



Office of U.S. Foreign Disaster Assistance

DISASTER CASE REPORT

Agency for
International
Development

Washington D.C.
20523

MADAGASCAR - Floods

Data

Date: December 1981 - March 1982 (FY 82)

Cyclone Benedict - December 20
Heavy rains nationwide - early January-early February
Cyclone Frida - February 1
Cyclone Electre - February 3
Cyclone Justine - March 18-25

Location: Cyclone Benedict - northern end of the country, especially Nosy Be and Diego Suarez
January-February rains - entire country, with the most severe flooding in the Central Plateau region around Antananarivo and Alaotra
Cyclone Frida - central east coast region
Cyclone Electre - Lac Alaotra region
Cyclone Justine - northern tip of Madagascar, especially coastal towns of Sambava, Vohemar, and Antalaha, and the southwest section of the country

No. Dead: 107 known dead; more than 20 people missing

No. Affected: Most of the country's population affected to some degree; 118,000 persons housed in public shelters nationwide

Damage: Total damage estimated at over \$250 million.
Agriculture: over 40,000 hectares of crops, mostly rice, destroyed; considerable damage to export crops of cloves, coffee, and peppers; many irrigation structures damaged; substantial damage to vanilla storage facilities in the north.
Roads and infrastructure: nearly all national routes in the Central Plateau closed at height of the flooding; Antananarivo - Tamatave rail line cut for a time by landslides and washouts; damage to 38 bridges, four ferries, 13 major dikes, and 160 retaining walls; communications disrupted; water supply interrupted in some areas
Property: at least 15,000 buildings, mostly dwellings, destroyed or damaged (excludes substantial number affected by Cyclone Justine)

Disaster

Madagascar's annual rainy season, when flooding and tropical cyclones are potential hazards, extends from December through March. The 1981-82 season was one of the most severe on record. Unprecedented rainfall throughout the country in January and February and six cyclones, four of which were destructive, created continuous disaster conditions.

The season's first cyclone, Benedict, hit the northern part of the country on December 20, killing 13 people, damaging thousands of homes, and laying waste to much of the coffee and pepper crops. The small island of Nosy Be and the region around the city of Diego Suarez were hardest hit.

Less than a month later, around the 10th of January, torrential rains began over the entire country and continued for more than 10 days. A brief respite was followed by the heaviest rainfall of the season during the last week of January and the first week of February. A total of 809 mm of rain - three times the normal volume - fell in the capital city of Antananarivo during the month of January. (The previous record of 612 mm was set during the great floods of 1959.) Flooding occurred throughout the island but was most severe in the highly populated Central Plateau, especially in Antananarivo and surrounding provinces, and the Lac Alaotra rice-producing region. Overflowing rivers and landslides forced the evacuation of thousands of people, disrupted road and rail traffic, and inflicted heavy agricultural losses. Many of the displaced persons were poor migrants living in makeshift housing in low-lying areas of the capital city. Round-the-clock monitoring of dikes and floodgates was required to prevent further destruction.

While the rains continued in early February, the country was struck by two more tropical cyclones in rapid succession, worsening the existing disaster situation and seriously affecting new areas. Cyclone Frida swept across Fianarantsoa Province on the southeast coast on the first of February, flooding most of the city of Mananjary. Several towns, including Marolambo (280 km south of Antananarivo), were isolated as bridges were washed away and communications lines knocked out. Cyclone Electre followed on February 3, killing 13 people and bringing further destruction to the Lac Alaotra region. All roads leading to the capital from the east coast, as well as the rail line between Tamatave and Antananarivo, were closed by flooding or landslides, cutting off the supply of basic items to the capital area.

As flood waters were finally receding in late March, Cyclone Justine arrived. After damaging the coastal towns of Sambava, Vohemar, and Antalaha in a northern sweep of the country on March 18, the cyclone moved down the Mozambique Channel, returned inland on March 25, and battered the southwest section. Tuléar and Morondava were among the subregions affected. Justine caused further serious damage to dwellings, crops, roads, warehouses, and food supplies. All the vanilla storage facilities in Sambava were damaged.

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The final death toll from the season's disasters was 107 with numerous other persons missing. The peak number of evacuees housed in public shelters was 71,000 in Antananarivo and 118,000 nationwide. Thousands of others were believed to have sought refuge with relatives and friends. While there were no major epidemics as a result of the disaster, health problems increased under the unusual conditions, with higher than normal incidences of intestinal and respiratory ailments, malaria, typhoid, and bubonic plague reported. Rail lines and most roads in Antananarivo were reopened when flood waters subsided, but some road links between the capital and the east coast were still closed in the middle of April. Possibly the most serious long-term consequence of the disaster was the destruction of thousands of hectares of rice, the country's staple food, and the extensive damage to the irrigation system. An estimated 60% of the January rice crop, which normally accounts for about a fifth of the year's production, was destroyed, as well as 30-40% of the May harvest. This loss was expected to necessitate importation of up to 400,000 MT of rice in 1982 - twice the previous year's record high - placing a heavy burden on an already strained economy.

Action Taken by the Government of the Democratic Republic of Madagascar (GDRM) and Local Voluntary Agencies

Disaster officials under the Ministry of the Interior directed relief activities and opened a special bank account for the purchase of supplies. Relief workers carried out repair and rescue operations on a 24-hour basis during the emergency period, manning floodgates, shoring up dikes, and removing flood evacuees to temporary public shelters. Rice was supplied to flood victims by the National Relief Council from limited existing stocks. The government subsidized a sales program for roofing materials for the victims of Cyclone Benedict in Nosy Be and, following the February and March cyclones, provided vital supplies by means of parachute drops or helicopter to communities cut off by the storms. The GDRM moved as quickly as possible to mobilize resources to repair damaged transport and irrigation systems. This effort was partly assisted by a subsidized sales program for USG-donated PL 480 Title II rice. Funds generated in local currency were used for emergency relief and economic development projects, including the payment of mechanics who repaired road equipment.

While disaster officials acted effectively, the country's limited relief capability was soon overwhelmed by the magnitude of the disaster. An acute shortage of resources led the GDRM to issue a public appeal for assistance on January 21. On February 4, Madagascar's Foreign and Interior Ministers convened chiefs of missions and representatives of international organizations to brief them on cyclone damage and request further help. As needs were identified, the GDRM appealed to the U.S. and other donors for specific kinds of assistance. Government officials consulted with foreign experts on the nature and extent of damage to road and rail systems and established priorities for assistance in restoring services.

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The Malagasy Red Cross (MRC) played an active role in relief operations from the beginning of the emergency, mobilizing some 400 volunteers to assist in the distribution of relief supplies in the public shelters.

The MRC distributed medicines from existing stocks and spent approximately \$5,600 for the purchase and distribution of two tons of rice, two tons of sugar, and one ton of soap. Faced with acute supply shortages, the MRC requested the urgent assistance of the League of Red Cross Societies in providing rice, whole milk powder, soap, clothing, and blankets. MRC personnel also assisted the Public Health Service in providing first aid and preventive health care.

The Christian Council of Madagascar (FFPM) appealed to member churches in January for funds to assist the disaster victims and later (March 24) submitted a request to the World Council of Churches for large quantities of rice and medicines.

Assistance Provided by the United States Government (USG)

Following the GDRM's public appeal for international assistance, the U.S. Ambassador to Madagascar, Fernando E. Rondon, determined on January 22 that the emergency created by Cyclone Benedict and the severe flooding was of a magnitude to warrant USG aid. Accordingly, he exercised his disaster relief authority and contributed \$25,000 to the Madagascar Disaster Relief Fund.

As disaster conditions worsened, the USG responded to specific GDRM requests for assistance. A.I.D.'s Office of U.S. Foreign Disaster Assistance (OFDA) approved an increase in the Ambassador's authority to provide portable outdoor lighting equipment to facilitate round-the-clock rescue operations and surveillance of dikes and floodgates. The U.S. Embassy arranged with A.I.D.'s Regional Economic, Development, and Service Office/East Africa (REDSO/EA) to procure in Nairobi and airlift to Madagascar the following items: 26 fluorescent hand-held D-cell battery powered lamps, 24 heavy-duty Hunter flashlights powered by D-cell batteries; and about 5,000 D-cell batteries.

Further increases in funds under the Ambassador's authority were approved by OFDA in response to the GDRM's appeal for help in rebuilding 20 bridges needed to reestablish road links to the isolated town of Marolambo. Again REDSO/EA purchased the needed hardware in Nairobi.

OFDA approved two Mission allotments to permit a response to the GDRM's request for road repair equipment. In grant agreements with the GDRM, the U.S. Embassy contracted with a local heavy equipment distributor to supply tires, tubes, and other spare parts needed for the maintenance and rehabilitation of machinery owned by the Madagascar Ministry of Public

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Works. In all, 23 pieces of equipment were refitted and used to repair the damaged main road between Antananarivo and Tamatave and roads around Sambava, Lac Alaotra, Mananjary, and Tulear.

The USG also provided technical assistance to the GDRM. On the recommendation of AID/OFDA, an engineer from REDSO/EA visited Madagascar (February 21-March 3) to conduct an assessment of roads and make recommendations concerning USG assistance in the repair of road equipment. A five-person REDSO team carried out an additional damage survey between March 28 and April 4. The team met with Embassy personnel to consider food relief measures and with GDRM officials to help set priorities for first phase assistance in repairing road equipment. A.I.D. also funded the travel expenses of an engineer from the Federal Highway Administration (FHWA) who arrived in Antananarivo July 15 to assist the GDRM in establishing roadway design standards and procedures for conducting a highway inventory. In connection with this project, OFDA provided funds for the purchase and airfreight of a Troxler Nuclear Density-Moisture gauge to be used by a FHWA expert in carrying out a proposed soil assessment.

A total of 20,000 MT of PL 480 Title II rice was committed to Madagascar. The GDRM agreed that funds generated from the sale of this rice would be used for emergency relief and for economic development projects to increase food productivity and reduce the possibility of further food shortages.

Summary of USG Assistance

Ambassador's Authority donated to the Madagascar Disaster Relief Fund.....	\$25,000
Increase in Ambassador's Authority to cover the cost of lighting equipment and airfreight from Nairobi.....	\$3,100
Two increases in Ambassador's Authority to cover the cost of nails and bolts and airlift from Nairobi.....	\$6,600
First tranche of the grant for local purchase of spare parts to repair Caterpillar equipment.....	\$127,100
Second tranche of the grant for local purchase of spare parts to repair Caterpillar equipment.....	\$265,000
Total International Disaster Assistance (IDA) funds (FY 82).....	\$426,800
Cost and airfreight of a Troxler Density-Moisture Gauge.....	\$7,038

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Travel expenses of FHWA soil expert.....\$3,625

Total International Disaster Assistance (IDA) funds
(FY 83).....\$10,663

Total IDA funds (FY 82 and FY 83).....\$437,463

20,000 MT of PL 480 Title II rice with a commodity value of
\$5,900,000 and ocean shipping costs of \$2,640,000.....\$8,540,000

Total USG Assistance.....\$8,977,463

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

Catholic Relief Services (CRS) - CRS/Madagascar provided seven tons of milk, 40 tons of cornmeal, 100,000 pepriazine tablets, and 10,000 aspirin tablets from available stocks, as well as five tons of clothing, value not reported. CRS also gave \$16,000 for the purchase of clothing, blankets, and medicines.

Church World Service (CWS) - advanced \$5,000 from the Executive Director's Emergency Fund and issued an appeal for \$120,000 in support of the World Council of Churches' appeal. (A total of \$27,500 had been received in response as of May 28, 1982. This amount is credited to the individual donors, and a total of \$32,500 is deducted from the WCC contribution to avoid double counting.)

Disciples of Christ - donated \$7,500 in cash to CWS.

Episcopal Church U.S. - gave \$5,000 in cash to CWS.

Mobil Oil - provided \$10,000 in cash to be channeled through CRS.

Presbyterian Church U.S. - gave \$5,000 in cash to CWS.

World Vision International - supplied 500 tons of rice (\$141,000), medicines (\$50,000), 30 tons of soap (\$50,000), and clothes and blankets (\$5,000).

TOTAL \$294,500

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Assistance Provided by the International Community*

International Organizations

European Economic Community (EEC) - contributed 2,070 tons of rice, value not reported, and additional relief aid totaling \$1,128,976. (This included \$103,000 in cash given to the WCC appeal, an amount deducted from WCC's listed contribution to avoid double counting.)

EEC - European Development Fund - donated 11,000 tons of flour, value not reported, and reprogrammed part of its Lome II funds for 62 disaster relief projects.

International Bank for Reconstruction and Development (IBRD) - redirected funds in its rice project loan to assist the rehabilitation of the Lac Alaotra region.

League of Red Cross Societies (LORCS) - sent two delegates to assist the Malagasy Red Cross and appealed to sister societies for donations on behalf of the MRC. (See contributions below credited to individual donors.) Using the cash gifts (totaling approximately \$133,600), LORCS purchased five tons of rice locally and the following items in Swaziland: 20 tons of milk powder, 10 tons of soap, and 5,500 pieces of children's clothing.

Organization of African Unity (OAU) - donated \$200,000 in cash.

United Nations Development Program (UNDP) - donated \$30,000 through UNDR0 to the Madagascar Disaster Relief Committee.

United Nations Disaster Relief Office (UNDR0) - gave \$30,000 in emergency funds to the Madagascar Disaster Relief Committee and appealed to international donors on behalf of the GDRM.

United Nations Children's Education Fund (UNICEF) - provided medical supplies worth \$25,000 and an additional \$80,000 in cash from the Executive Director's Emergency Reserve for medical assistance.

World Council of Churches/Commission on Interchurch Aid, Refugees, and World Service (WCC/CICARWS) - issued an appeal for \$500,000 in support of the emergency/rehabilitation program of the Christian Council of Madagascar. With total funds raised as of May 28, 1982 (\$199,500), CICARWS shipped 500 tons of rice valued at \$157,500 and 4.8 tons of medicines worth \$42,000. (Deductions of \$32,500 from CWS and \$103,000 from EEC leave a total of \$64,000 which is credited to WCC.)

World Food Program (WFP) - diverted 450 tons of wheat flour and 29 tons of edible oil from existing stocks, with a total value of \$246,000.

World Health Organization (WHO) - donated medicines worth \$45,000.

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Governments

Algeria - gave \$1 million in cash.

Australia - donated \$52,935 in cash.

Canada - contributed \$48,009 in cash through LORCS.

Djibouti - donated \$10,000 in cash.

France - provided \$175,000 in cash for repairs and medicines, as well as eight motor-powered Zodiac boats and 5,000 tons of cereal, value not reported. France also committed \$3,371,156 to rehabilitate the rice production area and the road system.

German Democratic Republic - gave clothes, blankets, and milk valued at \$212,765. The city of East Berlin donated medical supplies and vaccines worth \$170,212.

Germany, Federal Republic of - gave \$60,516 in medicines through LORCS.

Hungary - supplied medicines valued at \$34,285.

India - provided 1,000 tons of rice, value not reported.

Indonesia - provided medicines valued at \$10,000.

Italy - gave \$10,000 in cash for the purchase of medicines.

Japan - donated \$10,000 in cash.

Korea, Democratic People's Republic of - gave 500 tons of cement valued at \$30,000.

Netherlands - donated \$25,000 to the Malagasy Red Cross and food and milk powder valued at \$75,472 through the People in Need Foundation and Caritas.

Norway - contributed 53 tons of milk and 4.5 tons of potatoes, value not reported.

Soviet Union - contributed more than three tons of medicines, 42 tons of soap, and 2,000 tons of rice, value not reported.

Switzerland - gave 10 MT of dry whole milk valued at \$51,206.

United Kingdom - donated \$30,000 worth of medical supplies.

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Voluntary Agencies

All Africa Council of Churches (AACC)- General Secretary visited Madagascar in February to report on disaster conditions; the AACC sent a team to assist in assessment and relief planning.

Australia Red Cross - gave \$1,137 in cash through LORCS.

Austria Red Cross - provided 3,800 doses of tetanus vaccine valued at \$18,236 through LORCS.

Baptist Federation of Canada - gave \$8,425 to CWS.

Belgium Red Cross - gave \$2,193 in cash through LORCS.

Brazil Red Cross - donated \$561 in cash through LORCS.

Egypt Red Crescent - provided food, medicines, and cloth with a total value of \$4,109 through LORCS.

Finland Red Cross - gave \$4,663 in cash through LORCS.

France Red Cross - donated one ton of razine and one ton of milk protein tablets with a total value of \$6,971 through LORCS.

Germany, Federal Republic of, Red Cross - gave \$8,951 in cash and the following relief supplies valued at \$53,775 through LORCS: 329 tents, 400 blankets, 500 sets of eating utensils, one mobile medica unit, and 480 bales of used clothing.

Greece Red Cross - provided \$5,840 worth of medicines through LORCS.

India Red Cross - gave blankets valued at \$5,707 through LORCS.

Individual donors - contributed \$1,150 in cash through LORCS.

Luxembourg Red Cross - donated \$561 in cash through LORCS.

Netherlands Red Cross - gave \$41,114 in cash through LORCS.

New Zealand Red Cross - donated \$841 in cash through LORCS.

Norway Red Cross - gave \$8,932 in cash through LORCS.

Norwegian Lutheran Church - airlifted 40 tons of powdered milk from Reunion, value not reported.

Ordre de Malte/Paris - provided 5,500 beds and mattresses and one pneumatic boat, value not reported.

Oxfam (U.K.) - gave \$5,000 in cash through LORCS.

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Spain Red Cross - donated 510 blankets, clothing, and soap with a total value of \$12,973 through LORCS.

Sweden Red Cross - gave \$4,599 in cash through LORCS.

Switzerland Red Cross - contributed \$1,888 in cash, 10 tons of whole milk powder worth \$49,019, and the services of a Red Cross delegate valued at \$3,057, all through LORCS.

TOTAL \$7,475,234

* Please note: 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.