



Office of U.S. Foreign Disaster Assistance

DISASTER CASE REPORT

Agency for
International
Development

Washington D.C.
20523

MADAGASCAR - Cyclones

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 (Majunga), Toamasina (Tamatave), and Flanarantsoa

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 Alaotre

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 town

Damage: First three cyclones - Widespread 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 Alaotro 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 Alaotro 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.

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 vegoil 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

Total International Disaster Assistance account (IDA).....\$776,656

11,255 MT of P.L. 480 Title II commodities (includes ocean (freight)).....\$5,584,400

TOTAL \$6,361,056

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.

UNDRO - \$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 - \$23,500 in cash through UNDRO 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 UNDRO 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