



DISASTER  
RELIEF

CASE REPORT  
Peru-Landslide & Flood  
April-June 1974

*Figure not added  
Correctly - adjusted*

Agency for International Development  
Washington, DC 20523



*The massive landslide on the Mantaro River destroyed eleven settlements killing 310 people.*

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# PERU

## Landslide/Flood—April 25 - June 8, 1974

On April 25, 1974, a massive landslide on the south side of the Mantaro River, actuated it is thought by heavy rains, destroyed 11 settlements and one government camp. Two other camps were damaged. A dam formed in the river creating a lake which on June 8, when the dam gave way, flooded and destroyed several small villages. Casualties and damage were extensive.

- 310 killed (all fatalities as result of the landslide)
- 1,500 homeless
- 8,000 evacuated
- 12,000 affected
- 346 homes destroyed; 424 damaged
- 10 buildings (mostly schools) destroyed
- Roads, culverts, bridges, electrical installations and agriculture destroyed, severely damaged or affected
- Total estimated dollar damage—\$21.7 million

### Value of Outside Assistance:

U.S. Government .....	\$ 25,000
International Community .....	<del>281,000</del> 400,994
	<del>\$426,000</del> 425,994

Shortly before 9:00 p.m. on April 25, 1,600 million cubic meters of rock and earth slid with a speed reaching 85 miles per hour down a 30 degree slope burying numerous settlements and killing 310 people. The location of the slide was at 56 kilometers on the La Mejorada-Ayacucho road at the village of Huacoto, Andabamba District, Acobamba Province, Department of Huancaavelica. The geographic position of the site is latitude 12° 38' 12" S, longitude 74° 40' 32" W. Unusually heavy rains along a fault line may have triggered the landslide.

Rushing on into the Mantaro River from the right bank, the slide's momentum carried part of the material up to the slope of the opposite bank, from which it crashed back. A huge mass of rock and earth blocked the river's flow and behind this dam a deep, long lake formed. Among the largest avalanches ever to occur in Peru, this displaced mass formed an inverted trapezoid approximately 4.2 miles long, with an average width of .6 of a mile and a depth of 328 to 492 feet. Measured along the bottom of the river, the deposit was 2.1 miles in width

and the low point was about 558 feet above the original river bed.

As the water level behind the dam began to rise, inhabitants of the adjacent river valley fled from their homes. Riverside roads disappeared below the surface of the growing lake and sizeable areas were isolated. Continuing to inch upward, by June 5 the water level reached the low spot on the dam's rim. By this time the lake contained approximately 800 million cubic meters of water and was over 14 miles long. Little was needed now for a spill-over to commence. Dry weather and attendant evaporation over the wide surface had limited the water's increase, but on June 7 heavy rains drenched the surrounding mountains. Lightning struck, killing a woman, and underground tremblings could be felt. On June 8, the first water began overflowing the giant dam. As it eroded the mass earth and rock, the flow rapidly reached 8,000 cubic meters per second—eight times the normal maximum flow. Within 24 hours, about 600 million cubic meters had passed over the dam dropping the level of the lake by 295 feet. The flood-

wave wiped out many villages, but there was no loss of life since the endangered inhabitants had been evacuated.

The damage and destruction to roads, bridges, homes, and agriculture was extensive. By June 10, the flow had returned to normal, leaving a lake 262 feet deep containing about 180 million cubic meters of water.

Soon after the landslide, the Government of Peru had sent engineers to study ways to prevent the overtopping of the dam. On May 29, the Peruvian Minister of Interior invited scientists and engineers from all over the world to visit the landslide area because the phenomenon was quite unique and because he wished, even though developments at the Mantaro River were at an advanced state, to secure additional opinions as to what steps could be taken to limit the downstream damage should the dam collapse. West Germany, Canada, Czechoslovakia, Great Britain, Hungary, Italy, Romania, Sweden, and Russia sent experts to study the situation. U.S. Army engineers reported that the situation had developed too far to safely work the slide. For that reason and because many engineers and scientists from other countries were already at the site, the U.S. Country Team decided not to ask for engineers from the United States. There was one U.S. Forest Service geological engineer at the site representing UNESCO.

Later the U.S. Mission made the following comment: "In retrospect, it would have been better if the Civil Defense Office had asked immediately for assistance in removing as much of the dam as possible, preventing at least partly the gigantic build-up of potential flood water behind the dam."

#### **ACTION TAKEN BY THE GOVERNMENT OF PERU:**

On May 28 the Government of Peru declared the Mantaro River landslide a national disaster. Prior to the declaration it had tried through its Civil Defense Office to cope with the emergency and provide for the needs of the evacuees with only a minimum



*U.S. Government donated tents being loaded for transport to the disaster site to be distributed to the homeless victims.*

of outside assistance. More people had to be evacuated due to the fear that the lake would overtop the dam, but without the declaration of a national disaster the Government, by law, was unable to provide funds for further relief activities of the Civil Defense Office. On May 29 the GOP invited Ambassadors and foreign representatives to attend a meeting with the Peruvian National Committee for Civil Defense, comprised of six ministers, the Chairman of the Joint Chiefs of Staff and the Chief of SINAMOS (National System for Support of Social Mobilization). During this meeting the decree declaring the national disaster was read and a report on the catastrophe given.

Transportation in the area of the landslide was a major problem as all main roads to the site had disappeared below the surface of the lake. This was solved by the use of helicopters furnished by the Peruvian Air Force.

The Peruvian Civil Defense Office arranged timely evacuation of the affected people,

organized the supply of food and shelter, and saw to it that the population downstream was properly inoculated in the event outbreaks of pneumonia, typhus, typhoid and dysentery occurred.

Voluntary organizations and other groups in Peru, including Caritas, Red Cross, Council for National Assistance, and Church World Service contributed food, clothing, blankets, tents, medicines, pots, tools and sleeping bags with an estimated value of \$107,000.

**ASSISTANCE PROVIDED BY THE U.S. GOVERNMENT:**

On May 10, 1974, when it became clear that the disaster needs had outgrown GOP resources, Ambassador Robert W. Dean authorized the expenditure of \$25,000 for tents for the unmet needs for emergency shelter. Accordingly, AID/FDRC authorized the withdrawal of 190 tents from the Panama stockpile. The tents were delivered free of charge by Braniff Airlines on three flights: May 12 (48 tents); May 13 (84 tents); and May 15 (58 tents). They were used at the following locations: Comunpampa, Huacoto, Churcampa, Mayocc, Piedra Labrada, Sillero, Linda Pampa, and Anco.

On June 5 Mr. Jacob Willebeek-LeMair, Mission Disaster Relief Officer, visited the Mantaro River region, flying in a helicopter over the landslide area and the valley threatened by the impending floodwave to the town of Mayocc. He noted the villages in the valley had all been evacuated and observed the 46 USG-donated tents being used in Mayocc. At the base of operations, the military camp in Pampas, Willebeek-LeMair

met engineers and scientists from England, Switzerland, Germany, France, and the United States. Mr. Eugene Kojan, a geological engineer from the U.S. Forest Service, was one of the advisors who had come to Peru to study the disaster situation as a representative of UNESCO.

**ASSISTANCE PROVIDED BY U.S. VOLUNTARY AGENCIES:**

CARE, Church World Service, and Catholic Relief Services participated in the relief efforts but details and value of their assistance are not available.

**ASSISTANCE PROVIDED BY THE INTERNATIONAL COMMUNITY:**

*United Nations Disaster Relief Office (UNDRO)*

UNDRO provided cash, six generators, 600 sleeping bags, and an undetermined number of walkie-talkie radios from its own funds (\$17,894) and from funds donated to UNDRO for the disaster by the Netherlands (\$113,255) .....

	<del>\$130,894</del>
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<i>Governments</i>	
<i>Brazil</i> —sent supplies but kind and value were not reported .....	*
<i>Canada</i> —300 family tents and 5 large school tents .....	\$ 45,000
<i>China</i> (People's Republic of)—400 tents (through LICROSS) and other assistance .....	155,312 ✓
<i>Romania</i> —relief supplies (variety unknown) .....	65,200
<i>Spain</i> —cash .....	4,333
Total .....	<u>\$400,739</u>

\* Incomplete or not reported

255 dollars off

