request for assistance. A first tranche of 15,000 MT of red sorghum was pledged to the GON, as well as financial assistance to meet internal transport costs. OFDA gave the GON \$1.78 million from its special appropriation for internal transport of emergency food in Africa. (This figure is not included in the total USG assistance as it is noted under the section **Disaster Relief in FY 1984 — Special Appropriation for Inland Transport.**) In addition, the U.S. Mission established a Drought Relief Policy Committee headed by the Ambassador and consisting of the AID Director, USIS Director, the Deputy Chief of Mission, and the AID Deputy Director. A Drought Relief Action Unit was also created to provide recommendations to the Policy Committee and to effect the Policy Committee's recommendations. The AID Deputy Director headed the Action Unit.

On September 30, the two-person team contracted by OFDA arrived in Niamey to assess the situation, evaluate GON mechanisms to respond, identify other donor actions, and make recommendations for a U.S. response to the potential disaster. Through discussions with local and national government officials, farmers, and voluntary agency representatives, the team performed a comprehensive assessment of conditions in each region. The team's recommendations to the U.S. Mission included graduated increases in food deliveries, a health/nutritional assessment of the most affected populations, and contingency plans for shelter and medical needs in the event that large numbers of people were displaced.

By the middle of December the U.S. had pledged a total of 60,000 MT of sorghum to Niger. During November 1984, a CDC Nutrition Surveillance team arrived in Niger and trained three teams of GON Ministry of Health (MOH) personnel in health surveillance and reporting methods. Data on the health of vulnerable population groups was collected, and a system was established to continue the monitoring and record-keeping over a period of several months. The MOH selected Zinder and Tahoua Departments for the initial surveys and the three MOH teams conducted similar sampling in the other five departments to develop a national profile of conditions. The preliminary results were analyzed and recommendations were reported to the MOH and USAID. The CDC team planned to conduct a follow-up visit in early 1985.

To monitor and coordinate the arrival and distribution of the emergency food, USAID hired additional temporary staff, including two food monitors, and acquired two 4-wheel drive vehicles for their use. USAID also funded three large-scale projects coordinated by voluntary agencies to meet the emergency needs of the displaced population. Using the Ambassador's disaster authority (second declaration) for start-up funds, USAID provided grants of \$12,500 to CARE and \$12,500 to Africare to conduct complementary projects in the Tanout area. The CARE project aided 12,000 persons and provided meningitis vaccine to 25,000 children. CARE procured shelter matting materials, sleeping mats, blankets, and soap; cooking equipment for a nutrition center; and medical supplies to augment existing village health and midwife programs. Also, two 4-wheel drive vehicles were repaired. An additional grant of \$218,869 was awarded to fund this project fully, and \$5,638 million worth of P.L. 480 Title II food (2,500 MT of corn-soya mix, 1,208 MT of vegetable oil, and 1,890 MT of non-fat dried milk) was provided.

Africare managed a Food for Work project in Tanout to complement the CARE program. Utilizing approximately 600 MT of GON food stocks, Africare provided technical assistance, tools, seeds, fertilizer, materials for well construction, and staff for the FFW projects in the off-season irrigation sites. USAID provided a grant of \$222,851 in addition to the original \$12,500 to implement this project.

Finally, USAID reoriented its existing livestock management project to respond to the conditions created by the drought. The program was re-directed to provide emergency feeding, shelter, blankets, and medical attention to those who lost all or most of their cattle; augment and extend village health worker support to the herders; maintain supplementary maternal and child feeding; and expand the emergency dried meat program for supplementary protein feeding. This program was administered by USAID under an existing program with Tufts University, at a cost of \$175,000.

**Summary of USG Assistance**

Ambassador's authority, used to transport milk (first declaration) . . . . .	<b>\$25,000</b>
Ambassador's authority for emergency programs by CARE (\$12,500) and Africare (\$12,500) (second declaration) . . . . .	<b>\$25,000</b>
TDY of drought assessment team . . . . .	<b>\$22,469</b>
OFDA funds for CDC team . . . . .	<b>\$10,532</b>
Africa Bureau funds for food monitors, 4-wheel drive vehicles, and maintenance . . . . .	<b>\$190,000</b>
Africa Bureau funds for logistics support for CDC team . . . . .	<b>\$20,000</b>
CARE emergency mother and child health program . . . . .	<b>\$44,368</b>
P.L. 480 Title II food for CARE project . . . . .	<b>\$5,638,000</b>

CARE Tanout emergency project . . . . .	\$218,869
Africare Tanout emergency FFW/feeding project . . . . .	\$222,851
Emergency support program for nomadic herders . . . . .	\$175,000
60,000 MT of P.L. 480 Title II sorghum, valued at . . . . .	\$7,791,100
Ocean freight . . . . .	\$13,650,000
Internal transport . . . . .	\$2,550,000
Total OFDA funds 1984 . . . . .	\$47,469
Total OFDA funds 1985 . . . . .	\$696,620
<b>TOTAL (as of January 1985) . . . . .</b>	<b>\$30,583,189</b>

#### Assistance Provided by U.S. Voluntary Agencies

Africare — expanded agriculture/nutritional programs into Illela and Diffa; administered Tanout emergency FFW feeding project with CARE.

CARE — provided \$10,000 for transport of seeds donated by France; submitted a FFW proposal for Bouza to WFP; administered USAID/CARE maternal and child health program with GON; administered Tanout emergency project with Africare, and contributed 8,998 MT of food.

CWS — provided 10,000 blankets and approximately 50 MT of food and \$10,000 in cash.

LWR — accelerated garden project activities in Madoua area; pledged \$100,000, and provided blankets, quilts, and soap.

Sudan Interior Mission — contributed 40 MT of grain, provided food to 25 villages in Maradi area.

**TOTAL \$120,000**

#### Assistance Provided by the International Community

##### International Organizations

EEC — emergency aid included provision of 10,800 MT of cereals, of which approximately 5,000 MT was purchased in West Africa and was valued at \$575,000, for use in FFW programs; 3,000 MT of corn and 5,000 MT of cereals for sale; 200 MT of powdered milk, valued at \$20,000, for free distribution (this was purchased from the GON milk

monopoly to be replaced later); \$22,000 to purchase and slaughter 700 cows for dried meat processing and subsequent free distribution; \$32,000 to support local transport and distribution costs of EEC and other donated grain to secondary points; and \$32,000 to the Niger Red Cross for blankets (locally purchased), medicines, and vaccines.

FED — 7,450 MT of corn, 5,000 MT of cereal, and 5,000 MT of milk/sorghum.

World Bank — provided an emergency transport grant of \$200,000.

WFP — 6,462 MT of sorghum, valued at \$1,615,000, and 144 MT of milk valued at \$50,000, and pledged 25,000 MT of mixed commodities.

##### Governments

Belgium — signed accords totaling \$1,915,333 to undertake three drought and food related projects.

Canada — purchased trucks for GON emergency food distribution program and pledged to reinforce Zinder-Diffa section of the Route National at a cost of \$33 million.

China, Peoples Republic — contributed medical supplies and equipment valued at \$21,710.

France — provided 1,000 MT of seeds, of which 300 MT were airshipped at a value of \$150,000; contributed 2,500 MT of wheat valued at \$375,000; and signed three accords totaling \$1,057,445.

Germany, Fed. Rep. — 5,000 MT of sorghum valued at \$625,000; and pledged \$333,333.

Netherlands — contributed 5,000 MT of sorghum valued at \$1,250,000; 5,000 MT of maize valued at \$750,000; 2,000 MT of powdered milk (some sent through CARITAS) valued at \$300,000; an estimated 40 to 50 trucks valued at \$500,000; and spare parts, lubricants, oil, gasoline, and warehousing valued at \$500,000.

**TOTAL \$43,323,821**

**Drought and Food Shortage**

# Sao Tome and Principe

**Date**

Late 1983-early 1984

**Location**

Countrywide

**No. Dead**

None reported

**No. Affected**

Entire population of 93,000, 40,500 seriously

**Damage**

Drought induced crop losses resulted in food shortages and increased incidences of malnutrition

**The Disaster**

Drought conditions throughout 1983 caused crops to fail and led to severe food shortages in October and November of that year. The regions hardest hit by the drought were the east and northeast sections of Sao Tome and the central portion of Principe. Due to financial constraints, the government was unable to increase commercial cereal imports to meet the crisis.

**Action Taken by the Government of Sao Tome and Principe (GSTP) and the Local Red Cross**

To overcome the food shortfall, the GSTP sought help from the international community. The local Red Cross also made an appeal for medicines and vitamins for children whose health was affected by inadequate food supplies. The Sao Tome Red Cross distributed the medicines obtained through the appeal and also helped distribute food commodities provided by international donors. The GSTP also provided personnel to work with the Red Cross volunteers.

**Assistance Provided by the United States Government**

In response to the Red Cross appeal for medical assistance, the U.S. Ambassador on January 18, 1984 authorized up to \$25,000 in disaster assistance funds for the purchase of medicines and vitamins. A total of 98 boxes of antibiotics and vitamins, procured in part from a local pharmaceutical wholesaler and in part through the American Embassy in Bonn, Germany, were presented to the Sao Tome Red Cross. The cost including air transport totaled \$20,860.

The USG also contributed 1,440 MT of P.L. 480 Title II food commodities (700 MT of cornmeal, 200 MT of non-fat dry milk, 300 MT of rice, and 240 MT of vegetable oil) to a LORCS-sponsored food program. The cost of the food was \$519,800 and the ocean freight was \$303,400. In addition, 850 MT of rice and 300 MT of soy-fortified cornmeal (the latter diverted from stocks in Chad) were donated to the WFP program in Sao Tome. The food had a value of \$334,000 while the ocean freight cost \$96,500.

Total OFDA assistance . . . . . \$20,860

Total Food for Peace assistance . . . . . \$1,253,700

**TOTAL \$1,274,560**

**Assistance Provided by U.S. Voluntary Agencies**

American National Red Cross — sent a delegate to help oversee the LORCS food program; approximate value, \$12,000.

**TOTAL \$12,000**

**Assistance Provided by the International Community**

**International Organizations**

EEC — provided \$67,258 through LORCS.

LORCS — issued an appeal for 4,000 tons of foodstuffs to meet the needs of 40,500 persons and conducted the ensuing food program.

WFP — sponsored a six-month food aid project (2,000 tons of cornmeal and rice, valued at \$721,250) and provided \$20,000 to defray up to 50% of the cost of distribution in-country.

**Voluntary Agencies**

Denmark Red Cross — 500 tons of wheat, valued at \$127,840, through LORCS.

Germany, Fed. Rep. Red Cross — 24 tons of sugar, 43 tons of milk powder, and 287 tons of beans, valued at \$201,377, through LORCS; also sent two delegates.

Norway Red Cross — contributed two prefabricated houses, one Land Rover and spare parts, ten stretchers, miscellaneous relief supplies, and the services of a delegate, all valued at \$97,045. Food commodities (120 tons beans, 120 tons vegetable oil, 64 tons milk powder, and 12 tons sugar) and 40 tons of soap were also provided at a cost of \$404,090. Also made a cash donation of \$156,000.

Soviet Union — medical kits, medicines, and stretchers, valued at \$22,082.

Sweden Red Cross — gave an unspecified amount of vegetable oil, valued at \$8,636, and contributed \$12,455 for transport costs.

United Kingdom — two Land Rovers and spare parts valued at \$28,868.

**TOTAL \$1,866,901**

**Drought****Senegal****Date**

Summer 1983-Spring 1984

**Location**

Most affected were the departments of Fleuve, Louga, Diourbel, and Fatick.

**No. Dead**

Not available

**No. Affected**

1,200,000

**Damage**

The drought contributed greatly to serious food shortages. Reductions for the 1983 harvest were estimated as follows: peanuts, 45%; millet/sorghum, 45%; cotton, 20%. The corn and mabe (beans and cowpeas) crops were also reduced.

**The Disaster**

Senegal's 1982-83 harvest was mediocre because agricultural inputs such as fertilizer, seeds, and farm implements were reduced due to the government's financial difficulties and because little rain fell in the northwest region. By late November 1983, it was apparent that the 1983-84 harvest was going to be even worse. Cumulative rainfall in the peanut and millet production areas for the 1983-84 season equaled about 20-30% of the previous year's, while the northern region also received as little as 20% of normal rainfall. USAID estimated the net food deficit at 222,000 MT, and the poor peanut crop exacerbated the country's economic problems.

**Action Taken by the Government of Senegal (GOS)**

Burdened by financial difficulties, the GOS appealed to the international community for food and funds for inland transport when the rains failed. The GOS encouraged and participated in regular meetings of donors to coordinate the food assistance. The meetings were chaired by the UNDP resident representative.

The GOS Commissariat à l'Aide Alimentaire (CAA) distributed 12,000 MT of sorghum donated by the U.S. Local trucking firms were contracted by the Senegalese government to deliver the food.

**Assistance Provided by the United States Government**

On September 12, 1983, Ambassador Murphy declared the drought and food shortage situation to be a disaster. The first priority was to provide Senegal with emergency food, and the U.S. Mission therefore requested two shipments of sorghum. A total of 50,000 MT of PL 480 Title II food was sent to Senegal for a government-to-government emergency program. The food was valued at \$7,153,900 while the ocean freight cost \$3,712,300. In addition, the USG donated 10,000 MT of sorghum to WFP for emergency distribution in Senegal. The food was worth \$1,430,800 and freight costs came to \$355,500.

OFDA agreed to pay the cost of transporting the first tranche of 12,000 MT from the port to the regions of Louga, Diourbel, and Fleuve. To distribute the food OFDA granted the CAA \$456,450, of which \$390,000 was for transport, \$36,450 was for storage, and \$30,000 was for fumigation.

CRS, which operates a mother and child feeding program in the drought-affected regions, requested an increase in regular Title II rations for the 63,630 families already in its program and funds to transport the food. In addition, since people suffering from malnutrition are more susceptible to disease, CRS also requested funds to



purchase medicines locally. The Food for Peace Office agreed to provide CRS with 531 MT of cornmeal, 496 MT of non-fat dry milk, and 124 MT of vegetable oil. The food was worth \$407,600 and ocean freight costs were \$209,400. OFDA granted \$426,704 to CRS for the rest of its program; of this amount \$118,168 was for food transport, \$252,785 was for the medicines, and \$55,751 was for personnel and administrative expenses.

Finally, OFDA gave the Senegalese government \$1,250,000 from its special \$16 million appropriation for inland food transport. (This figure is not included in the total here as it is noted under the section **Disaster Relief in FY 1984** — Special Appropriation for Inland Transport.)

Total OFDA assistance . . . . .	\$883,154
Total Food for Peace assistance . . . . .	\$13,269,500
<b>TOTAL</b>	<b>\$14,152,654</b>

**Assistance Provided by U.S. Voluntary Agencies**

CRS — expanded its regular feeding program using increased Title II rations so that the enrolled families could receive monthly rations for four rather than for two (one child and mother) or three (two children and mother).

CWS — 150 MT of rice, 100 MT of sorghum, 100 MT of corn, and 40 MT of non-fat dried milk, value not reported.

**Assistance Provided by the International Community**

\*Please note: the value of the food assistance listed below was not reported.

**International Organizations**

EEC — \$1,700,000 in cash; 5,000 MT corn, 5,500 MT broken rice, and 1,900 MT dried skim milk.

LORCS — 2,200 MT of wheat, 140 MT of non-fat dry milk, 400 MT of vegetable oil, 165 MT of dried salt fish, and 130 MT of sugar.

WFP — 14,800 MT of rice, 69 MT of non-fat dry milk, 12 MT of vegetable oil, 28 MT of dried fruit, 131 MT of canned meat, and 14 MT of dried fruit.

**Governments**

Canada — 5,000 MT of corn.

France — 10,000 MT of wheat.

Germany, Fed. Rep. of — 4,000 MT of wheat.

Indonesia — 14 MT of cornmeal, 3 MT of sugar, and 2 MT of condensed milk.

Italy — 2,500 MT of rice and 11 MT of freeze-dried food.

Japan — 5,000 MT of wheat, 6,014 MT of rice.

Kuwait — 1,628 MT of rice.

Netherlands — 8,000 MT of wheat.

**Private Voluntary Agencies**

Terre des Hommes — 30 MT of non-fat dry milk.

<b>TOTAL</b>	<b>\$1,700,000</b>
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**Cyclones****South Africa****Date**

January 30-February 2, 1984  
(Cyclone Domoina); Early  
February 1984 (Cyclone  
Imboa)

**Location**

Northern Natal, Kwazulu,  
Eastern Transvaal, Lowveld

**No. Dead**

64

**No. Affected**

500,000

**Damage**

Extensive damage to housing and personal belongings, livestock, crops, roads, and bridges occurred (estimates range from \$3-\$28 million). Sugar plantations in the Umfolozi and Pongola River valleys suffered some damage as well.

**The Disaster**

Cyclone Domoina struck Natal Province on January 30 after causing massive destruction in its sweep through Madagascar, Mozambique, and Swaziland. Torrential rains inundated northern Natal and the adjacent areas of Kwazulu and Eastern Transvaal. In the flooding which resulted, sixty people were killed, thousands were left homeless, and many roads and bridges were washed out. One week later, Cyclone Imboa caused the deaths of four people and added to the already extensive damage in the region. Scores of people were evacuated and as many as 500,000 lost some or all of their property, including homes, household and farm equipment, livestock, and reserves of food.

**Action Taken by the South African Government (SAG) and Local Authorities and Voluntary Agencies**

The local governments of Natal and Kwazulu took immediate action after the cyclones hit, forming emergency committees to coordinate relief operations. The committees were responsible for managing logistical support, delivering food, preparing weekly action reports, and arranging accommodations for the homeless.

The Natal Division of the South African Red Cross expanded the scope of its ongoing feeding program for drought victims in the region, to include those affected by the flooding. Rations consisting of mealie meal (a South African staple), soup powder, protein preparation, and margarine were provided on a weekly basis for six months. The Red Cross used its normal distribution network of community leaders, nurses, and volunteers to dispense the food from clinics, schools, and community centers. The estimated cost of the feeding program was \$100,000 per week.

The SAG formally declared northern Natal and the Kwazulu homeland a disaster area and appointed a cabinet level committee to recommend relief actions. The South African defense forces made available 25 helicopters and crews to rescue stranded victims and provided 3,000 large tents which were distributed by other SAG agencies. Approximately \$85 million was committed by the government for road and bridge repair.

**Assistance Provided by the United States Government**

On February 27, 1984 the U.S. Ambassador declared that the flooding caused by the two cyclones constituted a disaster and authorized a donation of \$25,000 to the Natal Red Cross. This amount was subsequently increased by \$75,000 and presented to the Red Cross for food, cooking fuel, and blankets.

Due to the magnitude of the flooding and ongoing drought disaster (see *OFDA FY 1983 Annual Report* and *FY 1983 Carryovers* in this report), OFDA sent a consultant to assess the two disasters and evaluate emergency relief needs at a cost of \$9,739.

**TOTAL \$109,739**

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community**

Germany, Fed. Rep. — \$21,000 to the Natal Red Cross for the flood relief program.

Germany, Fed. Rep. Church Groups — \$210,000 to the Natal Red Cross to support the feeding program.

**TOTAL \$231,000**

**Cyclone****Swaziland****Date**

January 28-31, 1984

**Location**

Entire country

**No. Dead**

53, with 12 missing

**No. Affected**

Total population, estimated at 632,000 (1983); 300-500 homeless

**Damage**

Infrastructure damage, including transportation, communications, and power systems, was estimated at over \$50 million. The private sector sugar, fruit, and tobacco industries suffered approximately \$2.5 million in damages; small-scale irrigation works, \$1.4 million; and rural water systems, \$252,000. Houses and other buildings sustained extensive damage.

**The Disaster**

Cyclone Domoina struck Swaziland on the evening of January 28 after devastating large areas of Madagascar and Mozambique. The torrential rains, as much as 50 cm in 36 hours, was the heaviest ever recorded. Flooding rivers, several of which rose 30 meters within a few hours, rushed down mountains and hills into already inundated lowlands, washing out roads and bridges and causing extensive property damage. High winds knocked out communication and power lines and ripped trees from the ground.

The almost total breakdown of communications and transportation systems made initial assessment of the situation exceedingly difficult. Over 100 bridges, 39 of them major, were damaged or destroyed, while flood waters cut gaping holes (15-18 meters deep) into many hardtop roads and rockslides rendered many other roads impassable. Two major rail lines were severed and telephone, telex, and power services were cut in rural areas.

Damage to food crops was minimal, but at least 10,000 citrus trees were destroyed and sugar and tobacco fields suffered from waterlogging. Many small dams and irrigation works sustained heavy damage as did water pumping and treatment equipment. Though exact figures are unknown, many Swazi homes, traditionally constructed of mud and rock, suffered partial or total destruction. Schools and rural health clinics were also heavily damaged by the high winds and flood waters.

**Action Taken by the Government of Swaziland (GOS) and Local Voluntary Groups**

On January 31, the Prime Minister declared a state of emergency and issued a request for international assistance to resident bilateral and multilateral donors and PVOs. The GOS then convened a disaster relief committee headed by the Minister of Interior and consisting of the ministers of Works, Power and Communications; Natural Resources; Defense; Health; and Agriculture. In the days immediately following the cyclone, committee members conducted a series of aerial surveys to assess the damage and determine rehabilitation and reconstruction measures.

The Ministry of Works, Power and Communications mobilized crews to make emergency repairs and open as many routes as possible. Crews also worked to restore downed power lines and communications systems.

A number of voluntary organizations and church and service groups provided emergency assistance in the form of temporary shelter, blankets, food, and clothing. The Swaziland Red Cross (SRC) led the effort, coordinating the activities of other groups and distributing many tons of food and other supplies.

A disaster fund committee was established by several service clubs (Rotary Club, Round Table, International Voluntary Services) to raise funds for the Swaziland Workcamps Association, a group of several hundred Swazi students who volunteer their labor on small works projects. In this case, they helped families rebuild their homes.

The Council of Swaziland Churches (CSC) also used volunteer students to carry out disaster assessments and distribute construction materials purchased by CSC as well as clothes and food donated by the students themselves. The construction materials provided by CSC were valued at \$17,000.

**Assistance Provided by the United States Government**

On January 30, 1984, in response to the Swazi appeal for assistance, the U.S. Charge issued a disaster declaration and announced the donation of \$25,000 to the Swaziland Red Cross for tents, blankets, and other immediate relief needs.

The USAID Mission in Swaziland reallocated resources from the regular development program for the cyclone relief effort. A mobile radio network funded through an AID project was made available to GOS agencies, local relief organizations, and donors to facilitate disaster-related communications. USAID engineers worked with personnel from the GOS ministries of Public Works and Agriculture and Cooperatives to assess infrastructure damage and help restore basic services. Heavy equipment, purchased under an AID loan for use in rural development areas, was employed to clear roads and construct detours. Because this assistance was provided under the regular AID program, the value cannot be itemized.

In response to a GOS Ministry of Health request, OFDA authorized two grants for the repair and rehabilitation of rural health clinics. One grant, in the amount of \$20,000, was given to the Raleigh Fitkin Memorial Hospital for the repair of eleven rural clinics under its jurisdiction. The second grant, totaling \$115,000, was made to the

GOS to rehabilitate seven health clinic water supply systems (\$95,000); repair structural damage at five clinics (\$5,000); and purchase a mobile generator to restore electrical service at several clinics (\$15,000).

**TOTAL \$160,000**

#### Assistance Provided by U.S. Voluntary Agencies

CRS — provided 60 bales of clothing valued at \$9,000.

Oral Roberts University — donated \$36,000 worth of drugs.

**TOTAL \$45,000**

#### Assistance Provided by the International Community

##### International Organizations

EEC — \$80,510 for the local purchase of tents, food, blankets and other relief supplies.

FAO — authorized \$250,000 for agricultural rehabilitation.

LORCS — issued an appeal to its national societies for \$22,300 to meet emergency needs; another appeal for \$212,500 was later issued for supplies, warehousing, transport, and support services.

UNDP — the Resident Representative coordinated relief efforts of international donors in-country and established an emergency center to collect and disseminate information about the disaster; provided \$40,000 to defray costs of helicopters used to distribute SRC relief supplies.

UNDRO — gave \$20,000 to cover the costs of air-dropping relief supplies, including those provided by the SRC.

UNICEF — sent two disaster specialists to help the Ministry of Health assess health needs; gave \$40,000 worth of medicines.

World Bank — sent a reconnaissance team of engineers to assess damages and make recommendations for long-term reconstruction.

##### Governments

Australia — \$45,045 through UNDRO.

Belgium — \$54,775 through Belgium Socialist Solidarity.

Canada — \$25,000 through LORCS and \$40,323 through UNDRO for six local PVOs. CIDA — provided \$50,000 in relief funds.

China, Peoples Rep. — donated \$40,000 to the GOS.

Denmark — gave \$94,581 through LORCS and LWF.

Germany, Fed. Rep. — \$35,714 in cash to the GOS.

Israel — provided drugs to support the regular GOS supply program and to assist cyclone victims; \$10,000 in cash for the local purchase of relief items.

Italy — gave medicines valued at \$125,000 including airfreight.

Japan — \$70,000 in cash.

Netherlands — \$68,965 in cash through LORCS.

Norway — \$60,000 through the Norwegian Red Cross.

South Africa — sent a 64-person military unit with 20 vehicles to assess damage to infrastructure and begin emergency repairs; two helicopters to aid in rescue and transport GOS officials conducting aerial surveys; and 60 large tents.

United Kingdom — sent a civil engineer to assist in road and bridge repair.

##### Voluntary Agencies

Bahai International — \$2,500 through UNICEF.

LWF — \$40,000 in cash; 300 blankets and 90 tents valued at \$18,900; 50 bags of milk powder (value unknown); and four generators (\$7,000).

Norway Red Cross — provided a delegate to assist the SRC with damage and needs assessments.

South Africa Red Cross — provided tents to the SRC.

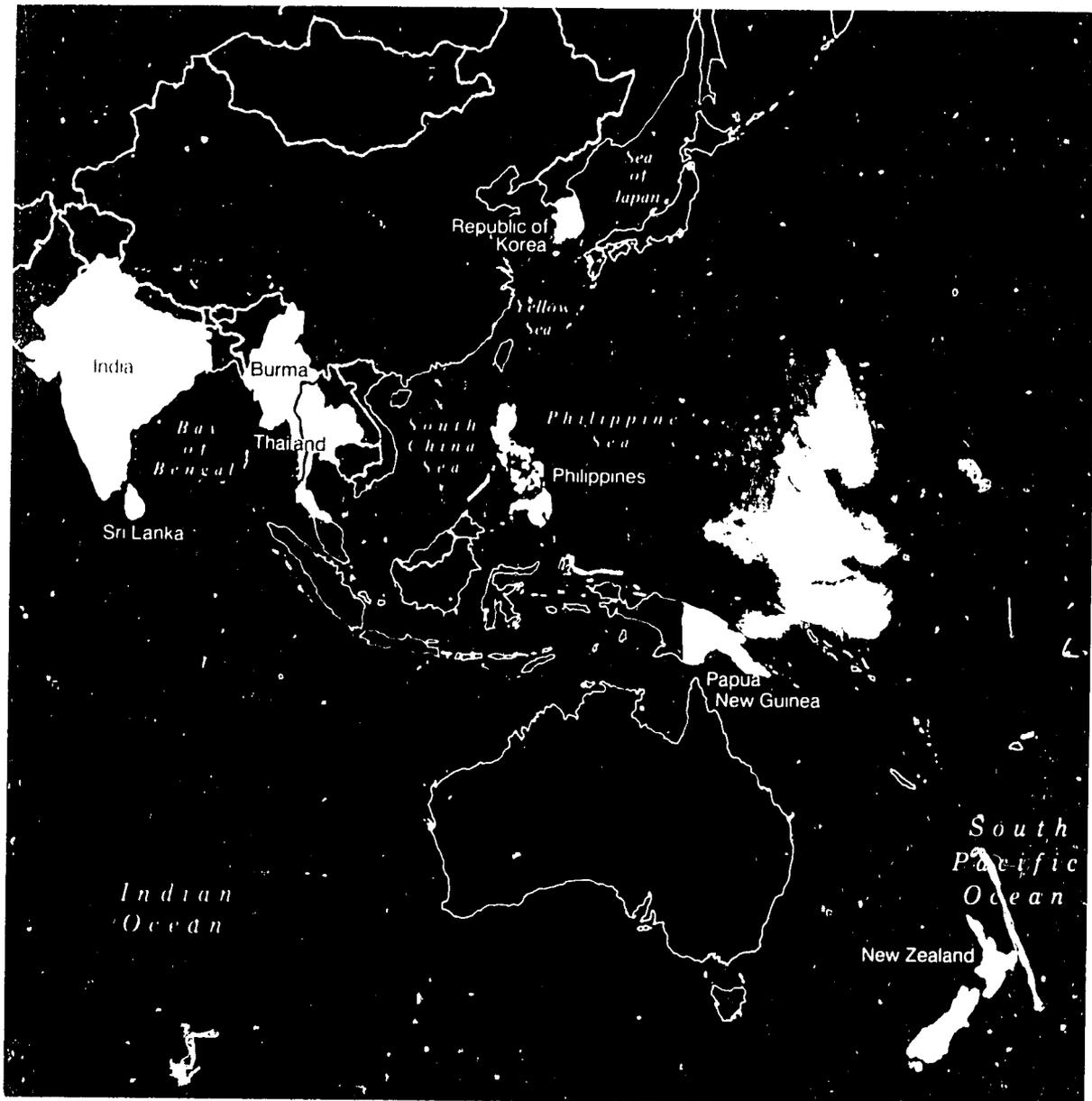
Switzerland Red Cross — \$22,321 in cash.

World Vision International — \$10,000 in cash for the purchase of 500 blankets, 35 rolls of plastic sheeting, and construction materials. Also provided two shallow-draft jet boats, fuel, and spare parts worth \$10,000.

Zimbabwe Red Cross — donated tents to the SRC with air transport provided free by the Swazi national airline.

**TOTAL \$1,495,434**

# Asia and the Pacific



Burma – Fire	58
India - Cyclone	59
Korea, Republic of – Floods	61
New Zealand – Floods	62
Papua New Guinea – Volcanic Activity	62
Philippines – Typhoons	64
Philippines – Volcanic Eruption	67
Sri Lanka - Floods	69
Thailand – Floods	70

**Fire****Burma****Date**

March 24, 1984

**Location**

Mandalay

**No. Dead**

None reported

**No. Affected**

23,000 homeless

**Damage**

2,558 buildings damaged or destroyed over 58 hectares. total value of destroyed property estimated at over \$96 million

**The Disaster**

On the afternoon of March 24, 1984 a fire broke out in the main commercial section of Mandalay. In just eight hours over 2,500 buildings, including schools, residences, businesses, theaters, and public offices, were destroyed. While no loss of life was reported, more than 23,000 people were left homeless and damage estimates were extensive.

This fire was the second to ravage Mandalay in three years, as a conflagration in May of 1981 destroyed one-fifth of the city and left 90,000 residents homeless. Burmese towns are particularly vulnerable to fires during the dry season from February to May due to urban congestion, highly flammable construction materials (teak and bamboo with thatched roofs), and the widespread use of open fires and kerosene lamps.

**Action Taken by the Socialist Republic of the Union of Burma (SRUB)**

Local firefighters responded promptly to the fire, but, inadequate water supplies and pedestrian and vehicular congestion hindered the operation. Once the fire was brought under control, Burmese authorities began to address relief needs through the Mandalay Central Fire Relief Committee. Eleven temporary shelters were set up in schools and churches to house approximately 6,900 of the homeless (16,000 others stayed with relatives or friends). Meal packets and medical services were provided to the homeless in the shelters. The Burmese Red Cross assisted in the relief operation and the ministries of Health and Social Welfare compiled lists of needed supplies and equipment. The SRUB also began assessing longer-term reconstruction needs.

**Assistance Provided by the United States Government**

The USG responded immediately to the disaster by donating \$15,000 to the Burmese Red Cross. A check for this amount was presented to the Director General of the SRUB Relief and Resettlement Department for transmittal to the Red Cross . . . . . \$15,000

An additional \$10,000 was contributed in response to an UNDRO appeal for funds to purchase needed supplies and equipment . . . . . \$22,222

**TOTAL \$25,000**

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community****International Organizations**

LORCS — issued an appeal for \$301,852 for immediate relief assistance.

UNDP — provided an emergency grant of \$30,000; the UNDP Resident Representative served as coordinator of the international donor response.

UNDRO — issued an appeal to meet the SRUB request for assistance; gave an emergency grant of \$15,000.

WHO — served as coordinator for medical assistance; provided donors lists of needed medicines and medical supplies.

**Governments**

Australia — \$92,590 in cash.

Canada — \$19,685 in cash through LORCS.

China, Peoples Rep. — \$10,000 through the Chinese Red Cross.

Germany, Fed. Rep. — \$18,730 in cash.

India — gave medicines and clothing worth \$10,000.

Indonesia — \$2,570 in cash.

Japan — \$10,000 in cash.

New Zealand — \$13,160 through LORCS.

Soviet Union — \$25,260 in cash.

United Kingdom — \$7,115 to the SRUB.

**Voluntary Agencies**

Canada Red Cross — \$4,005 in cash through LORCS.

Denmark Red Cross — \$1,520 through LORCS.

Finland Red Cross — \$4,634 in cash.

Germany, Fed. Rep. Red Cross — provided 100 tents, value not reported.

Japan Red Cross — gave cash and medicines, total value of \$15,000.

Netherlands Red Cross — \$8,449 through LORCS.

New Zealand Red Cross — gave \$1,320 in cash.

Norway Red Cross — \$13,380 in cash through LORCS.

Oxfam — \$12,270 to the Burma Red Cross for temporary shelter.

Soviet Union Red Cross — donated medicines and textiles, value not reported.

Sweden Red Cross — \$18,997 in cash through LORCS.

Switzerland Red Cross — gave \$13,450 in cash.

United Kingdom Red Cross — \$4,398 in cash through LORCS.

**TOTAL \$653,385**

## Cyclone

# India

### Date

October 3, 1983

### Location

12 districts of Andhra Pradesh

### No. Dead

At least 100

### No. Affected

At least 700,000

### Damage

Over 140,000 dwellings and 1,500 irrigation tanks as well as some 300,000 hectares of standing crops were destroyed or damaged. Communications and air/ground transportation links were severely disrupted. According to one estimate, the value of lost crops (mostly rice paddy and sugar cane) was about \$196 million. State officials assessed total damages at approximately \$510 million.

### The Disaster

The first cyclonic storm of the 1983 season in the Bay of Bengal crossed the northern coast of Andhra Pradesh between Bheemunipatnam and Vishakhapatnam on October 3. Twelve of the state's 23 districts were affected as heavy rains accompanying the storm caused severe flooding in the Godavari and other rivers. About 15,000 people in 18 villages on the banks of the Yeleru River in East Godavari District were marooned by the rising waters. Another 4,000 people were evacuated from low-lying areas in Vishakhapatnam.

The cyclone and flooding left at least 100 persons dead and thousands of others homeless. Major road and railway lines were severed, including the vital rail link between Vijayawada and Vishakhapatnam. Agricultural losses were especially heavy since the storm occurred only one month before the start of the rice harvest season. Approximately 4,000 hectares of choice farmland in West Godavari District were rendered useless because of sand accumulation. Irrigation canals were also clogged with sand and debris.



*Cyclone damage.*

The cyclone was the second calamity to hit Andhra Pradesh in a matter of months, as severe monsoon flooding in August had resulted in at least 100 deaths and extensive crop and property damage.

**Action Taken by the Government of India (GOI) and the Government of Andhra Pradesh (GOAP)**

The GOAP mobilized civil administrative and medical personnel to conduct relief and rehabilitation activities and to vaccinate people at risk. At the request of the state government, the Indian Defense Services assisted in the rescue operation. Naval helicopters dropped approximately 10,000 food packets to marooned villages in West Godavari District and low-lying areas of Vishakhapatnam during the emergency phase.

Prime Minister Indira Gandhi visited the stricken area on October 11. She announced immediate central government assistance of \$9.8 million and the release of \$147,000 from the Prime Minister's National Relief Fund to the families of the dead and injured. As of November 21, the GOI had released the \$9.8 million promised in relief and rehabilitation assistance, and the GOAP had made some \$29.4 million available. These funds were used primarily to provide food, clothing, and lump sum payments to flood victims whose homes and land had been destroyed or damaged.

The GOAP announced subsidies for land reclamation, reduced rates for seeds, and low interest loans for affected farmers. District level cyclone relief advisory committees were formed to distribute funds to repair local water storage tanks and water pumps as well as to provide other services.

**Assistance Provided by the United States Government**

U.S. Ambassador Harry Barnes determined on October 24 that a disaster situation warranting USG assistance existed in Andhra Pradesh. He exercised his disaster assistance authority to make use of USG resources available in India and coordinate them with relief activities of GOI agencies and U.S. voluntary organizations. He also donated \$25,000 to the Prime Minister's National Relief Fund. The USAID Mission approved a request from Catholic Relief Services to make 63 MT of P.L. 480 Title II wheat available on a non-replacement basis. This was to be used for emergency distribution to 14,000 cyclone/flood victims in Vijayawada and Eluru.

**TOTAL      \$25,000**

**Assistance Provided by U.S. Voluntary Agencies**

CRS — distributed 63 MT of P.L. 480 Title II commodities from its regular stocks for emergency feeding (see USG Assistance).

**Assistance Provided by the International Community**

None reported.

**Floods****Republic of Korea****Date**August 31-September 5,  
1984**Location**

Nationwide

**No. Dead**

166

**No. Affected**

350,984

**Damage**

Total damage estimated at \$165 million with roads, public utilities, crop land, irrigation facilities, buildings, and ports most seriously affected

**The Disaster**

Torrential rains soaked South Korea for five straight days, causing the deaths of 166 people, the evacuation of 350,984 people from their homes, and widespread damage to roads, public utilities, and rice paddies. In Seoul, over 334 mm of rain fell in just 36 hours, backing up drainage systems in low-lying, residential areas and leaving some neighborhoods without water, electricity, or telephone service. The rains produced flooding along the Han River, before moving south and eventually tapering off on September 5.

**Action Taken by the Republic of Korea (ROK)**

President Chun Doo Hwan declared a civil defense emergency shortly after the heavy rains began and visited several sites to survey the extent of the damage. Radio and television stations maintained around the clock emergency broadcasting, despite frequent power outages due to the flooding. The Korean National Disaster Countermeasure headquarters in Seoul mobilized civil defense corps, homeland reservists, and off-duty police to evacuate flood victims to emergency relief centers. Most of these relief centers were in schools and public buildings, and stocked with water, dehydrated food, bedding, and medical supplies. A national appeal for donations to the relief effort brought in approximately \$1,900,000, which was distributed to the victims by the government and the Red Cross.

As soon as the rains stopped, civilian and government volunteers worked together to clean up mud and debris and replant rice paddies. The National Disaster Countermeasure headquarters furnished \$250,000 in grants and \$820,000 in loans to repair houses that were damaged or destroyed. The ROK also submitted a \$61,870,000 supplementary budget to the National Assembly for reinforcement of flood-stricken public facilities. One positive incident resulting from the flood was the exchange of relief supplies between the Republic of Korea National Red Cross (KNRC) and the North Korean Red Cross, the first exchange of such goods across the DMZ in over 30 years. On September 29-30, the North Korean Red Cross delivered several

thousand tons of rice, textiles, cement, and medicine by truck to the village of Panmunjom and by ship to the ports at Incheon and Pukpyong. The KNRC returned the gesture by shipping several thousand packages of consumer goods (radios, watches, clothes, and shoes) to North Korea. A selected defense readiness condition was observed throughout the exchange, but both sides expressed a desire to view the operation as an indication of improving relations between the two countries.

**Assistance Provided by the United States Government**

On September 3, the U.S. Ambassador determined that a disaster warranting USG assistance existed and promptly presented \$25,000 to the Republic of Korea National Red Cross. U.S. Army and Air Force helicopters participated in several rescue operations in Seoul and other flooded areas.

**TOTAL     \$25,000**

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by International Community****International Organizations**

UNICEF -- presented \$12,373 to the Korean Red Cross.

**Governments**

Australia -- donated \$10,000 in cash.

Japan -- contributed \$100,000.

Korea, Peoples Dem. Rep. of -- delivered several thousand tons of rice, textiles, medicine, and cement to Panmunjom, Incheon, and Pukpyong; value not reported.

Netherlands -- donated \$15,466.

Taiwan -- contributed \$2,475.

**TOTAL     \$140,314**

**Floods****New Zealand****Date**

Late January 1984

**Location**

The city of Invercargill, South Island

**No. Dead**

None reported

**No. Affected**

2,600 homeless

**Damage**

Estimated at \$20 million

**The Disaster**

During the last week of January 1984, the southern New Zealand city of Invercargill and surrounding areas were inundated by flood waters. Approximately 3,000 sq. km. were affected, with 1,000 houses severely damaged.

**Action Taken by the Government of New Zealand (GONZ)**

The regional coordinator for civil defense declared a state of emergency and directed all local relief efforts. A relief fund was established by the government and appeals for contributions were issued nationwide.

**Assistance Provided by the United States Government**

As a gesture of goodwill between New Zealand and the United States, the U.S. Ambassador contributed \$5,000 from the International Disaster Assistance account to the GONZ relief fund.

**TOTAL \$5,000****Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community**

None reported.

**Volcanic Activity****Papua New Guinea****Date**

November 1983-November 1984

**Location**

Rabaul Volcano on East New Britain Island

**No. Dead**

None reported

**No. Affected**

25,000

**Damage**

Tremors and ground deformation caused only slight structural damage.

**The Disaster**

The town of Rabaul sits within an active caldera on the Gazelle Peninsula, at the northeastern tip of East New Britain Island. Rabaul serves as the administrative capital of East New Britain Province and has approximately 25,000 residents. On October 15, 1983, the town began experiencing a series of rolling earthquakes and ground swelling, normally precursors to a volcanic eruption. The second stage of a four-stage alert was declared, indicating that an eruption was possible within a few months. Residents feared that a future eruption would be of the same scale as the last explosion in 1937, when 500 people were killed and the entire population had to be evacuated. For the most part, the residents continued their daily routines, although some banks reported large transfers of money and airlines received heavy bookings out of Rabaul.

In January, it was estimated that there was a 96% probability that the Rabaul volcano would erupt within 18 months, but only a 4% probability there would be a cataclysmic caldera collapse. An increase in ground deformation and seismic activity was reported in January and March and prepara-

tions were made for a Stage 3 alert, which entails mobilizing the population to evacuate. However, the Stage 2 alert remained in effect as seismic activity and ground swelling gradually subsided and the probability of an eruption before the end of the year dropped to 50%. By November 1984, the volcanic alert was officially downgraded to Stage 1, signifying that an eruption could take place within twelve months or several years.

**Action Taken by the Government of Papua New Guinea (GPNG)**

The East New Britain Provincial Disaster Control Committee began preparing for an eruption at Rabaul several months before the declaration of a Stage 2 volcanic alert. In June 1984, the Committee approved a Provincial Disaster Plan detailing mass evacuation procedures for leaving Rabaul in case of a major eruption. The plan also specified high risk zones around Rabaul and recommended establishing an emergency operation center and airfield in safe areas beyond the range of the volcano. The GPNG provided \$2,040,000 to upgrade evacuation routes, construct an emergency control center at Vunadidir, and resurface two emergency airstrips at Vunakanau and Tokau. The GPNG defense forces were put on standby for a possible evacuation and an additional police force was moved to Rabaul in February. Food, water, and medical supplies were stockpiled at an evacuation site near Kopoko, approximately 20 km southeast

of Rabaul. Fear that an eruption would totally destroy the Rabaul Volcanic Observatory prompted the GPNG to approve funds to construct a temporary observatory at Tomavatur, a safe distance from Rabaul. The GPNG also purchased electronic distance measurement equipment (EDM) from the United States Government, to monitor ground swelling around the caldera. On March 2, 1984, the GPNG Parliament passed the Disaster Management Act of 1984, specifying the membership and responsibilities of national and provincial disaster committees. Fortunately, Rabaul did not erupt in 1984 as the experts had predicted, but the renewed threat did result in making the population better prepared for an eventual eruption.

**Assistance Provided by the United States Government**

On November 11, 1983, the U.S. Ambassador determined that the possible volcanic eruption at Rabaul had reached life-threatening proportions and warranted USG assistance. The chief volcanologist at the Rabaul Volcanic Observatory contacted the USGS and the U.S. Embassy at Port Moresby and requested that the USG provide electronic distance measurement (EDM) equipment to monitor ground deformation around the caldera. OFDA, in cooperation with the USGS, agreed to loan the EDM equipment to the Rabaul Volcanic Observatory. This equipment proved so valuable in monitoring the volcanic activity that the GPNG asked to purchase the EDM instrumentation directly from the USG. In April, the EDM equipment malfunctioned and OFDA sent a manufacturer's service kit and 50 replacement reflectors to Rabaul. OFDA also funded two visits by a USGS geophysicist and an electronics technician to provide technical assistance.

**Summary of USG Assistance**

Cost of EDM monitoring equipment . . . . .	\$22,692
Reimbursement for above equipment by GPNG . . . . .	(\$21,782)
Cost of EDM replacement and repair kit . . .	\$19,913
USGS team . . . . .	\$13,700
<b>TOTAL</b>	<b>\$34,523</b>

**Assistance Provided by U.S. Voluntary Agencies**

ADRA — outfitted its overseas missions on East New Britain Island with back-up butane gas stoves and lighting units, plus blankets and clothing, in preparation for a mass evacuation from Rabaul.

**Assistance Provided by the International Community**

**International Organizations**

UNDRO — sent an UNDRO consultant to assist in preparing the Provincial Disaster Plan.

WHO — sent 700 kg of medicine to be stockpiled at a nearby evacuation site.

**Governments**

Australia — Two officers from the Australian Overseas Disaster Response Organization (AODRO) were sent to Papua New Guinea to inspect disaster preparedness activities undertaken by the GPNG. The Australian government also sent a volcanologist and two computer programmers to provide assistance to the Rabaul Volcanic Observatory. Australian defense forces were put on stand-by alert to assist in a possible evacuation.

Japan — sent a Japanese volcanologist to Rabaul and provided volcanic monitoring equipment, worth \$44,000.

New Zealand — offered to provide C130 aircraft to transport defense forces, tents, and emergency equipment into Rabaul in case of an eruption; also provided tiltmeters and telemetry equipment, worth \$7,500.

**TOTAL      \$51,500**

## Typhoons

## Philippines

<b>Name</b>	
June	Ike
<b>Date</b>	
Aug. 27, 1984	Aug. 31, 1984
<b>Location</b>	
N. Luzon	N. Mindanao, Cebu, Visayan Is.
<b>No. Dead</b>	
38	1,024
<b>No. Homeless:</b>	
2,575	325,766
<b>No. Affected</b>	
68,086	700,243

**Damage**

The total damage from both typhoons came to \$125.3 million, with the following breakdown:

## Sector/Damage (\$)

Public works/9.3 million;  
Public highways/7.1 million;  
Buildings & equipment/6.3 million;  
Fisheries/2.8 million;  
Staple crops/92.9 million;  
Livestock & poultry/  
1.9 million  
Vegetables/5.0 million.  
Approximately 59,674  
houses were totally  
destroyed, while 37,229  
were damaged.

**The Disaster**

Typhoon June ("Maring" in the Philippines) struck the northeastern tip of Luzon on August 27, 1984, with winds reaching 95 km/hour. Thirty-three people were killed and 103 injured. Before Typhoon June had left the Philippines for the South China Sea, Typhoon Ike ("Nitang" in the Philippines) struck Surigao del Norte, a province in northern Mindanao, on August 31. Ike's center winds were clocked at 205 km/hour, which made it the strongest storm since 1970. It went through the Surigao Strait, skirted southern Leyte, hit Bacolod City on September 2, and crossed southern Panay. It struck land again at Busuanga Island in northern Palawan before moving into the South China Sea on September 3.

In the northern Philippines, Typhoon June destroyed agricultural crops, fruit trees, and livestock. In the south, however, Typhoon Ike was most damaging to power and communication lines, buildings, and other basic structures. Immediate needs included emergency food, generators, and power saws, while longer-term needs included the repair of roads and other infrastructure. Assistance from both the Government of Philippines and international donors appears to have been mobilized primarily by Typhoon Ike; it is doubtful that Typhoon June alone would have warranted a disaster declaration by the U.S. or any significant support from the international community.

**Action Taken by the Government of Philippines (GOP)**

The Philippine National Red Cross (PNRC), the Ministry of Social Services and Development (MSSD), the Armed Forces, and private organizations started large-scale relief efforts as soon as the magnitude of the disaster became apparent. Airlifts of rice, medicines, and other relief supplies began to reach the south by September 4. Two days later, President Marcos declared a calamity in the areas hit by the storms and ordered the release of 80 million pesos (US \$4 million) from the Calamity Fund for Relief and Rehabilitation.

The President also directed the Minister of Budget to release a total of 48 million pesos: 20 million for the repair of roads and bridges, 20 million for agriculture, 5 million to repair schools, and 3 million for social services. The GOP sent a letter dated September 7 to the U.S. Embassy and other potential donors requesting assistance. The GOP also established an *ad hoc* committee to coordinate donor assistance. Deputy Minister Cardenas of the National Economic and Development Authority (NEDA) was named director of the committee.

By September 25, the Philippine Air Force had completed 195 airlifts which brought 2,350 tons of supplies to the disaster areas. This assistance provided relief for over 309,000 families.

**Assistance Provided by the United States Government**

On September 6, Ambassador Bosworth declared the situation in the Philippines to be a major disaster, and he consequently presented a check for \$25,000 in immediate disaster relief assistance to Philippine Prime Minister Virata.

In order to provide the most appropriate assistance, several assessments were undertaken. The USAID Deputy Director and Public Health Advisor spent a half-day in Surigao on September 6 assessing damages, and on September 9, the Deputy Director accompanied a group on a fact-finding trip to Cebu and Bohol. A USAID Disaster Relief Team visited Surigao del Norte and its principal city, Surigao, on September 13-15 to assess the damage from Typhoon Ike in greater detail.

Ambassador Bosworth then met with the GOP Prime Minister to discuss USC assistance, and it was determined that the repair of electric power services should receive the highest priority. The National Electrification Administration was designated the implementing agency for the almost \$1.0 million project, of which 40% of the cost was needed for purchasing poles and most of the rest for labor. OFDA eventually provided NEDA with \$865,500 to restore electrical power.

The Mission granted Project Compassion, a local private voluntary organization, \$100,000 to provide short-term rehabilitation assistance in the disaster zone. The program contained the following components: \$62,000 to assist rebuilding efforts; \$27,500 for vegetable seeds; and \$10,500 for poultry raising.

On September 17, the Mission approved a one-month CRS feeding program utilizing 4,725 MT of P.L. 480 Title II rice (valued at \$1,512,000) and 315 MT of P.L. 480 Title II non-fat dry milk (valued at \$346,500). Ocean freight for these commodities was \$341,500, and OFDA funded the inland transport and handling of the food, at a cost of \$310,000.

Finally, OFDA approved a CARE school repair project for the provinces of Surigao del Norte, Bohol, and Antique on Panay Island, which cost \$774,000.

Total OFDA Assistance . . . . .	<b>\$2,074,500</b>
Total Food for Peace Assistance . . . . .	<b>\$2,200,000</b>
<b>TOTAL</b>	<b>\$4,274,500</b>

**Assistance Provided by U.S. Voluntary Agencies and Other Non-Governmental Organizations**

ADRA — \$64,685 in cash for the purchase of building materials.

American National Red Cross — \$25,000 to the Philippine Red Cross.

CARE — distributed 18,024 bags of P.L. 480 Title II bulgar, worth \$130,854; 16,424 bags of soy-fortified grits, valued at \$155,521; and \$10,000 in cash.

CRS — 400 bales of clothing, worth \$72,668; \$50,000 in cash; and 43,293 bags of corn-soya milk and 12,920 bags of non-fat dry milk valued at \$651,314.

CWS — \$5,000 in cash and an appeal for \$50,000.

Food for the Hungry International — \$34,188 in medicines.

Salvation Army — \$4,611 in housing and food items.

**TOTAL      \$1,204,841**

**Assistance Provided by the International Community**

**International Organizations**

EEC — \$367,650 in cash for medicines and a medical team.

LORC — \$334,934 in cash; also issued an appeal on September 5 for Swiss Francs 2,054,500 (U.S. \$950,000).

UNDP — \$30,000 to UNICEF

UNDRO — \$50,000 to UNICEF

UNICEF — \$120,000 in child health protection: medicines, vitamins, ORT, and equipment; \$60,747 for rehabilitation of school and home gardens, including seeds and tools; \$22,000; 2 MT milk borrowed from WFP; \$116,950 for the rehabilitation of the Barangay water supply; and \$30,000 for health centers.

WHO — \$7,000 worth of water purification and oral rehydration medicines.

World Vision International — \$147,000 in cash.

#### **Governments**

Australia — \$124,996 in cash and \$344,828 worth of milk products.

Belgium — sent Medecins Sans Frontieres team September 13 and contributed \$24,188 in cash for medicines.

Canada — \$100,000 in cash to the Canadian Red Cross and \$41,985 in cash for a UNICEF project.

China, Peoples Rep. — \$20,000 through the Chinese Red Cross.

France — \$10,685 through the Philippine Red Cross.

Germany, Fed. Rep. — \$86,214 — cash to UNICEF, CRS, and the GOP.

Indonesia — medicines worth \$25,000.

Japan — \$500,000 in cash.

Netherlands — \$279,617 in cash to UNICEF.

New Zealand — 50,000 lbs. of skimmed milk worth \$15,300; \$25,000 in cash through LORCS.

Norway — \$25,655 worth of mango beans through CRS, and \$82,114 through the Norwegian Red Cross for the purchase of 28 tons of fish protein concentrate.

Switzerland — \$20,833 through the Swiss Red Cross.

United Kingdom — \$13,072 to CAFOD (a British PVO); and \$13,072 to UNICEF.

#### **Voluntary Agencies**

Australian Baptist World Aid — \$4,310.

Australian Catholic Relief — \$44,000.

Catholic Fund for Overseas Development — (a British PVO) — \$30,000.

Caritas Germany — \$72,000.

Caritas Hong Kong — \$2,000.

Caritas Italy — \$11,000.

Caritas Japan — \$12,000.

Caritas Madagascar — \$900.

Caritas Netherlands — \$16,500.

Chinese ASEAN Chess Delegation — \$10,000.

Dev/Peace (a Canadian PVO) — \$20,000.

Hopital Sans Frontieres — 500 kg medicines shipped by Air France; cost was covered by UNDRO.

Netherlands Red Cross — \$7,815.

Oxfam — \$10,000 in cash.

World Vision Australia — \$86,200 through World Vision International.

**TOTAL      \$3,365,565**

**Volcanic  
Eruption**

# Philippines

**Date**

September-October 1984

**Location**

Albay Province, 320 km southeast of Manila; towns affected included Daraga, Legaspi City, Tabaco

**No. Dead**

Not reported

**No. Affected**

53,000 evacuated

**Damage**

In Legaspi City, 98% of the crops were damaged, water springs were destroyed, and roads were washed out. A large portion of the coconut plantations were totally covered by mud flows in Santo Domingo.

Considerable damage to crop lands occurred and incidences of respiratory and intestinal diseases increased among the population in the area.

**The Disaster**

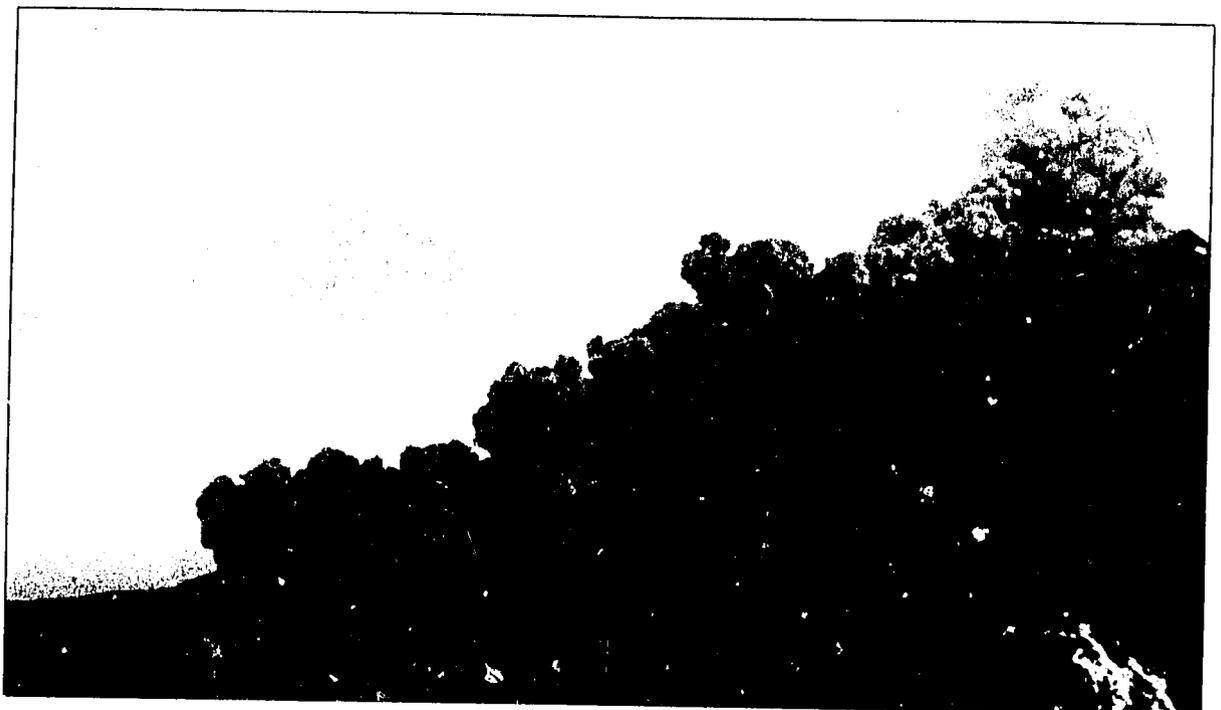
While the Philippines was still reeling from the effects of Typhoons June and Ike, the 2,476-m high Mayon Volcano on September 10, 1984 exploded for the first time in six years. An ash column affected an area about 100 meters down the western slope. Strong eruptions continued over the next two days, disgorging lava toward the southwest and northwest. These eruptions produced heavy ash fall, mostly to the southwest. Volcanic activity continued through September 20, causing heavy ash flows both southwest and northwest of Mayon. Significant amounts of ash and other pyroclastic deposits accumulated around the volcano's upper slope and contributed to serious mud flows during subsequent heavy rains.

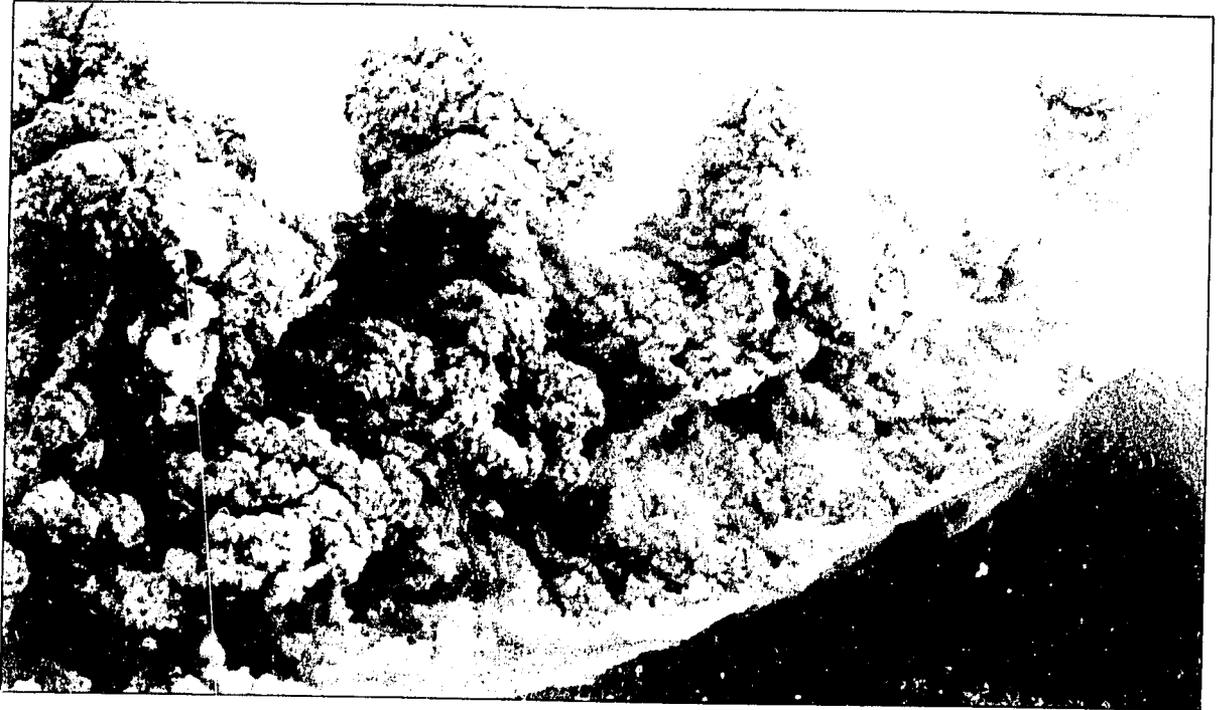
Mayon's activity abated to weak steaming and lava trickles from September 19 to 23. On September 24, however, Mayon erupted with its greatest strength since September 10, hurling columns of fire, ash, and steam 15 km high and sending lava cascading down the slopes. The ash-laden steam clouds drifted toward the northwest, northeast, and east. Pyroclastic flows rushed down the northwest, north, northeast, and east slopes of Mayon. Also on September 24, mud flows overran part of the highway of Padong, making it impassable by vehicles. Several weeks later, in mid-October, another mudflow effectively dammed the Kabilugan River. As a result, 40 houses were submerged by water.

**Action Taken by the Government of the Philippines (GOP)**

The force of Mayon's first eruption on September 10, had been predicted by the Philippine Institute of Volcanology (PHIVOLC), which recommended immediate evacuation of both the entire area within an 8 km radius, and all barrios lying on the northern half of Mayon. After a strong eruption on September 11, the areas to the southwest of Mayon were also evacuated.

Eighteen evacuation centers were set up by the Provincial Disaster Coordinating Committee (PDCC). The Ministry of Social Services and Development, the Philippine National Red Cross, the Armed Forces of the Philippines, and the Ministry of Public Works and Highways coordinated their efforts to bring emergency relief to the evacuated families. When Mayon erupted on September 24, the PDCC widened the radius of the danger zone from 8 to 10 km, thus increasing the number of evacuees by 25,000 for a total of over 50,000 people. The value of GOP relief assistance totaled more than \$66,000.





On September 13, PHIVOLC asked the United States to provide the services of two U.S. Geological Survey (USGS) volcanologists and six types of equipment.

Total funds FY 84 .....	\$50,358
Total funds FY 85 .....	\$25,106
<b>TOTAL</b>	<b>\$75,464</b>

**Assistance Provided by the United States Government**

On September 17, Ambassador Bosworth issued a disaster declaration and donated \$25,000 to the Philippine National Red Cross.

PHIVOLC requested that the USG provide volcanologists and scientific equipment. OFDA therefore arranged for the services of three USGS volcanologists, whose expenses (travel allowance, per diem, and vehicle rental) totaled \$17,500. OFDA also paid for 50 reflectors, which cost \$2,858 and monitoring and surveying equipment, which cost \$25,106 (FY 85 funds).

OFDA also agreed to guarantee insurance for USGS equipment against loss from a volcanic eruption (\$10,000 worth of equipment in high risk zones and \$50,000 worth in relatively low risk areas). The equipment was insured at approximate replacement value.

The USGS volcanologists requested helicopter support for observations and for placing equipment on the flanks of Mayon. OFDA increased the Ambassador's authority by \$5,000 to fund this logistical support.

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community**

None reported.

**Floods****Sri Lanka****Date**

December 1983-May 1984

**Location**

Northern, North Central, and Eastern Provinces

**No. Dead**

Three confirmed

**No. Affected**

About one million

**Damage**

Approximately 50,000 houses completely destroyed; roads and cropland submerged; irrigation works damaged

**The Disaster**

Continuous heavy rains created by a low pressure system in the Bay of Bengal inundated the northern and eastern portions of Sri Lanka throughout the spring of 1984. The districts of Ampari, Anuradhapura, Batticaloa, Jaffna, Killinochchi, Mannar, Mullattiyu, Polonnaruwa, Trincomalee, and Vavuniya were the hardest hit. Approximately 200,000 families were affected, and of these, about one-quarter lost their homes. Many villages were isolated as roads and culverts were washed out.

Large tracts of rice and other crops were devastated. The Government of Sri Lanka estimated a loss of 20 million bushels of rice, which represented 21% of the main paddy harvest. Onion, potato, chili, and pulse crops were also badly damaged.

**Action Taken by the Government of Sri Lanka (GOSL) and Local Voluntary Agencies**

The GOSL initiated a series of aerial missions to assess the damage, evacuate stranded victims, and drop food parcels into marooned communities. Once the extent of the disaster became known, the GOSL initiated a large relief program and the Ministry of Social Services issued an appeal for assistance. Government agents at the district level were directed to provide cooked meals and distribute a one week supply of dry rations to affected families. Also, temporary camps were established to shelter the homeless. Longer-term rehabilitation for the affected families included funds for house repairs and the purchase of household goods and vocational equipment.

The Sri Lanka Red Cross (SLRC), using 200 volunteers, was active in all the affected districts. Based on lists prepared by local authorities, the SLRC volunteers distributed relief packets (dry rations, soap, matches, and clothing) to approximately 10,000 families. The SLRC relief program, funded in large part through LORCS, also included the provision of 300,000 cajan (palm thatch) for roof repair, agricultural tools, milk powder for supplemental feeding, and drugs. Relief supplies were dispatched from Colombo by truck and railway wagon; boats were used in flooded rural areas. The Greater Colombo Economic Commission took up a collection of garments and textiles from firms in the free trade zone.

**Assistance Provided by the United States Government**

In response to the GOSL request for assistance, the U.S. Ambassador donated \$25,000 in cash to the Sri Lankan relief program.

**TOTAL      \$25,000**

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community****International Organizations**

International Free Labor Association — contributed \$3,400 in cash.

LORCS — issued an appeal to its member societies for the SLRC relief program.

UNICEF — provided medical supplies valued at \$25,000 to the GOSL Ministry of Health.

**Governments**

Canada — cash grant of \$37,500.

Japan — donated \$15,000 in cash.

Norway — \$50,785 in cash.

United Kingdom — cash grant of \$13,850.

**Voluntary Agencies**

Australia Red Cross — \$2,985 in cash through LORCS.

Belgium Red Cross — \$3,433 in cash through LORCS.

Canada Red Cross — cash grant of \$3,750 through LORCS.

Denmark Red Cross — \$10,027 in cash through LORCS.

Finland Red Cross — cash grant of \$8,549 through LORCS.

Germany, Fed. Rep. Red Cross — cash grant of \$1,848 and medicines valued at \$1,371 for the SLRC program.

Japan Red Cross — \$4,464 in cash through LORCS.

Norway Red Cross — \$25,455 in cash through LORCS.

Sri Lanka-Korea Friendship Association — collected \$300 to assist flood victims.

Sweden Red Cross — \$30,989 in cash through LORCS.

Switzerland Red Cross — cash grant of \$22,321 through LORCS.

United Kingdom Red Cross — \$13,850 in cash through LORCS.

**TOTAL \$274,877**

**Floods****Thailand****Date**

August-October 1983

**Location**

Bangkok and 42 of Thailand's 73 provinces

**No. Dead**

50

**No. Affected**

Approximately one million

**Damage**

In Bangkok and environs, 588 roads, 54 bridges and 150,320 houses were damaged and approximately 22,500 hectares of agricultural land were inundated.

**The Disaster**

Heavy rains during the 1983 monsoon season caused extensive flooding in Bangkok and coastal and riverine provinces. The situation was exacerbated by Tropical Storm Kim and high tides in the Chao Phraya River and along coastal areas. The flooding washed out many roads in Bangkok and caused widespread property damage to homes and agricultural land.

**Action Taken by the Royal Thai Government (RTG)**

The RTG immediately initiated relief measures, mobilizing workers to assist the flood victims and begin reconstruction of the damaged transportation network.

**Assistance Provided by the United States Government**

On October 20, within two days of the most serious flooding in Bangkok, U.S. Ambassador John Gunther Dean presented a check for the local equivalent of \$13,050 to Prime Minister Prem Tinsulanonda. These funds were used to provide emergency relief to the most seriously affected flood victims.

**TOTAL \$13,050**

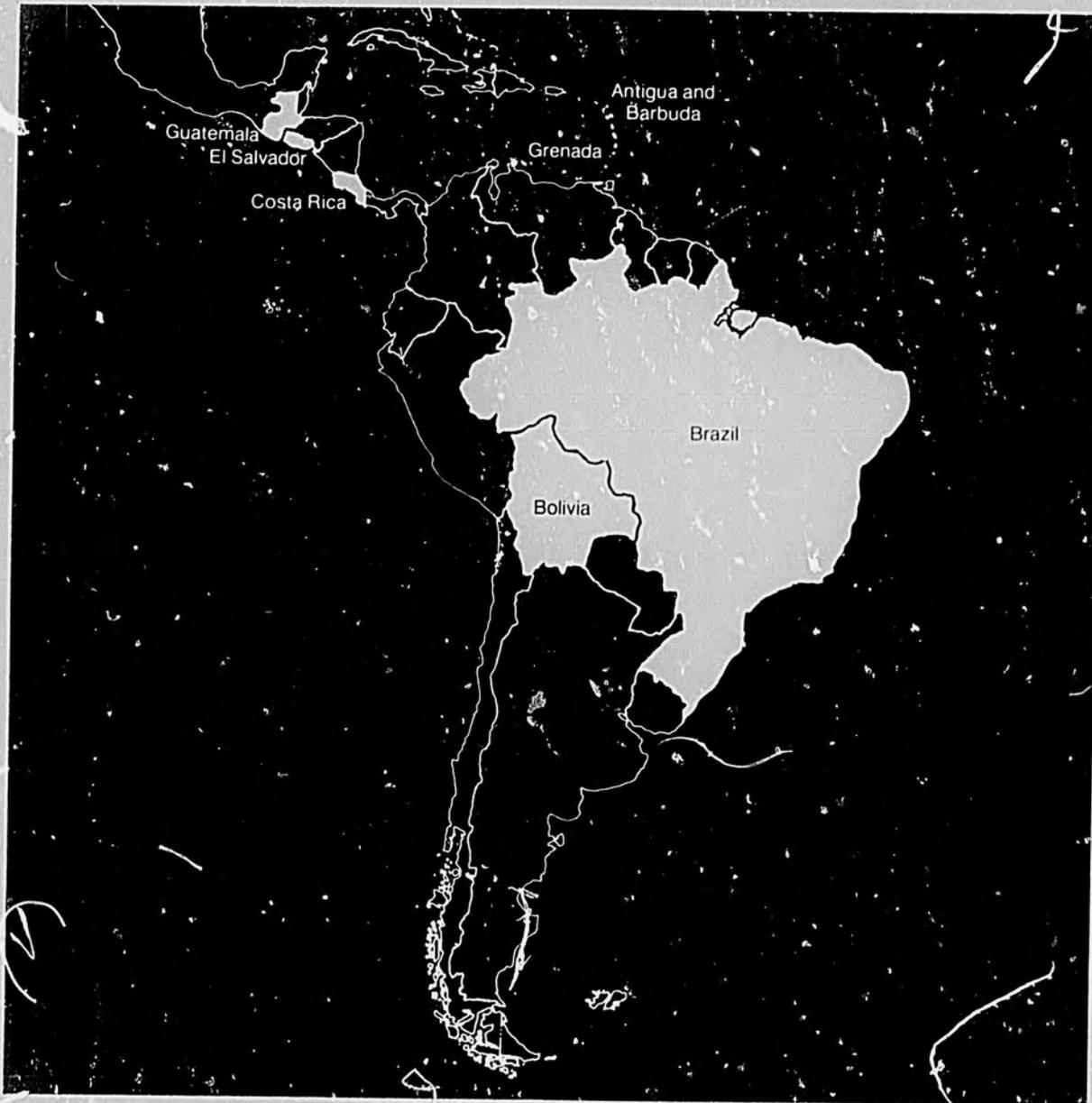
**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community**

None reported.

# Latin America and the Caribbean



Antigua and Barbuda – Drought	72
Bolivia – Drought	75
Brazil – Floods	76
Costa Rica – Fire	77
El Salvador – Civil Strife and Displaced Persons	78
Grenada – Emergency	80
Guatemala – Civil Strife and Displaced Persons	84

**Drought****Antigua and Barbuda****Date**

November 1983-August 1984

**Location**

Islandwide

**No. Dead**

None reported

**No. Affected**

75,000

**Damage**

Extensive and progressive damage to the agricultural sector, potential threats to health and the economy

**The Disaster**

Rainfall in Antigua and Barbuda was less than 50% of normal in 1983, totaling only 57.4 cm. Although drought can be expected on the island approximately once every ten years, few measures have been instituted to conserve available water supplies or reduce run-off and waste. At the same time, the need for more water due to increased irrigation and an expanded hotel industry has placed greater demands on the limited supply. December to April are usually the driest months; they are also the peak months for tourism, a critical component of the economy.

As reservoir levels fell to alarmingly low levels in January, the island faced the threat of a serious water shortage, widespread health problems, and a decline in tourism. The shortage also reduced water pressure and limited firefighting capability during the driest months of the year. Use of government water for irrigation was prohibited in December 1983, and yields per acre plummeted. Weight loss and some livestock deaths were attributed to receding and salinized ponds and catchment areas as well as spotty pasturage.

Early measures to conserve water also aggravated the drought's effects. Water rationing during two three-hour periods each day placed severe hardships on water consumers in the outlying portions of the distribution system: it took several hours to charge the lines fully and deliver water to those areas. Moreover, during periods when the system was not charging, the lines were vulnerable to fecal contamination and intrusion by other harmful substances. As a result, the Ministry of Health recommended that all drinking water be boiled.

While the island relies on a variety of sources for its water supply, Potsworks Dam is the major source for the public water system, serving 80% of the population through house connections or standpipes. By March, the main reservoir at Potsworks Dam contained only a two-week supply, and a secondary reservoir normally used for irrigation was similarly depleted. Groundwater sources were evacuated to such an extent that considerable salt water intrusion was reported all over the island. Frequent power outages limited the operation of major wells which draw from the groundwater supply. By April, the Potsworks Dam reservoir had dried up completely.

**Action Taken by the Government of Antigua and Barbuda (GOA)**

In December, the GOA prohibited the use of the public water supply to wash cars, water lawns, or fill swimming pools. Water rationing was also introduced. Water consumption in government, school, and hospital facilities was reduced by fifty percent as a result of conservation efforts.

The GOA was reluctant to publicize the water shortage for fear of triggering a decline in tourism, which supplies 75 percent of the country's foreign exchange. In January, however, the GOA requested assistance in reducing the drought's effects in a diplomatic note to the U.S. Charge in Antigua.

In April, shortly after the country's national elections, the new GOA administration established a task force for the drought situation. Participants included representatives from the Antigua Public Utilities Authority (APUA), the Pan Caribbean Disaster Preparedness and Prevention Project (PCDPPP), USAID's Regional Development Office/Caribbean (RDO/C), the U.S. Naval Facility, and Gannett and Fleming Engineers. The PCDPPP agreed to assess the drought and its implications immediately.

The PCDPPP team included Pan American Health Organization (PAHO) water and sanitary engineers, a soils engineer from the Caribbean Agricultural Research and Development Institute, two APUA water engineers, and the chief technical officer of the Ministry of Agriculture. By the end of April the team had produced a report which included short-term recommendations for rehabilitating groundwater wells, expanding utilization of available surface water, increasing conservation, developing more effective rainwater catchments, and barging water as a last resort. Longer-term recommendations included a leak detection and repair program, dam cleaning, well drilling, installation of rainwater gauges at principal catchment areas, and construction of additional rainwater catchments.

Conditions worsened, however, and the GOA decided to barge water to the island. Discussions with the international donor community led to establishment of a fund to finance the water barging operation. APUA developed and implemented a system of graduated surcharges to cover some of the costs, such that water rates for domestic users were doubled and commercial users, including hotels, were charged the full cost of the barged water. Most of those who depend on standpipe connections do not pay direct water rates and so were unaffected by the rate increases.

#### **Assistance Provided by the United States Government**

After receiving a request for assistance with water barging on January 10, the U.S. Embassy in Antigua dispatched a three-man team from RDO/C to assess the nature and urgency of the problem. The team met with the Deputy Prime Minister and representatives of APUA and PCDPPP on January 12 and 13 to develop a plan of action. The Director of PCDPPP, which is headquartered in Antigua, agreed to lead a technical assessment team.

At the request of RDO/C, and based in part upon the PCDPPP recommendations, OFDA procured and sent to Antigua ten submersible six-inch pumps with motors to be used in ten wells recently rehabilitated by APUA.

In March, the U.S. Charge requested U.S. Naval Facility assistance in cleaning up Potsworks Dam reservoir. The extremely low water level provided a unique opportunity to remove debris, deepen the reservoir, and rebuild earthen containment walls. Because all APUA equipment was being used to repair water line breaks, a bulldozer was borrowed from the Antigua air station. The work was completed in seven days.

At the same time, the USG and the GOA were considering other options to alleviate the drought's effects. A team from RDO/C visited Antigua on March 12 and 13 to consult with GOA and APUA officials. The need to import water from external sources was established and necessary preparations were initiated.

On April 13, the U.S. Charge in Antigua declared that the drought constituted a disaster warranting USG assistance. The USG offered to join other international donors in financing the cost of barging a one-week supply of water to Antigua. One hundred thousand dollars was transferred to a multi-donor fund established by the GOA and administered by UNDP in Barbados. Three days later, OFDA dispatched a Sanitary Engineer from A.I.D.'s Water and Sanitation for Health project to assess GOA resources and assist APUA in establishing and operating an emergency water distribution program. As preparations for barging water to the island began, it was discovered that shore facilities to transfer, receive, and distribute the imported water were inadequate. The Commanding Officer of the U.S. Naval Facility in Antigua, who had participated in many of the drought planning meetings, volunteered to provide the service and expertise at his command to address the problems.

To enable barges to discharge water at Crabbs Peninsula, the optimum location for effective distribution, the Seabees built a 200-ft long floating pipeline to discharge water into a storage tank and a 600-ft alternative pipeline. They also marked a safe channel to the discharge site and placed two 9,000-lb. blocks to anchor the buoy and floating pipeline. In addition, they installed a major pump to move the barged water through the lines. When serious leaks developed in the old pipelines leading away from the discharge site, the Seabees worked with the Antiguans to install 2.5 km of 12-inch PVC water main. They set up an alternate barge discharge point at the High Point pier and laid new 6-inch PVC pipe from the pier to the reservoir.

Supplies to repair and lay the pipeline, including PVC hose and couplings, were provided by OFDA, which also sent 5,000 five-gallon collapsible water jugs and 20 nylon/canvas 3,000 gallon collapsible water storage tanks to be used for distribution. Most of the water storage tanks were set up in the greater St. John's area and served as secondary distribution sites, while several were set up at the main Port Authority pier to receive water directly from the incoming barges.

Assisted by a team of five welders and five steel workers from the COMNAVFORCARIB in Roosevelt Roads, Puerto Rico, the Seabees constructed 40 one-thousand gallon steel tanks. Most were used to convert regular trucks into water tankers, while others served as village water distribution points.

In May the Seabees began repair of the 2.5 million-gallon water storage tank at Crabbs Peninsula, which had been weakened by rust and years of disuse. The tank was completely cleaned, reconstructed, and reinforced by June 19.

**Summary of USG Assistance**

Ambassador's authority, used to repair Crabbs Peninsula water tank and replace old lines . . . . .	\$25,000
Administrative support . . . . .	\$5,000
Ten submersible water pumps with motors . . . . .	\$15,105
Airfreight of pumps . . . . .	\$1,484

Airfreight of OFDA water tanks and jugs . .	\$6,721
Contribution to water barging effort . . . .	\$100,000
Assorted pumps, couplings, and hoses . . .	\$20,451
Transport of pumps, couplings, and hoses	\$10,995
DOD costs of Seabee support and welding equipment from Puerto Rico . . . . .	\$15,000
TDY of WASH Sanitary Engineer (April — \$2,937, July — \$1,060) . . . . .	\$3,997
<b>TOTAL</b>	<b>\$203,753</b>

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community**

**International Organizations**

EEC — provided \$73,317 to support the multilateral emergency fund to finance water barging operations and to purchase small tanks for distribution to outlying areas. The contribution was coordinated with those of other donors by the PCDPPP.

PCDPPP — conducted a technical assessment of the drought, coordinated many aspects of the relief effort, and developed a public service announcement to encourage water conservation.

UNDP — conducted an extensive water supply study, with special focus on groundwater sources, quality, evacuation rates, and maintenance; developed recommendations for future action.

**Governments**

Canada — contributed \$78,678 to the water barging effort.

United Kingdom — contributed \$80,000 to the water barging effort.

<b>TOTAL</b>	<b>\$231,995</b>
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**Drought****Bolivia****Date**

1983-1984

**Location**

Altiplano region (the departments of La Paz, Potosi, and Chuquisaca)

**No. Affected**

1,500,000

**Damage**

Loss of crops and livestock exceeded \$500 million

**The Disaster**

This drought was a continuation of the previous year's devastating and prolonged shortage of rainfall. It was caused in part by El Nino, a climatic phenomenon which usually develops off the western coast of South America each December. Economic losses and food shortages caused by this drought were catastrophic. By mid-December 1983, it was apparent that greater damage was inevitable and that many parts of the altiplano would suffer a second major crop failure. (For a more detailed description of the disaster, please see OFDA's *Annual Report FY 1983*, pages 70-73.)

**Action Taken by the Government of Bolivia (GOB)**

The GOB's continued efforts on behalf of the drought victims were organized by the Ministry of Defense and included members of the Ministry of Agriculture. The National Community Development Service also helped distribute P.L. 480 Title II commodities in rural areas.

**Assistance Provided by the United States Government**

Because of serious deterioration in economic conditions due to the continuing drought, Ambassador Edwin G. Corr made a disaster declaration on December 21, 1983. His \$25,000 disaster assistance authority was used as follows: \$5,000 for the purchase of a water testing kit for the city of Potosi, and \$20,000 for hiring two local P.L. 480 Title II food inspectors for six months.

In addition, OFDA granted CRS \$28,370 to develop seed banks, provide U.S. vegetable and alfalfa seeds, drill for water and build water storage tanks, and improve the care of animals.

**TOTAL \$53,370****Assistance Provided by U.S. Voluntary Agencies**

CRS — carried out the project described above.

**Assistance Provided by the International Community**

None reported.



**Floods****Brazil****Date**

June 26, 1984 (first declaration)  
August 15, 1984 (second declaration)

**Location**

Rio Grande do Sul State,  
Santa Catarina State

**No. Dead**

27

**No. Affected**

About 250,000

**Damage**

In both areas housing, agriculture, transportation networks, water supplies, power and telephone lines, and sanitary facilities were heavily damaged

**The Disaster**

Heavy rainfall in the State of Rio Grande do Sul during June caused the worst flooding in the area since 1941. All the major rivers overflowed their banks as water levels rose an average of 5.5 meters above normal. The city of Porto Alegre and 37 other municipalities were inundated, forcing over 12,000 people to abandon their homes and seek refuge elsewhere.

Unusually heavy winter rains, which had begun in June, continued throughout July and August in southern Brazil. By mid-August, over 30,000 people in Santa Catarina were homeless and damage to roads and other infrastructure was severe.

The total damage to housing, agriculture, and transportation was estimated at over one billion dollars in the two states.

**Action Taken by the Government of Brazil (GOB)**

In both Rio Grande do Sul and Santa Catarina, national civil defense and local authorities took the lead in responding to the flooding. States of emergency were declared and the GOB released over \$21 million in relief funds. The local governments in each state provided temporary shelters for the homeless and distributed blankets, clothing, food, and building materials. Varig, the Brazilian airline, provided free transportation of relief supplies donated by an American voluntary agency.

**Assistance Provided by the United States Government**

In response to the flooding in Rio Grande do Sul, the U.S. Ambassador declared that the situation was of a magnitude to warrant USG assistance and authorized a donation of \$15,000 to the local relief effort. A check for this amount was presented to the Governor of Rio Grande do Sul for the purchase of building materials and food.

As the rains continued and the flooding affected a wider area, the U.S. Ambassador issued another disaster declaration, this time for the State of Santa Catarina. The amount of \$25,000 was contributed for the local purchase of blankets, bedclothes, and warm clothing.

**TOTAL \$40,000**

**Assistance Provided by U.S. Voluntary Agencies**

CWS — sent \$5,000 in cash, 10 MT of skim milk powder worth \$8,130, and 16,850 water purification tablets valued at \$11,000; Interchurch Medical Association donated medical supplies valued at \$33,340; 1,300 blankets were sent from the United States at a cost of \$5,200 and another 3,700 were supplied from an in-country stockpile.

**TOTAL \$62,670**

**Assistance Provided by the International Community**

None reported.

**Fire****Costa Rica****Date**

February 29, 1984

**Location**

San Jose

**No. Dead**

None

**Damage**

Approximately \$2.5 million in drugs and medical supplies were destroyed

**The Disaster**

A fire in a warehouse consumed over \$2.5 million worth of medical and surgical supplies representing the entire store of such supplies in Costa Rica. The supplies had been stored in the warehouse by the Costa Rica Social Security (CRSS) prior to being sent to regional centers which service the nation's network of health posts and hospitals. All hospitals in the country are operated and supplied by CRSS.

While most of the loss did not involve emergency supplies, many articles vital to the provision of medical care were destroyed. The fire depleted these supplies, creating a potentially life-threatening situation.

**Action Taken by the Government of Costa Rica (GORC)**

The Director of the CRSS, Dr. Guido Miranda, ordered a detailed assessment of the losses from the fire. A report was prepared identifying priority items; total in-country supplies; and anticipated depletion date.

Because the CRSS had no mechanism for emergency procurement and any stocks ordered would take at least two months to arrive, CRSS director Miranda turned to the United States for assistance in obtaining a two-month supply of critical materials.

**Assistance Provided by the United States Government**

After receiving the request from the Director of CCSS, the Chief of Mission determined that a potentially life-threatening situation created by the loss of medical supplies in the fire existed and declared that U.S. disaster assistance was warranted. On March 9, the Chief of Mission requested assistance from OFDA in procuring a two-month supply of medicaments.

OFDA's Medical Advisor identified the most critically needed supplies as well as sources for obtaining the drugs.

At the request of USAID/Costa Rica, the following supplies were procured in the United States and shipped via air freight to San Jose:

Penicillin V, 400,000 units — 200 bottles of 100 tablets

Surgical gloves — 9,000 pairs

Chromic 0, 54 inch sutures — 75 dozen

Penicillin G, potassium 5 million units — 7,000 bottles of each

Sulfamethoxazole/Trimethoprim — 475 bottles of 500 tablets each

Sterilization monitors — 4 boxes of 100 each

Total cost of procurement and transport of these supplies was \$25,000.

**TOTAL \$25,000**

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community**

PAHO — Resident Representative reviewed CRSS list of required drugs and assisted in establishing priorities relative to the CRSS request.

**Civil Strife and  
Displaced Persons****El Salvador****Date**

April 1984

**Location**Departments of Morazan,  
San Miguel, and La Union**No Dead**

Not reported

**No. Affected**

6,400

**Damage**

Not reported

**The Disaster**

After four years of civil strife in El Salvador, the number of people displaced by the conflict had grown to approximately 500,000. By April 1984, some 309,000 displaced people were registered with the government and receiving assistance, while another 150,000 to 200,000 were unregistered. In addition, several thousand people had taken refuge in neighboring countries.

Toward the end of April, reports indicated significantly increased numbers and movement of displaced persons and returning refugees in the departments of Morazan, San Miguel, and La Union. Approximately 1,400 Salvadoran refugees had returned from Honduras, citing the relocation of the Honduran refugee camps away from the border as the reason. Additionally, an estimated 5,000 people had fled their villages in northern Morazan and San Miguel, reportedly to escape both conscription and pressure to support the guerrillas.

Many of the newly displaced were soon accommodated in surrounding communities, particularly in the marginal areas around the city of San Miguel. However, some 400 families (2,200 persons) remained in the care of government and voluntary relief agencies. Of that number, about 200 families were moved to two abandoned Salvadoran Agrarian Transformation Institute (ISTA) farms, one in Moncagua, San Miguel, and the other in San Carlos, Morazan. The other 200 families were temporarily sheltered in public facilities in San Miguel.

**Action Taken by the Government of El Salvador (GOES)**

The National Commission for Assistance to Displaced Persons (CONADES) and the GOES Ministry of Health provided emergency food, shelter, and medical services to the newly displaced persons. The Salvadoran army transported returning refugees from the Honduran border to the city of San Miguel, where they were housed in public accommodations.

CONADES moved approximately 200 of the displaced families to two abandoned ISTA farms, where limited shelter was available. The GOES proposed the construction of emergency shelters for up to 200 additional families on the two farms.

**Assistance Provided by the United States Government**

The U.S. Ambassador, Thomas R. Pickering, determined on May 30, 1984 that an ongoing disaster existed in El Salvador with respect to persons displaced by the continuing civil strife. In view of unconfirmed reports of additional displaced persons in northern Morazan and San Miguel, he recommended that USG resources be made available to provide emergency shelter for 400 families.

In response to the Mission's proposal, OFDA authorized an increase of \$75,000 to the existing funds for emergency housing for displaced persons. The increase would be used to initiate the construction of shelters for 200 families on the ISTA farms. Other improvements on the farms would be carried out through works projects of the USG/GOES "Health and Jobs for Displaced Families" program.

**TOTAL      \$75,000**

It should be noted that OFDA had already provided \$546,372 in fiscal year 1984 for the continuing displaced persons disaster in El Salvador. For a detailed account of the disaster and all USG assistance prior to the new determination, see the OFDA case report, *EL SALVADOR/Displaced Persons (FY 80, FY 81 and FY 82)*.

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community****International Organizations**

ICRC — which had been active in the displaced persons relief effort in El Salvador since 1980, provided food, medicines, and clothing to the newly displaced people.

*Displaced Salvadoran family.*



**Emergency****Grenada****Date**

October 25-November 2, 1983

**Location**

Islands of Grenada and Carriacou, most combat activity in southern part of Grenada.

**No. Dead**

18 U.S. military, 45 Grenadians (military and civilian), 24 Cubans

**No. Injured**

151 U.S. military (combat and non-combat), 337 Grenadians, 57 Cubans

**No. Affected**

The entire island population of 89,000 was affected to some degree; an estimated 2,000 persons were displaced by the military action; 1,000 took temporary shelter in centers established by the U.S. military.

**Damage**

Considerable damage to five government buildings, 50-60 private homes (10 destroyed), and a mental institution; some damage to roads in the port and Point Salines areas due to movement of heavy equipment; minor damage to water and electrical facilities; extensive damage to the Cable and Wireless and two telephone exchanges serving south and southwestern Grenada; disruption of health and educational services due to loss of expatriate personnel and normal supply channels; serious business losses through combat action and looting; and an increase in unemployment

**The Disaster**

A series of events in Grenada in mid-October 1983 created an unstable political situation and heightened the concern of the USG for the safety of some 1,000 U.S. nationals on the island, the majority of whom were students at St. George's Medical School.

On October 13, Grenadian Prime Minister Maurice Bishop was placed under house arrest by ultra-leftist rivals within his People's Revolutionary Government. Loyalists staged a demonstration on October 19 and freed their leader, but an undetermined number of the demonstrators were killed when army troops opened fire on the crowd. Bishop, three members of his cabinet, and two union leaders were taken off and executed. A Revolutionary Military Council, headed by Army General Hudson Austin, seized power and imposed a 24-hour shoot-on-sight curfew. The airport was also closed temporarily.

The Governor-General of Grenada, Sir Paul Scoon, as the only representative of legitimate government authority, appealed to other nations in the Organization of Eastern Caribbean States (OECS) to intervene and help restore order. The OECS nations, along with Jamaica and Barbados, formally requested U.S. assistance on October 21, citing the unprecedented threat to the peace and security of the region created by the vacuum of authority in Grenada.

In responding to this appeal, the President of the United States gave three principal reasons for undertaking the military operation in Grenada which began on October 25:

- to protect our own citizens;
- to facilitate the evacuation of those who wanted to leave; and
- to help in the restoration of democratic institutions in Grenada.

The military action, which was conducted by U.S. troops accompanied by Caribbean forces, ended November 2 with the island secured. The events prior to and during the intervention caused considerable disruption in essential services as well as some damage to buildings and infrastructure. An estimated 2,000 people were displaced as some 50-60 private homes were damaged. Seventeen civilians were killed when one wing of a mental hospital was destroyed by U.S. forces responding to artillery fire from the building.

A critical shortage of health care and educational services resulted from the departure of a large number of expatriate physicians, teachers, and other specialists who were supporters of the Bishop government. Supply channels from Eastern Bloc countries were also disrupted, creating temporary shortages in medicines and other commodities. Vaccines were lost when the destruction of power poles, lines, and transformers temporarily interrupted electrical service. A potentially life-threatening situation developed at St. George's Hospital, which depended entirely on the external grid and lacked power for some time.

Water lines were slightly damaged as a few leaks developed as a result of weapons fire. Road damage from the intervention was extensive mostly in the Grand Anse/St. George's area; however, the roads, like the water, sewage, and electrical systems, were already in a state of disrepair. The Point Salines airport, which was under construction by Cuban workers, suffered only minor damage, but its operation came to a complete halt, leaving over 400 Grenadians unemployed.

The increase in unemployment, due in part to the disbanding of the army and the temporary closing of the medical school, was expected to be one of the most serious short-term problems. Small businesses suffered losses from combat, looting, and the general disruption of commercial activity. The economic impact on the country was further felt in the loss of assistance and trade with communist bloc countries. A sharp decline in revenues was expected in the immediate aftermath of the intervention until new sources of income could be established.

### **Action Taken by the Government of Grenada (GOG)**

Governor General Scoon, who had been under house arrest during the army take-over, assumed executive authority after the intervention. He declared a state of emergency during the period of hostilities, and on November 15 he named a nine-member Advisory Council to serve as an interim government.

Various Grenadian ministries helped identify needs for critical services and cooperated with the U.S. military and USAID in carrying out relief and rehabilitation projects. The GOG Ministry of Health (MOH) formally requested U.S. assistance in meeting emergency health requirements. Temporary placements were arranged for the mental patients who survived the accidental bombing of the Richmond Hill facility, and all ambulatory patients were discharged from the St. George's General Hospital the day after the intervention so that combat casualties could be treated. The MOH worked with USAID to restore solid waste disposal services and also received a grant from the U.S. to improve sanitation facilities in public areas.

The Ministry of Construction (MOC) identified priorities for road repair and reconstruction and signed agreements with the U.S. for repair of deteriorated roads. The GOG/MOC contributed a total of \$74,815 to cover the cost of managing the projects. The MOC, acting through the MOH, served as the prime contractor for all work required to correct distribution and pumping problems in the sewage system.

The Ministry of Education conducted a survey of educational needs with the assistance of USAID and U.S. Army civic action officers to determine what supplies were needed to reopen schools.

Local voluntary agencies also assisted the relief effort. The Grenada Council of Churches provided a small supply of medications and, with other welfare groups, helped distribute food and other relief items to the displaced persons.

### **Assistance Provided by the United States Government**

The U.S. Ambassador in Barbados, Milan D. Bish, determined on October 27 that a disaster existed in Grenada and exercised his disaster assistance authority. On the same day, a coordinated Department of State (DOS) and Department of Defense (DOD) relief operation began. All four U.S. military services and the Agency for International Development participated in the effort, with activities coordinated by A.I.D.'s Regional Development Office/Caribbean (RDO/C). The Director of OFDA was present in Grenada to assist initial relief efforts, and OFDA also sent a disaster specialist to assess needs and priorities for assistance. A Disaster Area Survey Team (DAST), which included technical experts from USAID as well as from the military, worked closely with an A.I.D. assessment team fielded by RDO/C. A U.S. Mission was established in Grenada on October 30.

Even as combat continued near the Point Salines airfield, the DAST began to assess damages and coordinate relief operations. Caring for the displaced Grenadians was the most urgent initial requirement. Using captured Cuban foodstuffs and food provided by USAID (including \$5,000 worth purchased by local churches with USAID funds), a distribution plan was developed. OFDA provided the Mission with an additional \$250,000 for the local purchase of food, medicines, and other relief supplies. The U.S. military set up an office to process civilian claims for property damage.

In response to a Mission request, OFDA asked the DOD to airlift the following items from A.I.D.'s stockpile in Panama: eight 3,000-gallon water tanks, 1,000 five-gallon collapsible water jugs, and five generators. In addition, the DOD was asked to lend two 250-gallon water buffaloes from its own stocks and to provide one jeep with driver/mechanic and one environmental engineer. OFDA also purchased communications equipment (transceivers, hand-held radios, a VHF repeater, etc.) to facilitate the coordination of relief activities. USAID cooperated with the military to bring technicians from Cable and Wireless to the island to restore international communications.

Because the interruption in water, sanitary, and basic medical services threatened public health, the Mission asked OFDA to arrange for an epidemiologist from the Centers for Disease Control to investigate health conditions. Accordingly, a team of health experts conducted a survey in early November. The water supply was restored throughout most of the island by November 3, and initial needs for medical personnel and pharmaceuticals were furnished by USAID and the military. OFDA procured cast materials and traction devices as well as vaccine to prevent an outbreak of animal rabies.

OFDA also funded the travel and administrative expenses of a U.S. psychiatrist who conducted an assessment to assist planning for the damaged mental hospital. Short-term improvements to the hospital were made within days of the intervention, and USAID provided \$1,000 for emergency food and contracted for clean-up of rubble. Rehabilitation of the existing facility was undertaken by A.I.D. while alternate hospital designs were being reviewed.

As the emergency phase was ending in early November, A.I.D. proposed a \$3 million rehabilitation grant to Grenada, with the objectives of maintaining public health standards and restoring basic public services. Creating employment opportunities was an important consideration in designing the project. Needs identified by the DAST in the areas of health, social services, housing, transportation, and public utilities formed the basis for the projected assistance. The following were among the proposed program elements:

- recruit medical personnel to replace departed health workers;
- supply medical commodities;
- supply compressors/pumps for the sewage system;
- supply pipe, pumps, motors, and water treatment chemicals for the water system;
- supply transformers, wood poles, and conductors for the electrical distribution system;
- repair war-damaged and economically important roads; and
- recruit teachers and supply educational materials.

The most critical portions of the rehabilitation activities were funded by OFDA, with the balance being financed by other A.I.D. offices and other sources. As part of the program, OFDA provided two Mission allotments — one in the amount of \$500,000 on November 10 and another for \$661,725 on December 9. These funds were used for OFDA-approved projects. In addition, OFDA reserved funds for the purchase and transport of items that could more easily be procured in the United States. Such items included medical supplies and pharmaceuticals needed to deliver basic health and dental services; eight generators (for the cold chain system), electrical conductor cable, utility poles, and transformers for the power system; chlorination equipment for the water supply system; and two air compressors, pumps, and pipe to improve the functioning of the St. George's sewage pumping station.

The health component of the rehabilitation program also utilized the findings of the health assessment team. The team's preliminary evaluation was followed by additional surveys in December to determine pharmaceutical and laboratory requirements. As a result of these investigations, critical medical needs were identified and long-term measures recommended.

A cooperative agreement with Project HOPE was drawn up in early January 1984 to recruit medical personnel. The project fielded some 27 health specialists and support staff to provide medical and dental services in Grenada for a 13-month period at an approximate cost to A.I.D. of \$1.7 million. OFDA provided \$200,000 of that amount for the first three months of operation, and A.I.D.'s Latin America Bureau supplied the remaining \$1.529 million from Economic Support Funds.

U.S. military participation in the relief and rehabilitation effort included distribution of relief supplies by the Civil Affairs (CA) reserve components. CA officers also helped monitor the technical aspects of A.I.D. projects in Grenada.

#### Summary of USG Assistance

Ambassador's Authority for the local purchase of food . . . . .	\$25,000
Reimbursement to DOD for airlift of relief supplies . . . . .	\$181,748
Travel and administrative expenses of medical and disaster specialists . . . . .	\$17,676
Communications equipment, including transport . . . . .	\$15,041

Sewerage system equipment, including transport . . . . .	\$24,887
Chlorination equipment, including transport . . . . .	\$8,400
Electrical equipment, including transport	\$147,624
Drugs and medical supplies, including transport . . . . .	\$279,991
Grant to Project Hope . . . . .	\$200,000
Mission allotment for local purchase of food and relief supplies . . . . .	\$250,000
Mission allotment for engineering project . . . . .	\$500,000
Mission allotment for local cost of approved activities . . . . .	\$661,725
Total International Disaster Assistance (IDA) funds . . . . .	\$2,312,092
A.I.D. Grant to Project Hope . . . . .	\$1,529,000
USAID contribution of food and pharmaceuticals (partial value) . . . . .	\$42,000
U.S. military contribution of pharmaceuticals and other supplies (partial value) . . . . .	\$35,000
Total other USG assistance . . . . .	\$1,606,000
<b>TOTAL</b>	<b>\$3,918,092</b>

U.S. companies — over \$20,000 worth of eye medications.

U.S. ophthalmologists (two) — four to six months as volunteers in eye clinics.

U.S. Pharmacopeia — 28 copies of a pharmaceutical publication.

**TOTAL      \$1,464,286**

**Assistance Provided by the International Community**

**International Organizations**

EEC — 200 tons of skimmed milk powder valued at \$126,000.

ICRC — four delegates to Grenada to visit Cuban and Grenadian prisoners and to supervise the repatriation of Cuban nationals, including the wounded and dead. This humanitarian assistance was valued at \$274,474.

**Voluntary Agencies**

Barbados Red Cross — issued appeals for food, clothing, and money to assist Grenada.

A Catholic Association in Canada — 500 pounds of relief supplies, value not reported.

Grenadian Association of Canada — 3,000 pounds of clothing and foodstuffs, value not reported.

Grenadian Association of England — one x-ray machine, value not reported.

Sweden Save the Children — pledged two grants, totaling \$100,000, for the repair, refurbishing, and maintenance of medical stations.

**TOTAL      \$500,474**

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

Church World Service (CWS) — medical supplies (\$75,000), clothing and blankets (\$57,286), and cash (\$5,000). CWS also planned to send 50 tents, 100 camp beds, and non-perishable foodstuffs, value not reported.

Hospital Relief Fund and Holy Cross Hospital (both in Maryland) — an EKG machine, value not reported.

International Eye Foundation — a physician to provide temporary eye care and over \$7,000 worth of medicines for emergency care of civilians and military personnel with eye injuries or disease.

Project HOPE — medical equipment and supplies, valued at \$1.3 million, for interim health care program (staff expenses funded by USG).

Sister Cities International — warehouse and assistance in moving relief supplies, value not reported.

**Civil Strife and Displaced Persons**

# Guatemala

**Date**

October 25, 1983 (first declaration)  
December 9, 1983 (second declaration)

**Location**

The northwest area of Chimaltenango and the western highlands of Huehuetenango and El Quiche

**No. Dead**

Not reported

**No. Affected**

Hundreds of displaced families in Chimaltenango; estimates as high as 250,000 displaced persons in Huehuetenango and El Quiche, and 210,000 in Quetzaltenango

**The Disaster**

In the department of Chimaltenango in late 1982 confrontations between army troops and guerrilla forces destroyed hundreds of homes and damaged roads. Many who survived the violence returned to their communities to find their homes burned and their possessions gone. Further military operations near the Mexican border in the departments of Huehuetenango, El Quiche, and Alta Verapaz displaced still more people in mid-1983, a situation which exacerbated the already severe health and economic problems of the area and contributed to a lack of adequate shelter and food.

**Action Taken by the Government of Guatemala (GOG)**

The National Reconstruction Committee (NRC), which is the Guatemalan organization in charge of coordinating relief efforts in times of emergency, lacked adequate resources to deal with the increasing numbers of displaced persons. In October and again in December, the GOG requested U.S. assistance in obtaining food, medicines, clothing, and other emergency support materials.

Local Guatemalan voluntary organizations, such as PAVA (Programa de Ayuda a los Vecinos del Altiplano), Caritas of El Quiche diocese, and the Behrhorst Clinic in Chimaltenango, distributed relief supplies and conducted surveys and needs assessments of the displaced.

**Assistance Provided by the United States Government (USG)**

The U.S. Ambassador made a disaster determination on October 25, 1983, in response to the situation in the Department of Chimaltenango resulting from civil strife. On November 7, he used his disaster assistance authority to donate \$25,000 to the Behrhorst Foundation for immediate assistance to the displaced in the Chimaltenango area. The Behrhorst Foundation, assisted by PAVA, provided food, housing materials, medicines, basic tools, and seeds to the displaced. In January 1984, \$20,000 was added to the Ambassador's authority

In response to a request by the U.S. Mission in Guatemala, OFDA sent a disaster specialist to conduct a needs assessment in El Quiche. Because the work was performed as part of a long-term contract with OFDA, an exact itemization cannot be provided.

Another disaster declaration was made on December 9, 1983, in response to the increasing number of displaced persons in the Guatemalan highlands near the Mexican border. The Ambassador's authority was granted to CRS for relief efforts in El Quiche . . . . . **\$25,000**

An increase in the Ambassador's authority was used for the local purchase of medicines . . **\$10,000**

In February 1984 OFDA approved a mission allotment of \$35,000 to be used for needs assessment in Huehuetenango, El Quiche, Playa Grande, and the western Peten . . . . . **\$35,000**

A month later, additional allotments of \$63,215 for PAVA and \$15,000 for Project Hope were approved to conduct surveys in the departments of San Marcos and Quetzaltenango . . . . . **\$78,215**

A mission allotment of \$3,000 was approved in April for local administrative costs . . . . . **\$3,000**

Total OFDA assistance . . . . . **\$196,215**

As a result of the PAVA and Project Hope assessments and the increasing numbers of displaced persons in the highlands, a Displaced Persons Assistance Project was authorized in July 1984, and \$500,000 of Development Assistance funds were granted to the Salvation Army. This sum was combined with the PAVA grant, and PAVA and Project Hope participated as sub-grantees. The funds granted to the Salvation Army were to provide short-term (seven months) assistance to approximately 5,000 families displaced by violence in the departments of Huehuetenango, San Marcos, Quetzaltenango, and El Quiche. Assistance included medical teams and medicines, seeds and tools, and materials to make clothing, household items, and shelter. The project also included the procurement and transport of WFP food commodities and NRC roofing materials . . . . . **\$500,000**

**TOTAL \$696,215**

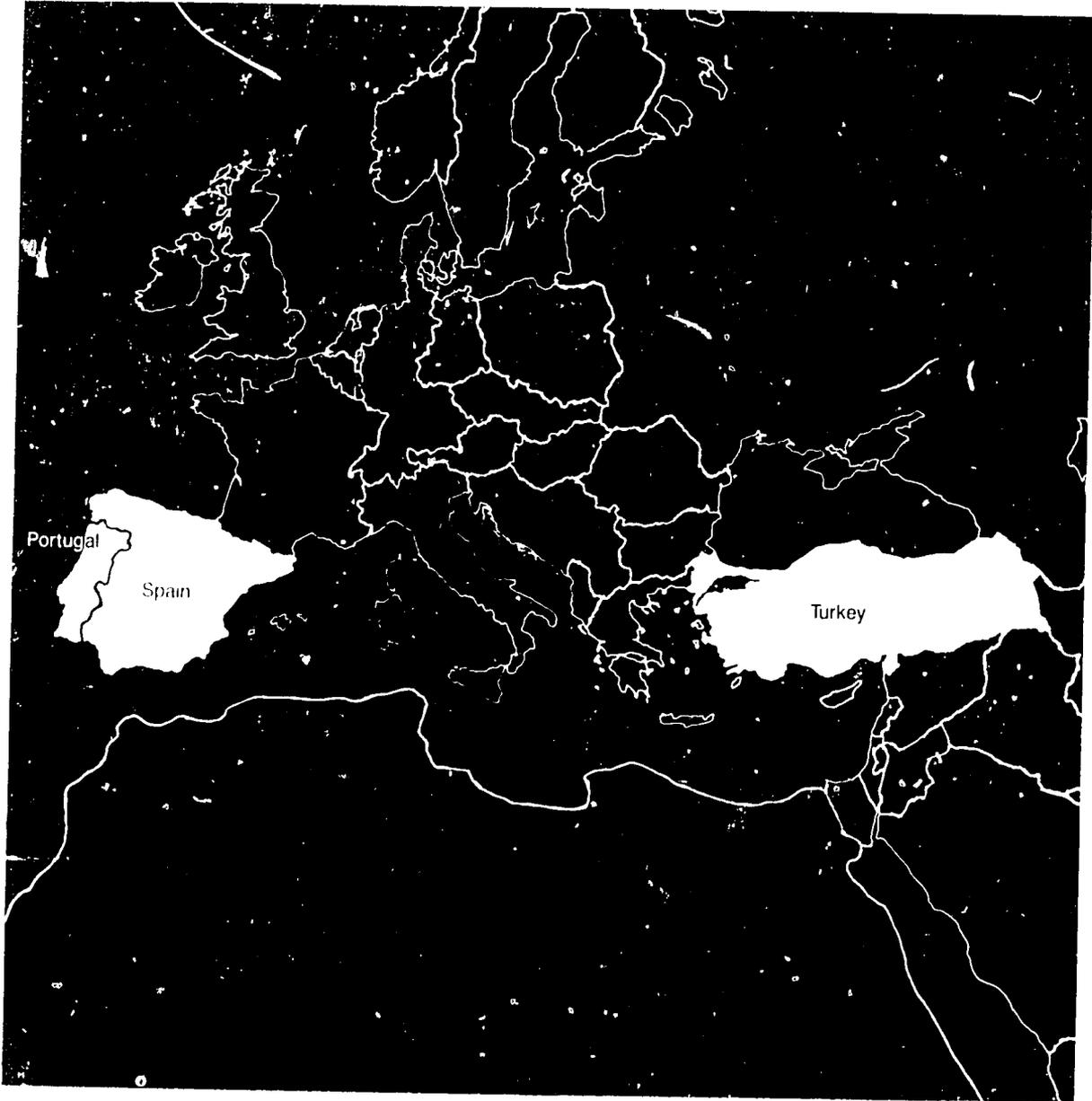
**Assistance Provided by U.S. Voluntary Agencies**

The Salvation Army, Project Hope, and CRS received grants from the USG (see above).

**Assistance Provided by the International Community**

None reported.

# Europe and the Near East



Portugal – Floods	86
Spain – Floods	87
Turkey – Earthquake	88

**Floods****Portugal****Date**

November 18-21, 1983

**Location**

Lisbon and environs

**No. Dead**

10; 10 missing

**No. Affected**

Estimated 2,000 persons homeless

**Damage**

Total damage to Louros and Cascais regions estimated at \$95 million.

— Infrastructure (public buildings, sewerage systems, telecommunications, roads, bridges and railway lines): \$43.5 million

— Agriculture (crop losses and agricultural rehabilitation): \$15.5 million

— Industry (equipment, manufactured goods, raw materials): \$12 million

— Commerce (loss of stocks and infrastructure): \$9.5 million

— Housing (buildings and private property partially or totally destroyed): \$14.5 million

**The Disaster**

Heavy rains fell on the area surrounding the Tago estuary and the capital city of Lisbon continuously for four days, causing flooding in the northern and western sections of Lisbon, in the towns of Cascais, Cacem, Sintra, Odivelas, Sacavem, and Loures, and along the Tejo river from Alverca to Santarem. Ten persons were reported dead, another ten were reported missing, and approximately 2,000 persons (most of them poor, living in low-lying areas) were left homeless. The floodwaters caused widespread damage to houses, public buildings, telephone and electric cables, roads, bridges, and railway lines.

**Action Taken by the Government of Portugal (GOP)**

The National Civil Protection Service immediately began relocating 450 low-income displaced families in vacant buildings, summer schools, and tents. Meals, medical care, and other necessities were provided to the residents of these temporary shelters. An intergovernmental committee, comprised of officials from the ministries of Industry, Commerce, Agriculture, Defense, Social Welfare, and Public Works, was established to coordinate emergency relief and reconstruction.

**Assistance Provided by the United States Government**

On November 21, U.S. Ambassador Henry Allen Holmes determined that the number of persons left homeless by the flood warranted USG assistance and made a donation of \$25,000 to the Portuguese Red Cross.

**TOTAL      \$25,000**

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community****International Organizations**

EEC — contributed a cash grant of \$82,200 through the LORCS.

LORCS — launched an appeal for air mattresses, sleeping bags, tents, field cots, condensed milk, and canned meat for the homeless.

UNDRO — sent a relief officer to consult with GOP officials and visit affected areas and emergency shelters. Gave \$25,000 in cash for emergency supplies.

**Governments**

Germany, Fed. Rep. — provided blankets, air mattresses, and milk powder, valued at \$31,150.

United Kingdom — gave cash grants totaling \$16,500 to LORCS and the Louros and Cascais local authorities.

**Voluntary Agencies**

Belgium Red Cross — donated \$3,650 in cash to Portuguese Red Cross, via LORCS.

**TOTAL      \$158,500**

**Floods****Spain****Date**

November 1-21, 1983

**Location**

Town of San Juan del Puerto in Huelva Province in southern Spain

**No. Dead**

None reported

**No. Affected**

500 families (about 1,600 people) homeless -- almost 30% of the population

**Damage**

Public and private buildings, including 400 dwellings, a school, and a church, were damaged or destroyed.

**The Disaster**

Torrential rains from November 1 through November 21 caused flooding in the town of San Juan del Puerto in southern Spain. About 500 families in the town lost their homes and all personal possessions in the floods.

**Action Taken by the Government of Spain and the Spain Red Cross**

By mid-November, Spanish Red Cross workers had erected barriers to reduce the floodwaters' flow into people's homes. They also cleared debris which had been preventing the water from flowing into the wetlands and removed accumulated mud from the streets and many buildings.

The Red Cross established shelters for the more than 1,600 homeless in a psychiatric hospital and several other buildings and distributed mattresses, clothes, and other supplies.

On November 22, the junta of Andalusia asked the central government to declare the towns affected by the floods to be disaster areas. The government endorsed the request and San Juan del Puerto became eligible for central government aid.

**Assistance Provided by the United States Government**

On November 18, Ambassador Thomas O. Enders declared that the torrential rains had created a disaster situation in the town of San Juan del Puerto. Exercising his disaster assistance authority, he contributed one million pesetas (US\$ 6,525) to the Spanish Red Cross to help in its relief activities.

**TOTAL      \$6,525**

**Assistance Provided by U.S. Voluntary Agencies**

None reported.

**Assistance Provided by the International Community**

None reported.

**Earthquake****Turkey****Date**

October 30, 1983

**Location**

Provinces of Erzurum and Kars in Eastern Turkey

**No. Dead**

1,346

**No. Affected**

33,000

**No. Homeless**

33,000

**Damage**

Many villages were completely destroyed, with thousands of houses in ruins, roads blocked by rubble and landslides, and 30,000 livestock killed.

**The Disaster**

Early on Sunday morning, October 30, 1983, a major earthquake rocked the provinces of Erzurum and Kars in eastern Turkey. The quake, which registered 7.1 on the Richter scale at its epicenter in Horasan, was felt as far as 400 km away.

In the province of Erzurum, the districts of Horasan, Narman, and Pasinler were the most affected. Ninety percent destroyed, Horasan district suffered the greatest damage and loss of life with 1,070 bodies recovered from the rubble. Eight villages were badly damaged and 133 people died in Narman district. In Pasinler, six villages suffered extensive damage and 23 people were killed. In the adjoining province of Kars, 56 people were killed and six villages were heavily damaged by the quake.

Snow, rain, and mud hampered relief efforts while landslides blocked roads and trails. For several days relief workers were unable to reach the more isolated villages, but by November 3 most villages had been contacted. The death toll rose to 1,346, with 1,137 injured; most victims died of suffocation as their homes collapsed around them. Built of mud and stone, the traditional housing of the region could not withstand the seismic shock. As a result, houses crumbled and buried their inhabitants. Of the region's 800,000 residents, approximately 33,000 were left homeless.

**Action Taken by the Government of Turkey (GOT)**

On the day of the quake, the Minister of Reconstruction and Resettlement and the Minister of Health visited the stricken area. The following day, Turkish President Ercen and Prime Minister Bulen Yulusu traveled to Erzurum. Nationwide clothing and blood drives were organized to benefit the injured and homeless.

The GOT military and the Turkish Red Crescent Society (TRC) mobilized immediately in response to news of the earthquake. The military's Ninth Corps provided overall direction, establishing an Emergency Command Center at its headquarters in Erzurum. The disaster zone was divided into three sub-regions in which relief operations were administered by major generals. Helicopters and other military aircraft were enlisted to transport relief supplies and transfer the injured out of the area.

Search and rescue teams were organized to identify victims and free them from the rubble of their destroyed homes. Aftershocks and snow hampered efforts to reach remote villages, and landslides rendered some of the more isolated villages inaccessible for several days. TRC sent 45 relief workers to the disaster scene, where they organized four field kitchens and distributed 6,000 winter tents and 30,000 blankets. Medical supplies and blood donations were also made available.

On November 2, the GOT formally asked UN-DRG to launch and coordinate an international appeal for assistance.

By November 9, the Ninth Corps turned over responsibility for the relief effort to the Governor of Erzurum and by November 11, the regional disaster management was also under civilian direction. Three refugee centers were established to feed and house those unable to return to their homes. Residents of severely damaged villages in isolated areas were urged to remain in the refugee centers for the winter as snow and rain made it impossible for the GOT to commence repairs and reconstruction in those areas.

**Assistance Provided by the United States Government**

When reports of the earthquake and its effects reached Ankara, U.S. Ambassador Robert Strausz-Hupe declared that the earthquake constituted a disaster of a magnitude warranting U.S. Government assistance. On October 31, a check for \$25,000 was sent to the Turkish Red Crescent Society for use in meeting victims' immediate relief needs. Two days later, Ambassador Strausz-Hupe visited the disaster site with other USG personnel and received a briefing on the Turkish relief operation.



*Earthquake damage.*

As assessment reports were received and the GOT began to indicate the types and quantities of various relief commodities required, the USG offered further assistance. Through OFDA, four U.S. Department of Defense C-141s were mobilized to transport relief supplies from the OFDA disaster stockpile in Leghorn, Italy to Incirlik, Turkey. There the commodities were transferred to C-130s and flown directly to Erzurum. By November 4, twelve C-130s had delivered the following:

- 1,043 tents
- 15,677 wool blankets
- 250 110 x 25 ft. rolls of plastic sheeting
- 50 fifty-person cooking stoves
- 50 gas cans
- 2,000 5-gallon water containers
- 8 collapsible water tanks (3,000 gal. capacity)
- 2 drums of chlorine
- 2 water purification units with 2,000 gal./hr. capacity and support equipment

On November 5, 240 additional rolls of plastic sheeting arrived in Erzurum from Leghorn to be used for temporary repair of damaged homes and insulation for tents. Six U.S. military personnel

from Leghorn, Italy worked with the Turkish military to oversee distribution of supplies donated by the U.S. They also helped erect tents and train people to operate the field stoves. A 10-passenger snow vehicle loaned by the U.S. military proved valuable in the rough and snow-covered terrain.

Potable water became a critical need as the displaced population arrived in the GOT shelter areas. On November 4, OFDA dispatched a sanitary engineer, logistician, and two maintenance and training technicians to assist GOT and U.S. Embassy personnel in assessing water needs and resources. The team confirmed the need for water purification units and selected an appropriate site for the units. Within a short time the units were in operation.

The U.S. technical team trained GOT personnel to install and maintain the equipment. The OFDA team received excellent support from the GOT Ninth Corps, from the local GOT military facility at Erzurum, and from the six person U.S. military team.

Power lines in many areas of the affected provinces were knocked down, thus disrupting electricity for regular and relief operations. In response to a GOT request, the USG procured four 36 kva diesel generator sets which were subsequently installed.

#### Summary of USG Assistance

Ambassador's Authority	\$25,000
Tents	\$268,166
Blankets (to be replaced in FY 1985)	\$73,195
In-kind contribution of water containers, valued at \$2,950; field stoves valued at \$6,250; gas cans valued at \$250; and water tanks and chlorine valued at \$15,858	
Plastic sheeting	\$137,322
Replacement freight	\$37,000
DOD airlift of OFDA equipment and supplies	\$426,028
Services and travel of two contract engineers	\$26,062
Local procurement of extra piping	\$10,000
Shipping of 120 filter candles (valued at \$2,880) for water purification units	\$587
Local procurement of generators	\$40,000
TDY of A.I.D. Sanitary Engineer	\$2,261
Total OFDA FY 84	\$972,426
Total OFDA FY 85	\$73,195
<b>TOTAL</b>	<b>\$1,045,621</b>

#### Assistance Provided by U.S. Voluntary Agencies

CWS — contributed \$5,000 in cash to the World Council of Churches and issued an appeal for \$75,000 for reconstruction assistance. In response to this appeal, \$73,342 was collected.

**TOTAL** \$78,342

#### Assistance Provided by the International Community

##### International Organizations

EEC — contributed an unspecified quantity of winter tents valued at \$84,507

UNDRO — dispatched a relief coordination officer to Erzurum to assess relief needs and issued an international appeal for assistance.

UNDP — Resident Representative in Ankara hosted a meeting of international donor representatives on November 4 at which the GOT priority needs were presented; made cash grant of \$30,000.

UNICEF — 1,300 anoraks and 1,300 boots (for children).

World Health Organization — sent a sanitary engineer to affected areas on November 9 to update previous field assessments.

##### Governments

Australia — contributed \$370,370 in cash in response to the UNDRO appeal.

Austria — contributed \$109,300 in cash through UNDRO.

Belgium — 200 family-size winter tents with an estimated value of \$28,169.

France — one ton of protein tablets and \$12,578 in cash.

Germany, Fed. Rep. — 4,600 quilts, 7,000 blankets, and 2,100 parkas flown in, with an estimated value of \$114,800; 1,000 bottles each of sodium chloride, darrow, and dextrose, valued at \$3,800; and \$334,248 in cash to the German Red Cross to support LORCS program.

Greece — 500 tents, 1,500 blankets, 13 bundles of clothing, 45,000 vaccines and 8,000 serums.

Iran — \$4,082 in cash; 10 tons of rice, 400 tents, 10 large tents, 8,000 blankets, and 30 cases of clothing.

Italy — 120 eight-person tents, 960 beds, and 2,000 blankets, transported during three flights with total estimated value of \$472,000. Subsequently, an unspecified quantity of stoves, valued at \$233,000, were also provided.

Japan — cash grant of \$400,000 to the Turkish government.

Jordan — two planeloads of miscellaneous relief supplies.

Kuwait — 22.5 tons of family boxes, 200 tents (12'x12'x10'), 6,000 blankets, and 10 tons of medical supplies and equipment, all transported in two C-130s and one DC-9.

Libya — two planeloads totaling 80 tons of relief material.

Luxembourg — 350 sleeping bags, 300 wool blankets, and 500 wool overcoats.

Netherlands — 36 large tents, 100 tarpaulins (12x6 m), 30 tarpaulins (5x3.5 m), 2,100 blankets, 1,500 kerosene tent heaters, and 2,300 jerrycans with a total value of \$441,000.

Norway — contributed \$408,163 in cash, 150 tents and 150 stoves valued at \$204,082.

Pakistan — 600 tents, 5,000 blankets, 340 cartons of medicines, and 8 cartons of surgical instruments with an estimated total value of \$310,000.

Saudi Arabia — contributed \$10,000,000 in cash.

Sweden — contributed \$384,600 in cash to the Swedish Red Cross in support of LORCS program.

Switzerland — two disaster rescue and health service teams (52 people and 18 dogs), 5 tons of tents, blankets, and medical supplies, and 30 Iso-Snelters, with total estimated value of \$492,112

United Kingdom — 490 tents valued at \$134,000, and \$29,850 in cash.

Vatican — made a cash grant of \$25,000 for pre-fabricated housing.

#### **Voluntary Agencies and Non-Governmental Organizations**

Aviation Sans Frontieres — provided transportation valued at \$10,000 for relief goods from Secours Catholique and Secours Populaire Francais.

Caritas Germany, Fed. Rep. — \$38,400 in cash.

Caritas Italy — \$50,000 in cash.

Caritas Switzerland/Entre aide Protestante Suisse — contributed tents, boots, sleeping bags, and winter clothing.

Catholic Fund for Overseas Development (UK) — \$2,900 in cash.

German, Fed. Rep. Relief Society — contributed 4 tons of children's clothing.

Hungarian UNICEF National Committee — contributed 800 children's blankets through Turkish Red Crescent.

Islamic Solidarity Fund — \$500,000 in cash.

Japanese Shipbuilding Industries Foundation — \$20,833 in cash.

LORCS — issued an international appeal for \$7.7 million to help the Turkish Red Crescent to purchase 5,000 polar tents, 30,000 heavy blankets, 5,000 winter sleeping bags, 150,000 sq. m. of tent canvas, and other relief supplies. LORCS dispatched a 4-member Disaster Relief Standby Team to survey the disaster area and identify emergency needs. The following societies responded to the appeal:

Australia — \$92,592 in cash.

Belgium — winter tents valued at \$9,390.

Bulgaria — 50 tents, 3,750 blankets, 50 stoves, and 1 ton of medical supplies.

Cyprus — 2,000 blankets, a health team, and first aid material.

Denmark — \$105,000 in cash to purchase blankets and tents.

Germany, Fed. Rep. — 15 large tents, 7,000 blankets, 1,775 sleeping bags, and 3.8 tons of medical supplies and emergency surgery items with a total estimated value of \$119,230. Subsequently, the German Red Cross contributed 3 trucks, 7 field kitchens, 5 generators, and 200 Swedish huts, all valued at \$488,460.

Greece — 1,500 blankets, 380 sleeping bags.

Italy — 1,300 blankets.

Libya — \$515,000 in cash.

Netherlands — 5,000 blankets valued at \$15,254.

Nordic Countries — 150 tents, 50 prefabricated housing units, 1,700 blankets, and 500 sleeping bags, all transported by a Swedish C-130.

Norway — \$67,567 in cash.

United Kingdom — 100 tents and 100 blankets, with a total estimated value of \$119,400.

Norse Folkeiijelp — \$13,514 in cash.

Paritact International — 50 tents and tent heaters, 5,000 blankets, 15 tons of clothing, and 5 tons of medical supplies, all valued at \$633,000.

Secours Catholique and Secours Populaire Francais — sent 5,250 blankets valued at \$31,250 and 2.5 tons of clothing valued at \$7,500.

World Council of Churches — contributed \$10,000 in cash.

**TOTAL      \$17,474,951**

# U.S. Foreign Disaster Assistance FY1984†

COUNTRY	DATE	DISASTER	DEAD	AFFECTED
Antigua	04/13/84	Drought	0	75,000
Argentina*	06/07/83	Flood	—	—
Bolivia	12/21/83	Drought	—	1,500,000
Botswana	04/18/84	Drought	—	1,037,300
Brazil*	09/15/83	Drought	—	—
Brazil	06/26/84	Flood	—	—
Brazil	08/15/84	Flood	27°	250,000°
Burkina Faso	01/09/84	Drought	—	—
Burkina Faso	03/21/84	Epidemic	0	1,000
Burma	03/28/84	Fire	0	23,000
Costa Rico	03/09/84	Fire	0	—
Djibouti	04/12/84	Drought	—	80,000
Ecuador*	12/30/82	Flood	—	—
El Salvador	05/30/84	CS/Displaced Persons	0	6,400
El Salvador*	03/11/82	Displaced Persons	—	—
Ethiopia*	05/05/83	Drought	—	—
Ghana	10/20/83	Food Shortage	—	12,500,000
Grenada	10/27/83	Emergency	87	2,000
Guatemala	10/25/83	CS/Displaced Persons	—	—
Guatemala	12/09/83	CS/Displaced Persons	—	460,000
Guinea	12/24/83	Earthquake	275	20,000
India	10/24/83	Cyclone	100	700,000
Korea, Rep. of	09/03/84	Flood	166	350,984
Madagascar	03/14/84	Cyclone	42	13,560
Madagascar	04/13/84	Cyclone	68	100,000
Mali	09/13/84	Drought	—	1,500,000
Mauritania	10/05/83	Food Shortage	—	1,700,000
Mauritania	09/28/84	Flood	—	3,000
Mauritius	12/08/83	Cyclone	1	350
Mozambique	10/11/83	Drought	—	4,750,000
Mozambique	02/02/84	Cyclone	109	350,000
New Zealand	02/01/84	Flood	—	2,600
Niger	02/28/84	Drought	—	2,000,000
Niger	09/25/84	Drought	—	—
Papua N. Guinea	11/11/83	Volcano	—	25,000
Paraguay*	03/22/83	Flood	—	—
Peru*	02/08/83	Flood	—	—
Philippines	09/06/84	Typhoon	1,062	768,329
Philippines	09/17/84	Volcano	—	53,000
Portugal	11/21/83	Flood	10	2,000
Sao Tome & Pr.	01/18/84	Drought	—	93,000
Senegal	09/12/83	Drought	—	1,200,000
South Africa	02/27/84	Cyclones	64	500,000
South Africa*	03/18/83	Drought	—	—
Spain	11/18/83	Flood	—	1,600
Sri Lanka	02/08/84	Flood	3	1,000,000
Sri Lanka*	07/30/83	Civil Strife	—	—
Swaziland	01/30/84	Cyclone	53	632,000
Thailand	10/20/83	Flood	50	1,000,000
Turkey	10/31/83	Earthquake	1,346	33,000
Uganda*	08/29/83	Displaced Persons	—	—
			3,463	32,733,123

## Footnotes

† Preliminary figures subject to revision

\* Carried over from previous year(s)

\*\*Includes funds from an A.I.D. Development Assistance account (\$3,476,723 total) administered by OFDA.

° Includes figures for both Brazil floods

## Note

The numbers of dead and affected for disasters carried over from previous year(s) have been previously counted and are not included in this report; otherwise, a dash (—) indicates that information is currently unavailable.

## Totals

51 Disasters

41 New Disasters (33 countries)

39 Countries

10 Carried over from previous year(s)

12 Disaster Types

AMOUNT (\$)	TYPE OF ASSISTANCE
203,753	Pumps, water conts.; trans.; contrib. to water barging contract
99,341	Replace blankets and plastic from stocks
53,370	Amb. auth. used for local relief; grants to CRS
25,000	Amb. auth. donated to the GOB
132,500	PASA with USGS; grant to Red Cross for food
15,000	Amb. auth. for local relief program
25,000	Amb. auth. for local relief program
146,102	Amb. auth.; food assessment; grant to CRS
20,706	Amb. auth. used for vaccine
25,000	Amb. auth. donated to Burma Red Cross and UNDRO
25,000	Amb. auth. used to replace medicine
25,000	Amb. auth. used for local procurement of water supplies
122,560	Rehab. water purif. units; grant to CRS
75,000	Amb. auth. for local purchase building materials
548,064	Air transport; med.; grant to Project Hope
2,534,885**	Grants to CRS, CWS, & LWR for food transport
1,691,631	Amb. auth.; specialists; grants to CRS & SAWS; food and med. prog.
2,312,092	DOD airlift; med.; coms equip.; U.S. and local procurement rehab.
45,000	Amb. auth. used for local relief supplies
151,215	Amb. auth. used for CRS grant and med.; needs assessment
179,100	Amb. auth. used for food/transport; USGS experts; housing rehab.
25,000	Amb. auth. given to Prime Minister's Relief Fund
25,000	Amb. auth. donated to Red Cross
25,000	Amb. auth. used for local relief
751,656	Amb. auth.; med.; building materials; rehab. contract
25,000**	Amb. auth. given to UNDRO and PVO Coord. Comm.
1,601,409	Amb. auth.; med. supls.; grants to CRS & GIRM for food transport
25,000**	Amb. auth. used for local relief
13,066	Amb. auth. used for govt. relief program
1,257,900**	Amb. auth. to Christian Coun.; WFP & CARE food transp. grants
922,518	Local relief; grant to GOM; local purch. motors for irrig. pumps
5,000	Amb. auth. used for local relief
25,000	Grant to GON food relief program
22,469**	Pre-disaster assessment
34,523	USGS experts; monitoring equipment
44,840	Replace plastic rolls from stocks
493	Spare parts for sewer cleaning equipment
2,074,500**	Amb. auth.; emerg. relief; school repair; CRS grant
50,358**	Local relief; USGS volcanologists and equip.
25,600	Amb. auth. donated to Portugal Red Cross
20,860	Amb. auth. used for local purchase of drugs
883,154	Grants to CRS for food and med. prog. & to GOS for food transp.
109,739	Amb. auth. & contribution to Red Cross assessment
450,000	Grants to WVRO, Oper. Hunger & Red Cross
6,525	Amb. auth. donated to Red Cross
25,000	Amb. auth. used for local relief
374,945	Replace tents/flys, plastic sheeting to stockpiles
160,000	Amb. auth. donated to Red Cross; grants to GOS
13,050	Amb. auth. used for local relief
972,426**	Local relief; DOD airlift; water purif. equip.; replace tents
150,000	Local purchase of agric. tools
18,574,750**	

## U.S. Foreign Disaster Assistance Summary By Fiscal Year

FISCAL YEAR	NO. OF NEW DISASTERS	NO. OF COUNTRIES	NO. KILLED	NO. AFFECTED	CONTINGENCY IDA FUNDS	OTHER USG ASSISTANCE
FY 64	29	23	3,112	3,992,241	\$2,928,499	\$3,305,661
FY 65	46	32	46,643	14,504,499	\$2,433,534	\$18,728,040
FY 66	46	35	7,044	4,672,245	\$652,458	\$1,038,740
FY 67	57	40	17,441	106,415,973	\$6,168,051	\$6,142,586
FY 68	48	36	3,844	5,521,382	\$1,356,068	\$9,509,711
FY 69	37	32	1,018,534	31,311,680	\$4,446,757	\$24,822,542
FY 70	50	36	72,915	8,518,309	\$6,257,386	\$11,858,973
FY 71	51	40	522,183	74,289,081	\$15,865,190	\$21,932,750
FY 72	29	27	115,381	13,435,589	\$727,988	\$210,971,623
FY 73	30	27	111,614	217,756,063	\$14,062,254	\$158,631,843
FY 74	20	19	101,608	12,819,240	\$2,542,979	\$31,827,590
FY 75	25	23	61,233	46,310,336	\$7,731,525	\$120,540,500
FY 76	24	22	77,842	38,360,279	\$12,056,098	\$99,233,131
TQ	7	5	7,009	723,700	\$5,479,245	\$277,108
FY 77	25	22	8,568	7,932,836	\$21,445,529	\$13,394,451
FY 78	32	27	28,269	52,134,391	\$24,498,867	\$1,720,101
FY 79	41	33	34,514	11,049,072	\$24,554,441	\$24,559,600
FY 80	32	27	1,635	7,760,985	\$14,888,805	\$66,321,472
FY 81	22	19	11,527	4,607,227	\$9,089,062**	\$49,230,162
FY 82	35	29	43,352	40,463,621	\$10,742,757	\$51,032,086
FY 83	43	34	4,775	43,30,670	\$7,858,390	\$83,385,147***
FY 84*	41	33	3,463	32,733,123	\$15,098,027	\$44,392,165***
<b>TOTAL</b>	<b>770</b>		<b>2,302,506</b>	<b>779,292,542</b>	<b>\$210,883,910</b>	<b>\$1,052,855,982</b>

**Footnotes**

- \* Preliminary figures
- \*\* Includes \$2,521,838 funded from a \$50 million Congressional appropriation
- \*\*\* Includes funds from other A.I.D. accounts administered by OFDA

PL 480	TOTAL USG ASSISTANCE	US VOLAGS	INTL COMM	SELF HELP
\$5,410,940	\$11,645,100	\$805,317	\$533,790	—
\$25,213,459	\$46,375,033	\$3,627,301	\$3,518,733	—
\$23,729,904	\$25,421,102	\$1,567,990	\$9,476,353	\$16,157,100
\$69,044,931	\$81,355,568	\$12,220,053	\$172,860,511	\$2,964,667,000
\$21,634,945	\$32,500,724	\$7,719,299	\$15,943,626	\$606,865,000
\$73,350,178	\$102,619,477	\$12,971,207	\$95,496,828	\$130,974,000
\$30,609,073	\$48,725,432	\$12,191,711	\$59,515,671	\$96,595,000
\$119,836,982	\$157,634,922	\$16,676,273	\$266,635,252	\$1,744,839,000
\$147,802,110	\$359,501,721	\$13,178,379	\$610,661,063	\$81,020,000
\$114,230,970	\$286,925,067	\$29,251,411	\$200,892,728	\$631,705,000
\$134,477,940	\$168,848,509	\$3,216,263	\$90,252,901	\$36,173,000
\$86,808,619	\$215,080,644	\$16,079,881	\$263,430,083	\$39,043,100
\$39,215,454	\$150,504,683	\$49,093,875	\$338,424,828	\$970,510,327
\$602,876	\$6,359,229	\$1,139,554	\$2,085,331	\$198,900,000
\$11,909,226	\$46,749,206	\$14,390,669	\$59,541,298	\$6,040,094
\$42,021,193	\$68,240,161	\$6,224,223	\$186,136,612	\$276,946,722
\$15,318,512	\$64,432,553	\$39,420,510	\$661,374,390	\$477,844,108
\$57,814,655	\$139,024,932	\$1,533,448	\$35,810,102	\$11,847,900
\$12,100,000	\$70,419,224	\$23,890,844	\$211,844,949	\$6,022,007,896
\$29,000,100	\$90,774,943	\$27,258,957	\$237,092,847	\$141,901,880
\$87,333,943	\$178,577,480	\$2,452,734	\$203,946,587	\$119,800,332
\$96,021,900	\$155,512,092	\$5,999,463	\$238,707,189	\$198,095,040
\$1,243,487,910	\$2,507,227,802	\$300,909,362	\$3,964,181,712	\$14,771,932,499