



DISASTER CASE REPORT

Agency for
International
Development

Washington D.C.
20523

BANGLADESH – Floods FY 1988

Date

August - September
1988

Location

53 of 64 districts,
including the capital
city of Dhaka; 323
of the country's
upazilas (townships)
affected

No. Dead

At least 2,379 (1,644
officially from the
floods and more
than 735 subsequent
deaths from
diarrheal diseases)

No. Affected

45,000,000;
25,000,000 to
28,000,000 homeless

Damage

The floods caused
major damage in all
sectors. The
preliminary estimate
of recovery costs for
capital stock was
\$1,137,000,000 and
for housing
\$1,000,000,000.

The Disaster

Bangladesh is a flat, deltaic country, having about 60% of its 144,000 sq. km. six meters or less above mean sea level. With three major river systems crisscrossing the country, seasonal floods are part of the fabric of life. During some monsoon seasons, however, the flooding is particularly devastating. Such was the case in 1987 when a third of the country was inundated and 30 million people were affected (see *OFDA Annual Report FY 1987*). But even a nation inured to suffering during periodic disasters was not prepared for the ravages of the 1988 monsoon floods, widely described as the worst of the century.

Rainfall for the month of June was far above the normal average, and river levels rose above the danger mark in the Meghna River Basin in the north and northeast and in the southeastern hill basin. The more normal precipitation levels over Bangladesh during much of August were not matched in the main catchment areas in the Himalayan foothills where the rivers flowing through Bangladesh originate. There, rainfall continued to be heavy, and extensive flooding was reported in August in the northern tier of the Bangladesh districts bordering the river systems of the Brahmaputra (northwest), the Meghna (northeast), and the Ganges (west).

Toward the end of August, flood conditions deteriorated rapidly, with more than a third of the country under water and road and rail links cut to the northwestern districts. The Indian government warned that it was releasing water from the barrages on the Brahmaputra and Ganges systems which control water flow in Bangladesh. This release of water may have contributed to the rapid rise in the major river basins.

As the crest of flood waters moved south to the

Bay of Bengal, new areas in the central and southern parts of the country were inundated. Water levels reached historic highs at a number of hydrological monitoring points and receded slowly, due in part to the high tides and southerly winds from the Bay which created backwash effects. The spill-over from the major rivers eventually covered 122,000 sq. km., or 84% of the national territory. With flood waters up to three meters deep in some places, much of the country had become one vast, muddy sea in which only treetops and the roofs of buildings were discernible.

The millions of people forced from their homes took refuge wherever they could find a bit of higher ground, huddling on rooftops, in trees, and on embankments. Cut off from all life-sustaining supplies, the stranded people had neither sufficient food nor a safe water supply. Any food that might have been salvaged could not be cooked because of the lack of fuel and a dry area, and the only drinking water was the surrounding contaminated flood waters. With rail and road links severed, the delivery of relief supplies to the marooned and desperate people was greatly hampered. The death toll rose daily from drownings, diarrheal diseases, and the poisonous bite of snakes, which were competing with humans for scarce high ground.

The more fortunate of the flood's victims were able to escape to safer areas where they received care. Hundreds of thousands of displaced people poured into the capital city of Dhaka, seeking refuge in relief camps, parks, buildings under construction, or with relatives. But Dhaka itself was not spared in this historic flood. By Sept. 4, the capital was virtually isolated, cut off from the outside world by the collapse of a rail bridge near Tongi and the forced closure of Zia International Airport to all but small planes. The airport remained under water and closed to international

traffic from Sept. 2 to Sept. 8; the bridge was expected to reopen Sept. 16. The country's main port of Chittagong remained operational throughout the flood but was cut off from Dhaka and the rest of the country by road or rail for several days. Power and water supplies in Dhaka were disrupted as pump houses and substations were inundated.

As the flood waters receded, concern focused on the possible spread of waterborne diseases and the deadly effect this could have on an already weak and malnourished people, many of whom were homeless and exposed to the elements for a prolonged period. The government's estimate of 1.3 million cases of diarrheal disease between mid-July and mid-October referred only to cases reported and treated by government health teams. The actual incidence was believed to have been much higher.

The problem of food distribution until the transport sector could be rehabilitated was another area of concern, as was the longer-term effect that lost jobs would have on the nutritional status of the population. The damage to crops and small industries was expected to reduce employment and buying power in the flood's aftermath, possibly resulting in "economic famine." An October survey revealed that the floods had resulted in an immediate loss of jobs in all sectors for 4.25 million people (14% of the employed labor force). Particularly hard hit were the poorer households which had to resort to distress sales of land and livestock in order to survive the flood period. Later production statistics seemed to indicate that the flood had less impact on national economic output than early assessments had indicated. Nevertheless, the disaster caused heavy losses in the country's capital stock, particularly infrastructure and housing, and was responsible for significant pockets of malnutrition and disease.

A government/U.N. Development Program (UNDP) survey reported provisional statistics as follows: 12.8 million public and private buildings damaged or destroyed (USAID considered this an overestimation); about 2.0 million ha. of cropland damaged, with loss of 2.5 million MT of food grains (donors estimated 1,950,000 MT); and 720,000 head of livestock and 400,000 poultry lost. Infrastructure losses included damage to 2,500 km. of embankments, 1,900 water control structures, 13,000 km. of national and local roads (including 898 bridges), 1,303 km. of rail track (including 269

bridges), 1,468 health facilities, 19,016 educational institutions, 240,000 public tubewells, and 288,373 small and cottage industries, and 1,070 medium and larger industrial units. Damage was also extensive to inland waterways and ports, as well as to civil aviation and power and telecommunications systems.

The floods dramatized once again the extreme vulnerability of Bangladesh to this type of disaster and prompted renewed interest in exploring a regional approach to water management problems. Although the excessively heavy rainfall in a relatively small area over a short period of time was identified by government meteorologists as the primary cause of the catastrophic flooding, the larger dimensions of the problem were also recognized. Environmental conditions, both within and outside Bangladesh's borders, such as deforestation, erosion, river silting, and flood control practices would have to be examined for their possible effect on the recurring flood hazard in Bangladesh.

Action Taken by the Government of Bangladesh (BDG) and Non-Governmental Organizations

President Hussain Muhammed Ershad toured some of the stricken areas by helicopter on Aug. 31 and verified reports of widespread human suffering and economic disruption. The BDG marshalled all available resources to conduct round-the-clock relief operations, supervised by the President. President Ershad personally joined relief workers to help distribute supplies.

On Sept. 1, President Ershad appealed to all nations for assistance, particularly for food, helicopters, and other means of transport for the distribution of relief items to victims isolated from usual commodity sources. Also given priority were medical supplies (especially water purification tablets-WPT), building materials, and cash contributions.

As morbidity increased, the BDG raised its appeal for WPT to 40 million tablets and also asked for large quantities of oral rehydration solution (ORS) and other essential drugs and surgical equipment. The domestic production of ORS was stepped up and output doubled in the weeks following the floods.

Organized relief progressed slowly in the beginning because of the immense damage to infrastructure. The main means of distributing relief items was by boats, rafts, and helicopters, operated principally by the military. Helicopters (some provided by other countries) made regular sorties to supply isolated groups of people. The armed forces helped also with embankment protection and the repair of roads and bridges.

Workers in all essential services were mobilized. Over 3,000 medical teams were organized at the height of the emergency and other medical personnel were on standby to prevent an outbreak of waterborne disease. Workers in public utilities--water, power, gas, and telephone--put in long hours to restore services. The Flood Situation and Relief Activities Monitoring Cell of the President's Secretariat coordinated and reported on relief operations.

While Zia International Airport was closed to wide-bodied aircraft between Sept. 2 and Sept. 8, BIMAN (Bangladesh Airlines) continued to fly F-28s and F-27s to several cities in Bangladesh. In an effort to compensate for road and rail disruption, BIMAN flew extra flights everyday in addition to regularly scheduled service and maintained an airbridge between Dhaka and Calcutta, India, for international passengers. A massive reconstruction effort was undertaken to restore the Tongi bridge and reestablish the rail link between the capital and the rest of the country.

The prevention of malnutrition among the flood victims was a matter of primary concern. The BDG had instituted a food security system after the 1987 flood and had some 1.3 million MT of foodgrains (2-3 months' supply) in 1,140 public food warehouses well-positioned throughout the country. Using all available means to reach the affected population, the BDG had distributed more than 59,000 MT of rice, wheat, pulses, and other food by Sept. 8, either as gratuitous relief or in food-for-work activities. Food stocks were sold to people with resources to purchase commodities. The BDG had also provided \$1,729,000 in cash payments to flood victims as of that date, as well as clothing, candles, cooking utensils, and building supplies. Some of the relief items were distributed to displaced people in relief camps. The government opened 1,693 such camps in schools, churches, mosques, and other public buildings. As of Sept. 19, there were 400 camps

still operating in Dhaka, sheltering 700,000 people.

BDG ministries and U.N. organizations hosted frequent donor meetings throughout the emergency phase to coordinate international response. Looking ahead to the rehabilitation period, the BDG appealed to the international community to finance the purchase of 5,000 MT of wheat seed, 500 MT of corn seed, and 20 MT of vegetable seed to compensate for losses to the aman rice crop. The BDG Minister of Agriculture met with donors on Sept. 7 to set up a procurement system after the U.N. Development Program (UNDP) agreed to establish a fund to purchase the seed from regional sources in time for the September and November planting seasons.

To further refine assessments for rehabilitation needs, the BDG, USAID/Dhaka, and UNDP jointly conducted a survey of flood damages and outlined a program of recovery. A report titled "1988 Floods: Impact, Relief, and Recovery" was first presented at a BDG-convened meeting of chiefs of missions and donors on Oct. 27 and later at a special U.N. meeting on Bangladesh on Nov. 16. An action plan was adopted to guide rehabilitation and reconstruction efforts, focusing on four areas: 1) an agricultural rehabilitation scheme for livestock, crop production, and fisheries; 2) house-building loans and reconstruction of schools and other buildings; 3) repair and restoration of water pumps for fresh water supply and irrigation; and 4) repair of roads, railways, and embankments.

While still coping with the extraordinary crisis, President Ershad issued an urgent appeal to the donor community for assistance in finding the root causes of recurring flooding in Bangladesh in an international and regional context. As a first step in regional cooperation, Bangladesh and India set up a joint task force to look at the problem. The BDG also initiated a national flood policy study for which a UNDP-supported international team arrived in Dhaka in November to provide expertise on flood management.

Numerous private citizens and local voluntary organizations contributed significantly to the relief and rehabilitation effort. The Bangladesh Red Crescent Society (BDRCS) responded early, sending two staff officers and 200 volunteers to help with the distribution of BDRCS stocks of food, clothing, and other relief supplies. In an

emergency session on Aug. 31, the BDRCS planned an operation targeted for 200,000 families (1 million people) at a cost of \$6.9 million. First priority was given to food distribution (rice and pulses) to 60,000 families (300,000 people) for 30 days in 90 upazilas. The BDRCS issued a local appeal for \$1,087,560 for immediate requirements. CSS (the local counterpart of World Relief Corp.) dispatched in-country staff to some of the most needy and accessible areas to perform an assessment.

Assistance Provided by the U.S. Government

Based on reports by the BDG and other sources and a personal survey of the stricken area on Aug. 31 with President Ershad, U.S. Ambassador Willard A. DePree determined that monsoon rains and subsequent flooding had created a state of calamity in Bangladesh. The Ambassador exercised his disaster assistance authority on Sept. 1, releasing \$25,000 for President Ershad's Emergency Relief and Welfare Fund.

To support in-country relief and distribution programs of U.S.-based private voluntary organizations working in Bangladesh, OFDA furnished grants to Save the Children Federation/U.S., World Vision Relief and Development, and CARE. USAID/Dhaka executed the grants. (See next section for a description of the private voluntary organizations' relief programs.)

OFDA arranged with the Department of Defense (DOD) to fly a C-5A cargo plane to Bangladesh on Sept. 9, carrying a U.S. government (USG) assessment team and OFDA-donated commodities. A.I.D. Deputy Administrator Jay Morris, serving as President Reagan's envoy, accompanied the U.S. team which comprised representatives from WASH, DOD, the U.S. Forest Service, Centers for Disease Control (CDC), A.I.D. (including the offices of OFDA and Food for Peace (FFP)), and other U.S. government offices. Three additional CDC doctors arrived in Bangladesh by commercial flight on Sept. 12, and a shelter expert, contracted through A.I.D.'s Office of Private Enterprise/Housing, arrived on Sept. 14.

The team members worked with USAID/Dhaka to provide technical assistance in the areas of disaster management, health, water purification, temporary shelter, financial management, logistics,

food, and communications. The group joined OFDA regional disaster management advisor Everett Ressler, who had been dispatched from Bangkok to Dhaka to perform an assessment of the general situation.

The commodities aboard the C-5A consisted of the following: 1,008 rolls of plastic sheeting to be used for temporary shelter; 10,010 plastic collapsible water jugs; 26 3,000-gallon water storage tanks; five crates of three-inch flexible plastic pipe; two water purification units (on loan); and communications equipment to support the team and local relief activities. The water units, each of which could produce approximately 2,400 gallons an hour, were accompanied by two operators/trainers.

A second U.S. government airlift, the cost of which was shared by OFDA and DOD, arrived in Bangladesh Sept. 15. The C-141 aircraft carried items from OFDA's Panama stockpile: six fiberglass boats, six outboard motors, one boat trailer, 150 tents, and 6,884 blankets. The boats, motors, trailer, and 3,000-gallon water tanks were donated to the BDG while the other commodities were consigned to private voluntary organizations working in Bangladesh. The total value, of the boats, motors, trailer and tents was \$80,410 (these items were not charged to a fiscal year account).

The C-141 flight also carried commodities donated by DOD from its Excess Property program. The items included cots; medical/first aid kits; dressing and surgical instrument sterilizers; isopropyl alcohol; suction and pressure apparatus; compresses, bandages and gauze dressings; plastic sheeting; field operating tables; 17 five-gallon water cans; water tank and pump; generator and accessories; four small boats; and surgical instrument stands.

Because unsafe drinking water in flood-affected areas posed a serious threat to human health, the procurement of oral rehydration salts (ORS) and water purification tablets (WPT) became a high priority. The USAID/OFDA team identified an immediate need for 2.8 million packets of ORS and 10 million WPTs. OFDA purchased a first shipment of 1 million ORS packets and 14,000 packets of WPTs from UNICEF on Sept. 15. A worldwide shortage of chlorine-based WPTs, which the BDG preferred over iodine-based tablets, delayed further procurement while a largely unfruitful search was conducted through

regional U.S. embassies. A supplier of WPTs was located in Suffolk, United Kingdom, (Kirby-Warrick) and OFDA purchased 5 million 25-liter tablets from that source on Sept. 29. OFDA entered into an agreement with the UNICEF pharmaceutical-forwarding agency, UNIPAC, for the purchase and transport of the remaining drugs and medical supplies identified by USAID as urgent requirements. The order to UNICEF on Sept. 30 was for 5 million packets of ORS (later increased by 3.7 million packets), 5 million 20-liter WPTs, and medical supplies which included antibiotics, anti-fungal medications, ophthalmic ointment, disposable needles and syringes, and aspirin. The Mission planned to distribute most of the drugs through non-governmental organization programs.

The CDC team remained in-country until late September, meeting with officials from the Ministry of Health, UNICEF, and the International Center for Diarrheal Disease Research/Bangladesh (ICDDR/B) to assess the immediate and longer-term needs for health intervention programs. The CDC team identified measles as a significant risk to flood-displaced people and recommended a targeted immunization program for children six months to 36 months in urban relief camps. A consultant from REACH (Resources for Child Health), an A.I.D.-funded project in Bangladesh, assisted the CDC physicians in implementing the immunization program.

The CDC team worked with USAID/Dhaka and the ICDDR/B to develop a rapid health survey for selected areas to determine the impact of the flood on nutritional levels. The results showed a significant decline in nutritional levels in children in the surveyed area and suggested that the right families were being targeted for food aid but that insufficient quantities were being received by the families. Based on projections of high morbidity and mortality rates due to flood-related diseases during the months following the disaster, the continued surveillance services of a CDC epidemiologist were requested through Dec. 15. Dr. Eric Mast began his assignment on Sept. 28. Congressman Tony Hall, a member of the House Select Committee on Hunger and chairman of its international task force, visited Bangladesh from Sept. 20 to Sept. 23 to assess the flood situation and to report his findings to Congress. During his four day visit, he met with President Ershad, other BDG officials, and representatives of the

international donors working with flood victims. Congressman Hall viewed several disaster areas and toured the affected areas of Jumuna, Tangail, and Ghatail by helicopter.

To help restore vital transportation links destroyed by the floods, USAID requested that the U.S. Commander-in-Chief, Pacific, (USCINCPAC) consider a civil assistance project in Bangladesh. Two CINCPAC engineers joined the U.S. government assessment team and completed an initial review of transport rehabilitation needs. A CINCPAC exercise ultimately was not needed as USAID/Dhaka supported a UNDP road rehabilitation project.

In response to the BDG's appeal for seeds to replenish stocks before the winter planting season, USAID and the UNDP established a joint donor fund and assisted the BDG in a search for procurement sources. OFDA and U.N. Disaster Relief Organization (UNDRO) provided \$1 million each toward this request, to cover the purchase of 2,000 MT of wheat seed and 500 MT of maize seed.

The USAID staff participated with other donors in several assessment and surveillance activities in the post-flood period. USAID spearheaded a multi-donor crop damage assessment with Canada, U.N. Food and Agriculture Organization (FAO), World Food Program (WFP), and UNDP as principal collaborators. USAID/Dhaka's work in this area as well as in nutrition and health surveillance, in a road assessment, and in a socio-economic survey of flood damage undertaken in cooperation with the BDG Planning Commission contributed to the development of a BDG/UNDP disaster report presented at a special U.N. meeting on Nov. 16.

In view of the continuing need for relief assistance in Bangladesh, Ambassador DePree asked the OFDA Director to extend the relief/rehabilitation period to March 31, 1989. OFDA provided an \$800,000 mission allotment from FY 1989 accounts to fund continuing activities identified by the Mission. Use of the funds included local costs for handling of emergency commodities; various assessments, including a road sector assessment; monitoring of ongoing relief programs; and a grant to World Vision Relief and Development for housing rehabilitation.

One of the earliest U.S. government responses to the flood disaster in Bangladesh was the promise of food assistance. A.I.D.'s Office of Food for Peace (FFP) agreed on the immediate release of 10,000 MT of P.L. 480 Title II food-for-work program wheat from CARE's stocks for food relief. A portion of the wheat (about 1,000 MT) was used as in-kind payment to millers engaged by CARE to process the wheat while the remainder was distributed to flood victims. The remaining in-country stocks in CARE's Title II program (over 36,000 MT of wheat) were also directed to emergency feeding. Additionally, the regular 80,000 MT program approved for FY 1989 was augmented to provide 10,000 MT of wheat directly for food relief.

The interagency committee responsible for the FFP program ensured that up to \$60 million in Title III commodities already programmed for Bangladesh in FY 1989 could be dispatched early. An agreement for an initial \$20 million in food aid was signed on Sept. 24 to allow for an early arrival in November. The regular program was later amended to include the provision of more than 120,000 MT of wheat, valued at \$20 million, to add to country stocks depleted by flood damage. The additional commodities would be monetized to provide funding for flood-related programs.

The past sale of P.L. 480 Title III food commodities had generated local currency which was made available for reconstruction projects. The activities, jointly undertaken by the BDG and the U.S. government in the context of P.L. 480 programs, were expected to make use of at least \$50 million and possibly as much as \$80 million over a two-year period (through 1990). One of the programs financed by local currency was implemented by the Grameen Bank and involved the provision of small-scale loans, primarily to groups of farmers for reconstruction of storage facilities and tubewells.

Based on the results of key assessments undertaken by the Mission, USAID proposed that the Asia/Near East (ANE) Bureau provide funding beyond the regular operating budget for FY 1989 to support a reconstruction and preparedness program in Bangladesh. This would constitute additional U.S. government assistance, supplementing continued food aid directly related to flood relief and OFDA commitments for FY 1989. The added funding from the ANE Bureau,

totaling \$10.5 million, was directed to the following activities: 1) \$5.5 million as a "buy-in" to a UNDP-designed disaster management and preparedness program to develop BDG and non-governmental organization response mechanisms for a range of potential emergencies; 2) \$2.0 million for re-equipping damaged electrical installations; and 3) \$3.0 million for health programs which would purchase additional ORS for longer-term use, set up a surveillance system in cooperation with WHO to track the need for early interventions, and reconstruct warehouses holding medical supplies to raise them above ground level.

The ANE Bureau also diverted commodities from the closed-out Burma program, consisting of nearly 16,000 MT of fertilizer valued at \$4,917,646 and UNICEF health kits worth \$648,000.

The "Bangladesh Disaster Assistance Act of 1988," passed by the U.S. Congress in October, amended Section 301 of the Agricultural Trade Development and Assistance Act of 1954 to allow funds accruing from the sale of commodities under the title to be used for disaster relief, rehabilitation, and reconstruction. The Act specified that not less than \$100 million in local currency generated under Food for Development agreements with Bangladesh should be used for disaster relief. The Act also stated that no later than six months after enactment, the President should submit to Congress a report on the efforts of the international community and governments of the region to develop regional programs for the Ganges-Brahmaputra Basin to ensure an equitable water supply and promote better flood control mechanisms.

To comply with the provision of the Bangladesh Act requiring a report to Congress, the ANE Bureau contracted the Irrigation Support Project for Asia and the Near East (ISPAN) to conduct a study on the causes of flooding in Bangladesh and on the issues involved in regional water management.

A report titled "Eastern Waters Study: Strategies to Manage Flood and Drought in the Ganges-Brahmaputra Basin" was published in April 1989.

Summary of U.S. Government Assistance

FY 1988

Ambassador's authority donated to the BDG
Emergency Relief and Welfare Fund . . . \$25,000

Grants to Save the Children Federation
(SCF)/U.S. (\$120,000), World Vision
Relief and Development (\$232,000), and
CARE (\$50,000) \$402,000

DOD airlift (C-5A) of assessment team
and commodities \$265,000

DOD airlift (C-141)
of stockpile items \$145,000

Replacement cost for 1,008 rolls of plastic
sheeting from the supplier
and stockpiles \$292,220

Replacement cost of 6,884 blankets
from Panama stockpile \$27,192

Delivery of support kits
for U.S. government response team \$368

Field support costs of
U.S. government response team \$26,000

Travel expenses of DOD logistics expert
on U.S. government relief team \$4,595

Travel expenses of USCG communications expert
on U.S. government relief team \$4,595

Contract with shelter assessment team . \$17,028

Cost of TDYs of 3 CDC
epidemiologists \$28,000

Expenses of CDC epidemiologist
Dr. Eric Mast to assist BDG with health
program (9/28-10/30) \$6,995

Travel of OFDA advisor
Everett Ressler \$1,735

Cost of miscellaneous items (50 battery
packs and freight, 6 fuel line assemblies
and gas lines for outboard motors, and radio
circuit boards) \$933

Procurement from UNICEF and shipping of
1,000,000 packets of ORS and 14,000 packets
of WPT \$240,673

Procurement from UNICEF and shipping costs
for 8,700,000 packets of ORS, 5,000,000 WPTs,
and miscellaneous medical supplies . \$1,929,980

Contract with Kirby Warrick for 5,000,000
WPTs and shipping costs \$95,205

Grant to UNDP for procurement
of seeds \$1,000,000

Travel expenses of OFDA disaster officer
(travel budget) \$3,840

Total FY 1988 (all OFDA) \$4,516,359

FY 1989

Cost of transporting plastic sheeting from supplier
to Dover Air Force Base (C-5A flight) . \$5,659

Return airlift of OFDA communications
equipment \$747

Ocean freight to replace blankets
in Panama stockpile \$10,775

Debriefing by Dr. Mast in preparation for next
phase of health program \$575

Replacement costs of 26 3,000-gallon
water tanks to stockpile \$56,000

Replacement of support kits used by USG
response team \$1,312

Mission allotment to continue
relief program \$800,000

Value of 46,575 MT of P.L. 480 Title II
wheat and of 120,000 MT Title III wheat
(AID/FFP) \$33,129,300

Funding from for reconstruction and preparedness
program (AID/ANE Bureau) \$10,500,000

Diversion of commodities from Burma program
(AID/ANE Bureau) \$5,565,646

Total OFDA \$875,068
 Total Food for Peace \$33,129,300
 Total Other U.S. Government \$16,065,646
 Total FY 1989 \$50,070,014

TOTAL \$54,586,373

(Note: The total for U.S. Government assistance does not include the use of local currency, which is jointly programmed by the BDG and the U.S. government.)

Assistance Provided by U.S. Voluntary Agencies and Private Groups

American Express Company - funneled \$25,000 through the International Child Health Foundation to the ICDDR/B and provided a \$25,000 grant to League Red Cross Societies (LRCS).

American Red Cross - channeled \$50,000 through LRCS for the BDRCS.

CARE - distributed emergency relief supplies to 25,000 isolated, destitute families hard-hit by the flooding. The supplies included prepared food, candles, matches, WPTs, and shelter materials to sustain a family of 5 for up to 3 days. OFDA provided a grant to support the program. CARE also contributed \$225,000 from other donations to the CARE International fund.

Church of the Nazarene - gave \$10,000 through World Relief Corporation, which in turn channeled the donation through CSS for emergency food assistance.

Catholic Relief Services - provided \$500,000 through Caritas/Bangladesh.

Church World Services - contributed \$5,000 from the Executive Director's emergency fund and along with the World Council of Churches provided 10,000,000 WPTs.

Episcopal Church (Presiding Bishop's Fund for World Relief) - provided a \$15,000 grant.

Food for the Hungry, International (FHI) - donated \$75,000 through its field office in Bangladesh.

International Child Health Foundation - channeled an American Express donation to the ICDDR/B for emergency epidemic control and assistance.

MAP - shipped 23 MT of medicine valued at \$1,637,105 to be distributed by the Salvation Army and the YWCA and sent a team to do an assessment.

Operation California - arranged an airlift of medical supplies and other relief goods to be distributed through CARE. Transportation and commodities cost \$1,000,000.

Oxfam/USA - sent its executive director on Sept. 13 to supervise distribution of Oxfam/USA-donated biscuits, WPTs, and medicine in the Comilla area and to meet with government officials and donor representatives.

Rotary International - gave \$30,000.

Save the Children Federation (SCF)/US - carried out a 3-stage relief and rehabilitation program for 40,000 flood victims in Nazinagar, Ghior, and Mirzapur. SCF distributed dry food, ORS, WPTs, and shelter materials in the first stage; provided seeds, small loans, and food-for-work reconstruction activities in the second stage; and supported cooperatives in the third stage. OFDA supplied grants in support of stage one; SCF/US contributed approximately \$400,000 (including a SCF/Sweden donation) to fund the program.

Texaco/NY - provided medicine and medical equipment to a central hospital and 3 clinics in the Sylhet region.

World Relief Council - forwarded a contribution from the Church of the Nazarene and sponsored several teams which delivered 8 MT of rice, medicine, and alum powder (to purify water) each day to the needy. World Relief expected 7 doctors to arrive in-country to work with the distribution teams.

World Vision Relief and Development (WVRD) - distributed locally purchased rice, lentils, salt, molasses, and flour to flood victims in Bogra, Mymensingh, Netrakona, Sherpur, Dhaka, Barisal, and Faridpur. OFDA supplied grants to WVRD for distribution costs. WVRD also financed a \$2,100,000 rehabilitation program.

YMCA - channeled \$50,000 of emergency food and \$200,000--collected from YMCA chapters worldwide--through the Bangladesh YMCA.

YWCA - contributed \$10,000 from chapters around the world.

TOTAL \$6,357,105

Assistance Provided by the International Community

International Organizations

Asian Development Bank - sent a team to appraise damage and initiate additional funding for the rehabilitation and reconstruction of infrastructure.

CARE International - raised \$750,000 (does not include CARE/US contribution) and solicited in-kind donations to assist relief activities coordinated through the CARE Crisis Center in Bangladesh.

Caritas Internationalis - provided general assistance worth \$2,423,139.

EC - furnished \$560,000 through the Fed. Rep. of Germany Red Cross and Irish Concern for the local purchase of food, clothing, transport, and other essentials; pledged to replace more than 100,000 MT of wheat and 1,800 MT of vegetable oil from a consignment of EC food sent to Bangladesh in June, worth \$31,188,340; donated rice, worth \$447,273, through the Fed. Rep. of Germany Red Cross; and financed emergency medical aid valued at \$1,110,000.

Food and Agriculture Organization (U.N.) - provided vegetable seeds and animal vaccine, all valued at \$550,000; appealed to donors for assistance in areas of food, agricultural inputs, and logistics.

International Civil Aviation Organization (ICAO) - assisted in the restoration of runway lighting and guidance electronics at Zia International Airport.

League of Red Cross and Red Crescent Societies (LRCS) - on behalf of the BDRCS, issued appeals to sister societies for donations; provided \$2,237,636 worth of food, clothing, and transportation funds.

OIC - provided relief supplies worth \$50,000.

OPEC - gave \$100,000 through the U.N. Disaster Relief Organization (UNDRO) for purchase of medicine and medical supplies.

U.N. Women's Guild - contributed \$649.

U.N. Development Program - gave \$50,000 for the purchase of cattle vaccine; implemented a low-cost housing reconstruction program costing \$1,100,000; reprogrammed current assistance activities valued at \$4,500,000 toward short-term rehabilitation; and set up a seed procurement project with the BDG and contributed \$1,000,000 toward the appeal.

The UNDP (and UNDRO) coordinated donor contributions during the emergency phase; participated in a U.N./BDG joint study on the flood's impact for a special U.N. meeting on Bangladesh; and fielded an international team to collect and evaluate data on flood causes and provide expertise on flood management and preparedness.

U.N. Disaster Relief Organization (UNDRO) - contributed \$25,000 for relief goods, established a disaster relief fund for seed procurement, and launched a general international appeal for assistance at the BDG's request. U.N. Secretary General Javier Perez de Cuellar appointed UNDRO director Mohammad Essaafi as coordinator of international donations to Bangladesh. Essaafi traveled to Bangladesh on Sept. 13 to perform an assessment. UNDRO assisted in the disaster preparedness component of the UNDP-supported preparedness training and management program.

UNICEF - appealed internationally for contributions (\$5,000,000) in the areas of health, nutrition, water and sanitation. UNICEF increased its ORS project and its mass media campaign associated with UNICEF's health and sanitation project. UNICEF also mobilized a major non-governmental organization (NGO) partner (the Bangladesh Rural Advancement Committee) to procure, cook, and distribute food to the homeless and destitute victims.

World Council of Churches (WCC) - provided food, saris, towels, ORS, candles, matches, seeds, and cattle feed; commodities, transport and handling costs totaled \$331,201.

World Food Program (WFP) - reprogrammed 19,000 MT of wheat, valued at \$4,800,000, and sent an additional 16,830 MT of wheat and rice worth \$3,700,000, including transport. As of Sept. 30, the total amount of food received in response to WFP appeals was 275,330 MT, of which 245,330 MT was new aid. The food was channeled through in-country WFP programs.

World Health Organization (WHO) - provided a \$40,000 grant from its New Delhi regional office and relief supplies worth \$36,170. WHO staff independently pooled \$1,948 from its own personnel for relief.

World Bank - assumed leadership in developing a matrix of funding requirements by sector and sources of funding for a rehabilitation program in Bangladesh.

Governments

Argentina - gave 3,000 MT of wheat, valued at \$600,000, through the WFP.

Australia - supplied relief goods and a damage assessment worth \$293,652; 5,000 MT of wheat valued at \$813,000; and reconstruction assistance totaling \$81,301.

Austria - provided seeds through UNDRO valued at \$147,000.

Belgium - contributed \$1,600 and a shipment of ORS, potable water, cereals, and containers, all valued at \$251,607; also provided medicine, tents, and boats worth \$256,410 through the Belgian Red Cross for the ICDDR/B.

Bhutan - donated relief supplies worth \$706,000.

Canada - provided relief supplies through non-governmental organizations valued at \$3,500,000; medicine through UNICEF worth \$833,333; and 36,000 MT of wheat through the WFP worth \$7,380,000. Canada also reprogrammed \$131,200 in bilateral assistance for reconstruction activities.

China, People's Rep. - lent 3 helicopters.

Denmark - channeled \$278,000 through DanChurchAid and about \$375,000 through UNICEF; also gave \$120,000 through ICDDR/B and 20,000 MT of rice, valued at \$6,300,000,

through WFP.

Finland - donated \$320,000 through non-governmental organizations.

France - furnished 10,000 MT of wheat, including maritime transport, and an airlift of logistical equipment for relief and reconstruction, all worth \$5,031,000. France also provided 2 ultra-light aircraft on loan.

Germany, Fed. Rep. - contributed lentils and clothing through the Red Cross valued at \$259,460; foodgrains worth \$811,000; and \$5,405,000 in rehabilitation assistance.

Hungary - provided medicine valued at \$40,000.

India - lent 4 helicopters and provided food and clothing.

Indonesia - gave relief supplies worth \$95,000.

Iran - sent a planeload of relief supplies.

Iraq - lent 2 helicopters.

Ireland - channeled \$508,000 in relief supplies through non-governmental organizations.

Italy - donated relief and rehabilitation supplies worth \$2,200,000 and 2,500 MT of rice.

Japan - gave \$500,000 for relief assistance and \$8,000,000 to procure materials for rehabilitation of flood-affected areas; also provided 15 boats, medicine, 30 tents, 10,000 WPTs, 20 water tanks, 1 MT biscuits, and 1,000 blankets, all valued at \$390,000, and transported goods sent by Japanese local governments at a cost of \$148,720. And, Japan pledged 5,000 MT of wheat and reprogrammed bilateral activities to provide vegetable seeds worth \$442,000 and low lift pump engines valued at \$14,727,540 for rehabilitation purposes.

Korea, Rep. - donated medicine and other relief supplies worth \$150,000.

Kuwait - sent 8 planes loaded with relief goods.

Luxembourg - provided food, medicine, and reconstruction materials valued at \$256,410.

Malaysia - donated food and medicine worth \$117,930.

Maldives - furnished relief supplies, valued at \$20,000, through UNDRO.

Nepal - provided \$100,000 in emergency aid.

Netherlands - contributed cash and food, clothes, plastic sheeting, and medicine, all valued at \$351,000; also \$2,031,000 through Dutch non-governmental organizations for relief and rehabilitation supplies.

New Zealand - gave \$133,000 for relief items.

Norway - supplied food, medicine, and clothes worth \$880,000; high protein biscuits, valued at \$148,547, through UNDRO/WFP; and \$863,308 through non-governmental organizations; also reprogrammed \$1,000,000 in bilateral assistance for flood rehabilitation.

Pakistan - furnished medicine valued at \$392,000 and 3,000 MT of cereals worth \$560,000.

Philippines - donated medicine worth \$115,000.

Poland - contributed medicine, WPTs, and blankets.

Qatar - dispatched 5 relief flights laden with medicine, milk, rice, and other food.

Saudi Arabia - sent 12 planeloads of food and supplies and furnished 3 helicopters on loan.

Singapore - donated biscuits and WPTs.

Sri Lanka - provided \$320,000 in emergency relief.

Sweden - purchased food, medicine, WPTs, and other relief supplies through non-governmental organizations, all valued at \$1,386,747; and gave 20,000 MT of wheat, valued at \$1,500,000, through WFP.

Switzerland - assisted the UNDRO damage assessment at a cost of \$15,000 and supplied food, ORS, WPTs, tarpaulins, tents, and other relief items, all valued at \$933,701.

Thailand - gave \$20,000 worth of medicine and 500 MT of rice valued at \$150,000.

Turkey - supplied \$10,000 for emergency assistance.

United Kingdom - furnished 50,000 MT of wheat valued at \$8,445,500 and other relief items worth \$4,222,500; also provided airport lighting spares at a cost of \$337,800 and other rehabilitation assistance valued at \$4,223,000. The United Kingdom also reprogrammed \$11,823,000 of bilateral assistance to provide bridging materials.

Yemen, People's Dem. Rep. - gave 1,000 MT of rice.

Yugoslavia - donated \$100,000 worth of relief supplies.

Non-Governmental Organizations

Caritas/Germany, Fed. Rep. - donated \$150,000.

Christian Commission for Development Bangladesh (CCDB) - gave \$150,000.

France-Liberte - supplied medicine, rubber boats and dinghies.

French non-governmental organizations (others) - contributed rice, vaccine, and other relief supplies.

Germany, Fed. Rep., non-governmental organizations - channeled relief items worth \$756,000 through Caritas and Diakonisches Werk.

IIRO (Saudi Arabia) - provided \$196,978 for relief and rehabilitation assistance.

Japanese local governments - collected relief goods valued at \$656,000 (transported by the Japanese government).

Japanese non-governmental organizations - donated \$411,287.

Japanese private company - donated sewing machines.

Netherlands private company - gave 5,000 kg. of seed potatoes through CARE.

Oxfam/UK - distributed food and WPTs and assisted with house repair, all valued at \$522,523.

Redd Barna/Norway - gave \$50,000.

Shapla Neer - provided winter vegetable seeds.

Tear Fund/UK - channeled \$10,000 through
CSS/Kulna for emergency food needs.

United Kingdom Red Cross - contributed 3
fiberglass boats, motors, and spare parts through
BDRCS; the items were valued at \$15,000.

TOTAL \$159,470,410