

### BOLIVIA - Floods

Date: Mid-February - June, 1983 (FY 83)

Location: City of Santa Cruz and the department of Beni

No. Dead: 250 in Santa Cruz; none reported in Beni

No. Injured: Not reported

No. Affected: 50,000 in Santa Cruz; no estimate for Beni

Damage: Total damage was approximately \$48.4 million, including crop losses estimated at \$13.2 million and damage to infrastructure totaling \$35.2 million: housing - \$11.8 million (10,000 units destroyed/damaged); bridges - \$2.4 million; roads - \$20.5 million; schools - \$62,500; other - \$400,000. [Please note: Figures are based on a conversion rate from local currency to U.S. dollars of 400:1. If the official rate of exchange (about 200:1) were used, reported damage would be about double the above.]

#### The Disaster

The rural and urban areas of Santa Cruz (Bolivia's second largest population center), which were damaged by flood waters from the rain-swollen Pirai River in mid-February, were even more seriously affected the following month. Torrential rainfall on March 17 and 18 resulted in severe flash flooding as the Pirai River crested six meters above its normal level. The city of Santa Cruz was inundated by the deluge as were the nearby regional centers of Warnes, Obispo Santiesteban Sara, and Ibanez.

An estimated 50,000 people were affected by the disaster which left 250 dead and thousands homeless. Highways connecting Santa Cruz with Cochabamba and other population centers became impassable as 85 km of road were washed away and major bridges (at Taruma and La Beligca) were destroyed. City streets were turned into rivers of mud. At least 14 rural communities were partially destroyed by landslides, while many others were isolated for several days after the flooding.

Agricultural losses were extensive, with the loss in production further aggravating a severe food shortage in Bolivia caused by drought in the Altiplano and other regions. Nearly 86,400 hectares under cultivation were submerged during the critical harvest period, destroying fields of rice, corn, soy, and sugar cane. Thousands of animals perished in the flood waters, including 75,000 head of cattle, 150,000 chickens, and 23,000 goats.

The heavy rains continued intermittently throughout June and extended north into the department of Beni, where flooding occurred in major river systems and in the San Julian colonization project located between the Rio Grande and the Rio San Julian. Several villages in the latter area, with a total population of 500, were reported under water as the two rivers crested in late May. The flooding caused the loss of the winter crop and considerable damage to schools and health posts in Beni.

#### Action Taken by the Government of Bolivia (GOB) and Non-Governmental Organizations

On March 21, the GOB declared seven of its nine departments to be in a state of disaster as a result of flooding, drought, and hailstorms. On the same date, the GOB formally requested the Office of the United Nations Disaster Relief Coordinator (UNDRO) to launch an appeal to the international community for disaster assistance. To initiate the relief effort, the GOB allocated the Bolivian equivalent of U.S. \$125,000 in disaster assistance to the city of Santa Cruz.

The National Committee on Civil Defense, headed by the Ministry of Defense, acted as the coordinating agency for disaster relief at the central level. The local relief effort was coordinated by the Civil Defense Departmental Committee headed by the Departmental Prefect and comprised of central and local government officials, military authorities, and Red Cross representatives. Distribution of relief supplies was carried out by the Red Cross and the Civil Defense staff.

In Santa Cruz the municipal government expanded a resettlement camp on the outskirts of the city. Some 3,000 families were housed initially in tents and makeshift shelters until a permanent settlement could be established. Local authorities donated land to each family and provided roofing materials for all 3,000 homes. Construction of the homes was to be accomplished by individual families in a food for work program. The Ministry of Health established a health post in the camp.

The Santa Cruz branch of the Bolivian Red Cross (BRC) was active in relief and rescue operations from the beginning of the emergency, providing food, clothing, first aid, and temporary shelter to the flood victims. It was assisted by the central headquarters of the BRC which provided funds and personnel. The national Red Cross also played a major role in the government's resettlement program. In addition to distributing food (from government- and Caritas-sponsored programs), cooking utensils,

blankets, and other necessities in the camps, the BRC planned to purchase and distribute over a million mud bricks for the reconstruction of homes.

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

Following the GOB's disaster declaration and appeal to the international community, the U.S. Ambassador to Bolivia, Edwin G. Corr, determined on March 24 that a disaster situation warranting USG assistance existed in Santa Cruz. The \$25,000 obligated from the Ambassador's disaster assistance authority was used in part for the local purchase of tools and housewares for "Plan 3,000" families and for the purchase and transport of plastic bags and plastic sheeting. With the concurrence of A.I.D.'s Office of U.S. Foreign Disaster Assistance (OFDA), \$3,500 of this amount was later transferred to the Potosi drought assistance account and \$500 was used to assist flood victims in the department of Beni. Accompanied by GOB Civil Defense authorities, U.S. Embassy/USAID personnel conducted an on-site inspection of the disaster area.

In response to a request from the USAID Mission, OFDA sent 50 rolls of plastic sheeting from its stockpile in Panama to be used for emergency shelter. Also, to assist the mission in assessing damage and recommending appropriate USG action, a three-person technical assistance team, consisting of a disaster management specialist, a water service engineer from the Water and Sanitation for Health Project (WASH), and the chief engineer of A.I.D.'s Latin America Bureau, conducted an on-site assessment of the flood-affected area and the resettlement camp. Based on its observation that the water problem in the camp was due to an inefficient distribution process rather than to a lack of potable water, the assessment team requested that OFDA arrange to airlift from Ecuador several inflatable water storage tanks. Six 3,000 gallon storage tanks and two pumps arrived in Santa Cruz on March 29 and were placed at strategic locations throughout the camp to permit easy access. When this number proved to be insufficient, an additional five storage tanks were brought in from Ecuador.

On June 17, Charge William G. Walker declared that the flood disaster had expanded to the area north of the city of Santa Cruz, including the San Julian colonization project. OFDA approved his request for an increase of \$20,000 in disaster assistance for the purchase and transport of medicines, tools, shelter and agricultural supplies for that area.

The USG was also the largest food donor to the victims of Flood, drought, and hailstorms in Bolivia. Catholic Relief Services (CRS)/Caritas distributed P.L. 480 Title II commodities in emergency and food for work programs in Santa Cruz and in the flood-affected areas to the north. For a detailed account of U.S. food and other disaster assistance to Bolivia, see the Bolivian Drought, 1983, case report.

Summary of USG Assistance

Ambassador's authority used for local relief.....	\$21,500
Increase in Ambassador's authority.....	\$20,000
Value of 50 rolls of plastic sheeting (includes transport costs).....	\$19,240
Value of eleven 3,000 gallon water tanks (includes transport costs).....	\$23,184
Administrative expenses of a disaster management specialist.....	\$5,200
Administrative expenses of A.I.D. regional engineer.....	\$1,605
Administrative expenses of WASH engineer.....	\$14,988
	TOTAL
	\$105,717

Assistance Provided by U.S. Voluntary Agencies

CRS/Caritas - distributed P.L. 480 Title II commodities in emergency and food for work programs WASH; donated \$15,000 in cash.

Seventh day Adventist World Service (SAWS) - distributed Title II commodities and other relief supplies; provided water containers, value not reported; and made trucks available to transport the USG-donated water tanks from the airport to the resettlement camp.

Utah Partners of Santa Cruz - donated one roll of plastic sheeting, value not reported.

World Vision International - carried out a relief project with a total value of \$16,000: food/medicines (\$10,500), roofing materials (\$5,175), and transport (\$825).

TOTAL            \$31,500

## Assistance Provided by the International Community

### International Organizations

European Economic Community - donated \$106,450 in cash through LORCS.

Food and Agriculture Organization/World Food Program - developed an emergency program for Santa Cruz and assisted the GOB in assessing damage, losses, and needs in the drought-affected areas.

League of Red Cross Societies (LORCS) - issued an appeal to national societies on March 31 for approximately \$260,000 to support the BRC's role in the GOB's resettlement project; provided \$40,000 in cash for the local purchase of relief supplies.

UNDRO - launched an international appeal on March 22 at the request of the GOB and donated \$20,000 in cash for immediate relief needs. The UNDRO/UNDP resident representative visited the disaster site to assess needs following the GOB's disaster declaration, and, in late May, an UNDRO delegate began a month-long mission to La Paz to assist the Bolivian Civil Defense in the development of its relief/preparedness capacity.

United Nations Industrial Development Organization (UNIDO) - provided technical assistance in the rehabilitation of agrobusinesses at a cost of \$140,000.

World Health Organization - provided medical supplies and three boats, all valued at \$50,000.

### Governments

Argentina - donated medicines, 500 blankets, 500 flysheets, 400 mattresses, two water pumps, two generators, and two tons of foodstuffs; value not reported.

Brazil - donated medicines valued at \$3,047.

Canada - provided \$60,605 in cash, of which \$40,200 was donated to the Pan American Health Organization (PAHO)/WHO for the purchase of medicines and medical supplies.

Cuba - contributed 230 boxes of canned food, 90 boxes of condensed milk, and 12 tons of medicines; value not reported.

France - provided \$20,000 in cash and the following assistance, value not reported: medicines, 3,000 tons of wheat flour, and 300 meters of Bailey bridges.

Germany, Federal Republic of - donated \$90,909 in cash and medicines valued at \$41,068; airlifted 15 portable water cisterns (1,500 liter capacity), value not reported.

Hungary - gave medicines valued at \$30,000.

Italy - airlifted 32.5 tons of food and medicines with a total value (including transport) of \$604,166.

Japan - gave \$100,000 in cash.

Korea, Republic of - donated \$100,000 worth of plastic bandages, gauze, and medicines.

Nicaragua - gave \$1,000 in cash.

Norway - provided \$30,000 in cash through the Norwegian Red Cross.

Spain - provided 5,000 tons of wheat, value not reported.

United Kingdom - contributed \$8,065 in cash for the purchase of medicines, vitamins, and dried skim milk; and 90 meters of Bailey bridges at a total cost, including transport, of \$240,000.

#### Voluntary Agencies

Spain Red Cross - donated medicines valued at \$30,000.

TOTAL      \$1,715,310