



**LATIN AMERICAN CASES**  
**Hurricane Mitch (1998),**  
**Flash Floods and Landslides in Venezuela (2000),**  
**El Salvador Earthquakes (2001)**

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**INTRODUCTION**

Disaster mitigation, risk reduction, recovery and rehabilitation after a catastrophe and the creation of safer societies require the active participation of and interaction among numerous actors at the local, national, and international levels. In Latin America, the contribution by the international community to disaster mitigation and management has been through international organizations, bilateral agencies, and non-governmental organizations.

Under the current schemes, however, international collaboration has not been effective in creating the institutional, financial, legal, political, and social frameworks necessary for the implementation of self-sustainable, long-term risk reduction initiatives and programs. This is true not only for disaster reduction but even for the programs intended to promote development of the so-called developing countries.

Take the case of Nicaragua, for example. Many years of significant foreign assistance and attention from international organizations have not contributed to strengthen Nicaragua as an independent, self-sufficient nation. From 1991 to 2003, Nicaragua received about US\$ 500 million per year in international assistance. However, and after almost fifteen years of this continuous flow of foreign assistance, 80% of the current public investment and most of the NGO's projects are paid by international collaboration funds.<sup>1</sup> Nicaragua's total exports are roughly equivalent to just 35% of the country's total imports resulting in a continuous deficit and an increasing debt (currently equivalent to 160% of the annual GNP).<sup>2</sup> Nicaragua is now more dependent on foreign assistance than probably any time before in its history.

The situation in the field of disaster reduction in Nicaragua is not much different. After the devastating impact of Hurricane Mitch (1998), millions of dollars have been given in foreign assistance mainly to implement mostly technical and, in many cases, repetitive and uncoordinated projects. The result of foreign assistance for disaster reduction has been many reports, maps, and publications that are not being utilized and whose existence is, in many

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<sup>1</sup> José Luis Medal, Is Foreign Assistance a Positive Factor in Nicaragua?, La Prensa, May 24, 2004

<sup>2</sup> Nicaragua Central Bank, May 20, 2004



instances, completely ignored. Very few technical studies have actually been implemented in practice and there is no practical way to determine whether Nicaragua's risk of natural disasters is higher or lower than five years ago. Similar to the country's economy, Nicaragua remains very much dependent on foreign assistance for disaster reduction activities.

The many projects implemented in Nicaragua through international collaboration schemes have had little impact in building local capacity. Most of the products produced by the international assistance projects are left unrevised and unchanged by the local technical specialists, who, in many cases, are unable to repeat, reproduce, modify or expand the produced results. As a result, there are many maps and reports whose validity and accuracy are not completely clear and whose usefulness has not been reliably determined. Moreover, due to the lack of understanding of the methodologies utilized, existing results cannot be updated through the proper incorporation of new information that may be generated or obtained.

The observed impact (or lack of it) of international cooperation in reducing natural disasters risk in developing countries seems to indicate that important changes are required in the mechanisms that are currently utilized to provide, implement, and evaluate this assistance. To analyze the effectiveness of international cooperation in Latin America, the cases of three different disasters are presented in this report:

- Hurricane Mitch (October 1998)
- Flash Floods and Landslides in Venezuela (December 2000)
- El Salvador Earthquakes (13 January and 13 February, 2001)

For each of these disasters, a brief description of the phenomenon and its main effects is first presented. Then, and considering that all these disasters' effects were exacerbated by the existing levels of poverty and that their impact resulted in even higher levels of poverty, a description of each disaster's impact on the national economy is presented. The main emergency response activities performed by both national and international organizations are then recounted and, finally, the reconstruction and recovery processes are described and analyzed putting special emphasis on the role played by the international cooperation.

To conclude the report, a short list is presented of possible ways to improve the effectiveness of international cooperation in the process of reducing natural disaster risk in developing countries.



## **HURRICANE MITCH (OCTOBER 1998)**

### **Description**

Hurricane Mitch struck Central America at the end of October 1998, causing the largest natural disaster in the region's history. It claimed the lives of over 10,000 persons, leaving some 9,000 unaccounted for, 1.5 million displaced, and affecting one out of every five inhabitants in Honduras, Nicaragua, Guatemala, and El Salvador. Agricultural production suffered heavy losses; vital economic and social infrastructure was destroyed. Estimates are that the overall economic losses amounted to over four billion dollars, slowing the expected annual growth rate for 1999 from 5.3 to 2.9 percent. The poor and vulnerable were the most affected. Most already lived in conditions of extreme poverty and food insecurity. Mitch aggravated these conditions, leaving over one million people in need of emergency food and with practically no source of income.<sup>3</sup> The extent of the damage was exacerbated by the considerable environmental degradation and chronic poverty that existed before the storm. Some experts classified the Mitch Tragedy as the biggest environmental denunciation of the last few decades.

With generous pledges of support from international donors, Central Americans set out to rebuild in 1999. The exposed environmental degradation and extreme poverty of the region dictated that reconstruction could not be simply rebuilding what had existed before. Instead, the situation called for transformation by creating the structures and systems to mitigate the damage from future natural or man-made disasters. It also called for reducing the poverty and the environmental exploitation that had made the region so vulnerable. The recognition of these points demanded new thinking and new approaches to reconstruction and development.

Hurricane Mitch swept across Honduras, Nicaragua El Salvador, Guatemala, Belize, and Costa Rica early in the week beginning October 26, 1998, resulting in torrential rains, flooding and landslides. At its height on 26 and 27 October, the hurricane had sustained winds over 300 km per hour. Although the region is often affected by tropical storms, Hurricane Mitch reached category V (the highest) and was one of only four hurricanes the last century to reach this level in Central America.

The loss of life, devastation and ruin resulting from the effects of a natural phenomenon, Hurricane Mitch, were severely compounded by man-made factors. Population pressure leading to a large-scale deforestation and the cultivation of marginal lands without soil conservation provoked mudslides. Flooding was aggravated by a lack of adequate watershed management. The poorest sectors of the population, who have restricted access to land and live in marginal, high-risk areas, bore the brunt of the disaster effects. The Hurricane

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<sup>3</sup> World Food Program, Assistance for reconstruction and rehabilitation for families in Central America affected by Hurricane Mitch, January 1999



uncovered the extreme vulnerability of large parts of the population and revealed the pressing need for sustainable, environmentally responsible policies focusing on social equity and poverty alleviation.

The proportions of the tragedy in Honduras and Nicaragua were immense. El Salvador and Guatemala were also hard hit. Belize was affected to a much lesser extent. Over three million people were directly affected by Hurricane Mitch and over half a million people lost their homes.<sup>4</sup> The irretrievable loss of life, the impact on food availability and thus particularly on the nutritional status of vulnerable groups, damage to basic infrastructure, agriculture, production, industrial and commercial entities meant that, in some areas, over twenty years of development were virtually wiped out. The potential increase in international and internal migration became a huge challenge to be addressed in the short term by the countries in the region.

### **Impact on the Economy**

The rains, floods and overflowing rivers had a strong impact on the people of Central America. The regional total of dead and missing was higher than 18,000<sup>5</sup> concentrated in Honduras and Nicaragua. Those directly affected (dead, injured, missing and evacuated) reached almost 3.5 million people, or 11 per cent of the total population of Central America. No other single phenomenon is on record as having simultaneously affected all five countries, and causing so many victims.

The impact on the population of an event on this scale cannot be fully appreciated through a purely economic assessment of the losses. As yet no parameters are available for conducting an evaluation of the effects of temporary family disintegration, the loss of the pillars of the household economy, the disappearance of personal terms of reference, the traumatic effects of physical disability or the irreversible weakening of the family unit.

As in previous disasters, most of the affected population belonged to low-income groups, whose suffering was exacerbated by the loss of their homes, furniture and personal effects, which is of enormous significance. Unfortunately, the settlement of particularly vulnerable areas by these groups had increased as the population and marginalization had grown. Many people did not have access to the social services that would alleviate their sanitary vulnerability. They were particularly affected by the lack of drinking water sources and adequate human waste removal systems. The hurricane highlighted the fragile nature of infrastructure to mitigate these deficiencies. Many water mains and

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4 United Nations, Hurricane Mitch, Inter-Agency Transitional Appeal for Relief and Immediate Rehabilitation in Honduras, Nicaragua, El Salvador, Guatemala, and Belize. Dec. 1998

5 No official figures are available on the number of missing people who were later found



latrines were destroyed by floods and landslides, which in turn contaminated wells and water mains.

The rural population was the worst affected by the destruction of farmland and local roads and bridges, along with those employed in trade in agricultural commodities. This was worsened by the loss of income sources and the situation continued critical for more than a year in areas such as banana-growing regions.

As a result of the disaster's many effects, around 466 000 people had to remain in shelters for several months, and some 82 000 families were unable to return to their homes for a long time, which worsened problems stemming from the internal and external migration of a large number of men of working age.<sup>6</sup>

Hurricane Mitch modified the favorable prospects for growth that were beginning to prevail in the region. In fact, from 1994, when the last and oldest conflict in the region was put to an end in Guatemala, the countries of Central America were beginning to feel the effects of a long process of macroeconomic adjustment that they had begun at the end of the eighties. Increased discipline in financial policies and the initiation of certain economic reforms had enabled them to keep control, albeit still precariously, of the imbalances that had prevented a return to the road to firm, significant growth during the previous decade.

On the whole, economic activity in the region had been on the increase prior to hurricane Mitch and was expected to continue developing rapidly in 1998 due to strong foreign demand, capital inflows and sustained capital formation. However, the hurricane's effect on production, amounting to more than one per cent of the growth rate of gross domestic product (GDP), reflects the magnitude of the disaster.

The fiscal situation was also affected, both by the increase in recurrent expenses to tackle the emergency and address the most pressing rehabilitation needs, and by the decrease in tax collection stemming from short-term production losses. In some cases this increased the vulnerability and fragility of the public apparatus and posed major challenges in terms of strengthening institutional and fiscal systems in order to carry out reconstruction work.

In some countries the macroeconomic effects lasted for two or three years. Loss of crops

led to a direct drop in exports, which coupled with an increase in imports to ensure food supplies and inputs for reconstruction, added to the trade deficit.

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<sup>6</sup> Most of the information in this section was taken from UN-Economic Commission for Latin America and the Caribbean's Report Central America: Assessment of the Damage Caused by Hurricane Mitch, 1998-Implications for economic and social development and for the environment, May, 1999.



The impact on each country was different. In Honduras, losses amounted to the equivalent of 80 per cent of the 1997 GDP, whereas in Nicaragua they were almost 49 per cent of GDP. The impact on the other countries was relatively smaller. In total, the damages amounted to the equivalent of 13 per cent of Central America's GDP in current dollars and seriously affected the region's payment capacity: total losses represented 34 per cent of the region's foreign debt and 67 per cent of annual gross capital formation.

GDP growth in the region as a whole during 1998 was calculated at 4.6 per cent, or 1.3 per cent lower than the rate envisaged prior to the disaster. Honduras suffered the most dramatic drop, from an estimated 5.1 per cent to 3 per cent, while Nicaragua's was cut by 2 per cent. In the other countries the immediate impact was less significant.

Lower income and damage to infrastructure had also a negative effect on intra-regional trade. Although total imports increased as a result of the need for inputs to replace equipment and supply products to substitute domestic goods, the region's capacity to meet these needs was limited.

Taking the region as a whole, total losses were estimated at some US\$6 billion, of which a little over 3.100 billion were in capital assets and pending production (direct damages), with a slightly lower sum (2.918 billion) corresponding to lost income, interrupted production processes, services not performed, unpaid taxes, diminished exports and other items (indirect damages). Replacing lost or damaged infrastructure and direct losses were estimated at slightly less than US\$5 billion, with direct implications on the balance of payments for over 1.600 billion.

Damage to the social sectors —amounting to more than US\$795 million— was particularly critical in health infrastructure, because in addition to the facilities destroyed, an extraordinary demand was placed on health services during the emergency phase. This became a problem of regional scope due to the risk of epidemiological transmission from one country to another, which was aggravated by the migration of displaced people.

The chronic lack of housing prevailing in the region before the disaster was exacerbated by the direct loss of 386 000 units in this sector. A speeded-up housing reconstruction program of that magnitude entailed a far higher amount than the countries' demonstrated building capacity. The sector, therefore, needed substantial investments over a period of between three and five years. Foreign assistance has also been crucial to attend the housing needs.

### **Emergency response activities**

The governments of the most affected countries mobilized all resources and personnel immediately to mitigate the suffering of the victims. Owing to the magnitude of the disaster, the President of Honduras, for example, launched an



international appeal for assistance and, from the beginning, the government, as well as religious institutions and NGOs, spared no effort in providing assistance to those in need; donating food, water, clothing, and medical supplies. Preliminary estimates of private contributions totaled approximately US\$420,000, not including medical and other supplies.<sup>7</sup>

A national Ad-hoc Emergency Management Committee (CONE) was created to function as an information center, headed by a Minister of State. The permanent Committee for Contingencies (COPECO) was the coordinating body for all the Regional Disaster Committees (CODERs) and Municipal Disaster Committees (CODEMs). Information was fed from the CODEMs through CODERs to COPECO and CONE.

Regarding the United Nations initiatives, in Honduras, for example, the UN System moved quickly to mobilize its resources immediately after the hurricane. Providing assistance to the national services involved in relief and rescue operations, including financial and technical support for the provision of food, aid, water supplies, and medical care.

The office of the UN Resident Coordinator performed the vital function of facilitating the flow of information on the situation, enhancing a coordinated response between the UN System, the Government, and the international donor community. A special "Mitch" website was established to keep the international community regularly updated. In addition, a United Nations Disaster Assessment and Coordination team was mobilized to assist the overall situation and needs assessment and in the coordination of the international assistance, and a senior emergency adviser was recruited to facilitate the coordination between all the main actors.

The operational agencies quickly responded to the emergency, too. In the Honduras case, for example, WFP, FAO, UNDP, WHO/PAHO and UNICEF developed emergency plans with the support of United Nations Volunteers (UNVs) and were closely involved in relief assistance to the victims of this disaster (food, medical supplies, essential drugs, clean water, and logistics).

In the short term, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) made a transitional appeal of more than US\$150 million to the international donor community to fund the region's relief needs and the most immediate rehabilitation requirements. FAO, for example, was the UN agency responsible for the agricultural component of the consolidated appeal which amounted to US\$22.4 million. The Organization's Special Relief Operations Service (TCOR) organized the distribution of basic inputs - including seeds, fertilizers and hand tools - to the hardest-hit rural communities. The idea was

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<sup>7</sup> United Nations, Hurricane Mitch, Inter-Agency Transitional Appeal for Relief and Immediate Rehabilitation in Honduras, Nicaragua, El Salvador, Guatemala, and Belize. Dec. 1998



that, by encouraging local food production, farmers would be better equipped to feed themselves and their families and the need for food aid would be reduced.

Responding effectively to such widespread level of destruction and damage was not an easy task, though. Local and international relief workers worked around the clock in Honduras and neighboring countries to deliver food, water and medical supplies, repair roads and bridges, and rebuild water systems. Two weeks after the hurricane hit, however, relief workers still faced incredible obstacles trying to deliver much-needed supplies to the hardest hit areas. While increasing numbers of airborne relief missions were being carried out daily, ground conditions made it impossible to land helicopters in many communities. Widespread flooding and mudslides cut off access to many isolated towns, and collapsed bridges and impassable roads further hindered access to areas still desperate for help. As many as 40,000 people were estimated to still be isolated in the region, some with little or no food or water, according to the International Federation of Red Cross and Red Crescent Societies (IFRC).<sup>8</sup>

In response to repeated appeals for aid from Central American leaders, governments from around the world pledged their financial support. US President Clinton authorized nearly \$70 million in aid, the European Union approved \$7.7 million in aid, and Canada, Spain, Taiwan and Japan also made financial contributions to the relief effort. The World Bank announced its plans to redirect existing loans to provide \$20 million in immediate aid to Central American countries battered by Hurricane Mitch. Some of the countries' debts were also forgiven. The IFRC launched an appeal for 12.5 million Swiss francs to provide food, shelter and medicine to 180,000 people for three months.<sup>9</sup>

### **Recovery/ Reconstruction activities**

The impact of Hurricane Mitch on Honduras, Nicaragua, El Salvador, Guatemala, and Belize was of an unprecedented magnitude. The impact was compounded by large-scale deforestation and the cultivation of marginal lands without soil conservation.

A concerted high-level regional and international effort was undertaken to begin addressing the medium and long-term needs for rehabilitation and reconstruction. The Presidents of Costa Rica, El Salvador, Honduras, Nicaragua, and Guatemala made a joint appeal for a Rehabilitation and Reconstruction Plan for the countries hit by the Hurricane Mitch and a Consultative Group Meeting held in December 1998 by the Inter-American

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<sup>8</sup> Turk, Michele, Despite Massive Relief Effort in Central America, Recovery Will Take Time, Disaster Relief Organization website

<sup>9</sup> Turk, Michele, Despite Massive Relief Effort in Central America, Recovery Will Take Time, Disaster Relief Organization website



Development Bank reviewed preliminary reconstruction programs.<sup>10</sup> Moreover, an Inter-agency meeting (FAO, IFAD, ILO, UNCTAD, UNEP, UNESCO, UNFPA, UNHRC, UNICEF, UNIDO, WFP, WHO, IDB, IMF, World Bank, IOM, IFRC, InterAction) co-chaired by UNDP and OCHA on 18 November 1998 underlined the need for a Transitional Appeal in order to raise adequate support for continuing relief needs as well as to forge links with longer-term rehabilitation.

The overall total of the appeal was of US\$ 152,934,914 distributed as follows (in %) among country-level and regional programs: 54.2% for Honduras, 25% for Nicaragua, 10.6% for El Salvador, 9.3% for Guatemala, 0.6% for Belize, and 0.3% for regional activities. The following main sectors were covered by the appeal: health, water and sanitation, shelter, food security, agriculture, education, coordination, and management.<sup>11</sup>

On December 10-11, 1998, within six weeks of the Hurricane, the Inter-American Development Bank (IDB) sponsored an emergency donor meeting at its headquarters in Washington, DC. Delegations from Central American nations and representatives from the donor community heard presentations from the World Bank and the United Nations

Development Program (UNDP) of initial comprehensive data on the extent of the hurricane's destruction and costs. It was at this forum that the IDB agreed to convene a Consultative Group meeting for the Reconstruction and Transformation of Central America in Stockholm.

In a special meeting of the Bank's Governors held in December, 1998, the IDB pledged \$100 million to their newly established Central America Reconstruction Fund that would provide concessional loans to Honduras and Nicaragua. Under the Fund for Special Operations (FSO) Honduras and Nicaragua became eligible for approximately \$120 million in concessional loans per year. (These loans generally have up to 40 years final maturity and up to a 10-year grace period for principal payments; normally they carry an interest rate of 1% during the grace period and 2% afterward.). The Central America Reconstruction Fund provides an additional source of concessional lending for reconstruction projects.

In addition, the IDB administered Multilateral Investment Fund (MIF) established a \$12 million Microenterprise Recovery Program to help Central American micro-lending institutions suffering from losses from loans that could not be repaid on time due to the hurricane, or for lending institutions that needed to rebuild their own damaged infrastructure, by providing long-term low interest financing and technical cooperation assistance.

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<sup>10</sup> United Nations, Hurricane Mitch, Inter-Agency Transitional Appeal for Relief and Immediate Rehabilitation in Honduras, Nicaragua, El Salvador, Guatemala, and Belize. Dec. 1998

<sup>11</sup> United Nations, Hurricane Mitch, Inter-Agency Transitional Appeal for Relief and Immediate Rehabilitation in Honduras, Nicaragua, El Salvador, Guatemala, and Belize. Dec. 1998



Finally, the IDB also offered Central American governments non-financial assistance to strengthen and modernize their procurement systems.

A cornerstone in the design and implementation of the regional reconstruction and rehabilitation processes was the Stockholm Consultative Group Meeting. On May 25-28, 1999 in Stockholm, Sweden, the Inter-American Development Bank chaired a meeting of the Consultative Group (CG) for the Reconstruction and Transformation of Central America. The conference was a forum for Central American nations to present their plans for national reconstruction and transformation, and an opportunity for donor countries to make pledges and coordinate funding priorities in response to the crisis provoked by Hurricane Mitch.

The Central American governments estimated the financing required for reconstruction and transformation to be approximately \$9.1 billion for the region. Based on the proposed plans for reconstruction, the international donor community made pledges to finance various parts of the programs. The IDB announced that it was prepared to provide approximately \$3.5 billion in financing over the next four years to assist Central American countries. The representatives for Honduras and Nicaragua estimated their reconstruction needs to be roughly \$4 billion and \$2.5 billion, respectively. Of the funding provided by the IDB to Central America, approximately \$1.3 billion in concessional loans were designated for Honduras and Nicaragua, the two countries worst hit by the hurricane; the rest would be provided in ordinary capital (commercial rate) loans to El Salvador, Guatemala, and Costa Rica. The Bank also agreed to follow-up the Stockholm meeting by convening national consultative group meetings in Honduras and Nicaragua in the year 2000.

In addition, delegates from donor nations, Central American countries, and multilateral lending and development agencies agreed on a final statement, the so-called "Stockholm Declaration," with the following priorities to guide the reconstruction and transformation process:

- Reduce the social and ecological vulnerability of the region, as the overriding goal.
- Reconstruct and transform Central America on the basis of an integrated approach of transparency and good governance.
- Consolidate democracy and good governance, reinforcing the process of decentralization of governmental functions and powers, with the active participation of civil society.
- Promote respect for human rights as a permanent objective. The promotion of equality between women and men, the rights of children, of ethnic groups and other minorities should be given special attention.
- Coordinate donor efforts, guided by priorities set by the recipient countries.



- Intensify efforts to reduce the external debt burden of the countries of the region.<sup>12</sup>

Hurricane Mitch gave Central American governments and civil society groups, bilateral and multilateral donors, and international NGOs the opportunity to intervene in and shape reconstruction priorities and programs in light of their own goals and ideology. Five years later, much of the damaged infrastructure of Central America has been repaired. There are the beginnings of early systems to warn populations of impending natural disasters and prepare for them. There are also nascent efforts to relocate housing and other buildings from vulnerable areas. But regional economies have changed little and poverty continues to be severe. Governments have barely begun to institutionalize the fight against corruption (a problem that can be considered a constant man-made threat) and have only reluctantly begun dialogues with civil society groups on themes they consider their areas of expertise.

Millions of dollars in international assistance have been utilized to implement many projects that seem to lack proper coordination and, therefore, have not had the expected impact. Moreover, there is not practical way to measure progress in regional risk reduction. As a consequence, it is impossible to say whether the risk levels in the countries of the region have actually been reduced or not. There is still a long way to go in the process of making the region safer to natural disasters.

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<sup>12</sup> From "The Stockholm Declaration." 1999 – An Inter-American Development Bank Document



## **FLASH FLOODS AND LANDSLIDES IN VENEZUELA (DECEMBER 2000)**

### **Description**

On December 15<sup>th</sup> and 16<sup>th</sup>, 1999, a large scale disaster caused by debris flows and floods in the Vargas State along the Caribbean Sea and also in the Caracas Metropolitan Area, resulted in a huge amount of casualties and damage. In the Vargas State, the disaster destroyed lifelines such as roads and drinking water supply systems, and completely devastated seven towns in the coastal area. Thousands of houses were destroyed and many lives were lost. In the Caracas Metropolitan Area, the debris flow was fortunately small compared with that of the Vargas State, probably because of less rainfall. But still more than 300 landslides and slopes collapsed at some 70 locations, some 100 people were missing or dead. In total, an estimated 15,000 to 20,000 people died, more than 8,000 homes were affected,<sup>13</sup> and authorities had to plan the evacuation of about 500,000 survivors from the region.<sup>14</sup>

Ten days of torrential rains triggered deadly flash floods and massive mudslides that raged through nine northern states where 75 percent of the country's population live, sweeping away thousands of homes. Roads were completely washed out, making relief efforts extremely difficult. Rainfall above annual averages started in July 1999 and increased during the first days of December reaching their peak on December 15<sup>th</sup> and 16<sup>th</sup>, when daily rainfall records were higher than the total annual average of 950 mm.<sup>15</sup> As a result, severe damage of costly consequences was observed covering extensive areas of the Venezuelan territory caused by mudslides and floods that catastrophically affected human settlements, urban and rural infrastructure, basic services, and interrupted productive activities.

Lack of basic information hampered the initial evaluation of damage and subsequent emergency response activities. Faulting hydro-meteorological measurement stations did not allow the proper assessment of the natural phenomenon and the outdated regional cartography did not reflect recent occupation and development of the affected areas and its corresponding level of vulnerability. Early warning systems were not available to prepare authorities and communities for the emergency. Immediate response activities, however, allowed a good assessment of the catastrophe's magnitude that facilitated the orderly implementation of search, rescue, and shelter-provision activities with the participation of the armed forces, governmental authorities, and the general public.

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13 Website of the European Union's External Relations, The EU's Relations with Venezuela-Cooperation

14 Long, Cynthia, Death Toll Mounts in Venezuela Floods, Disaster Relief Organization report, Dec. 20 1999

15 CEPAL, PNUD, Los Efectos Socioeconómicos de las Inundaciones y Deslizamientos en Venezuela en 1999. February 2000.



## **Impact on the Economy**

According to the United Nations' Economics Commission for Latin America and the Caribbean, CEPAL, the damage caused by the rain, floods, and mudslides amounted to a total of US\$ 3,237 million, which is equivalent to 3.3% of Venezuela's GNP. The actual impact to the economy, however, can be better understood when the damage by state is considered. While the damage in the Caracas Metropolitan Area amounts to 3% of the state's contribution to the GNP, the losses in the states of Vargas, Falcón, and Miranda amount to 167%, 11%, and 6% of the corresponding state contributions to the GNP. This shows the extraordinary magnitude of the catastrophe in Vargas state and the very important impact of the disaster on the economies of the Falcón and Miranda states.

Huge mudslides and movement of earth masses caused extensive damage to buildings, infrastructure, and industrial facilities. Sixty percent (US\$ 1,961 million) of the total losses correspond to direct physical damage while the remaining losses are due to indirect damage caused by the disruption of production and other economic activities. Most of the losses were due to damage to the transportation, water-supply, sanitary, and electricity infrastructure.

The analysis of the impact to each economic sector showed that the transportation sector was the most affected concentrating 23% of the total losses followed by the housing sector (16% of the total) and the tourism sector (9% of the total). The physical damage was so extensive that it was estimated that, if the entire Venezuelan construction sector were to dedicate all its efforts, exclusively, to repair the damage to the infrastructure, the reconstruction process would take almost three full years.

## **Emergency response activities**

Due to the magnitude of the damage over a considerable part of the Venezuelan territory, the President declared National Emergency on December 15<sup>th</sup>, that is, on the very same day when the precipitations reached their peak.<sup>16</sup> On December 16<sup>th</sup>, the Ministry of Foreign Affairs recognized the need to request assistance from the international community.

The response from the various sectors of the Venezuelan society was immediate and commendable. The Armed Forces had a crucial role in the maritime evacuation of the people that had been left isolated due to the extensive damage to roads and transportation infrastructure. The activities by the national civil society and the private sector were also crucial in the rescue of and assistance to victims. According to CEPAL, the contributions by the civil

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<sup>16</sup> Gaceta Oficial de la República de Venezuela, No. 36 851, Caracas, December 15, 1999



society (US\$ 22 million) were equivalent to the entire international assistance for emergency response.

After the first days, a second phase of the governmental response plan was initiated to provide assistance to the affected communities to start the recovery process. This phase was coordinated by the National Committee for the Emergency lead by the Ministry of Public Health and Social Welfare and concentrated its actions over three areas: infrastructure, social development, and public information and support.

Finally, the third and final phase, the reconstruction process, was coordinated by the Ministry of Science and Technology in the Vargas State, the most severely affected one, and by the Planning Ministry in the rest of the country.

The response of the international community to the emergency was immediate and generous through international organizations, bilateral governmental agreements, and the civil society. Five days after the disaster, the total international financial assistance amounted to more than US\$ 8 million coming from more than 20 countries, international agencies and non-governmental organizations. The main contributions came from the governments of Italy, Norway and Sweden through the United Nations system while the largest direct assistance (more than US\$ 3 million) came from the United States.

The international assistance continued actively flowing in the next weeks. By January 6, 2000, the total received assistance was of more than US\$ 21 million with important contributions by the Office of Humanitarian Assistance of the European Commission (ECHO) to support the activities of European NGOs. Besides the assistance from the United States, significant contributions were made by Spain, Italy, Japan, and Switzerland.

The United Nations Program for Development (UNDP) had a leading role in the emergency, recovery, and rehabilitation processes. Immediately after the emergency, UNDP performed a comprehensive and multidisciplinary damage evaluation that was provided to the Venezuelan Government and coordinated the activities of the multiple actors, both national and international, that participated in the emergency response. The UNDP established the Cooperation Management System (SIGCO) that served as an information and coordination center for the international emergency assistance. Also, UNDP has an active participation in the recovery and rehabilitation processes.

Other United Nations agencies offered important contributions in their specialized fields of action. The Geneva's Office for Coordination of Human Affairs (OCHA) sent a mission to perform the first damage evaluations and coordination efforts. The Pan-American Health Organization (PAHO) worked with the Venezuelan Ministry of Public Health to provide medical care and potable water. UNICEF focused its activities in the children's psychological



attention and welfare. FAO coordinated the provision of food among the affected and displaced people.

### **Recovery/ Reconstruction activities**

As regards reconstruction/rehabilitation, while the international assistance has been generous, its effectiveness has been hampered by the difficult political situation in Venezuela. Several member countries of the European Union, for example, declared themselves prepared to offer concessional loans to Venezuela amounting to an estimated total of over USD 100 million. Multilateral organizations provided an estimated total of USD 1 250 million (Inter-American Development Bank: USD 337 million; World Bank: USD 588 million; Corporación Andina de Fomento: USD 325 million) intended primarily for the water sector, communications and housing. A large proportion of this, however, was made available through the reallocation of loans granted but not yet disbursed. The actual disbursement of these funds depended on the presentation of detailed programs for their use. Six months after the disaster, however, the social and economic situation was still very precarious (especially in the state of Vargas) and certain points were cause for concern.<sup>17</sup>

– The authorities – particularly the highest levels – seemed to have some difficulty fulfilling their role of administering efforts and prioritizing needs. There was, for example, still no real overall reconstruction program which included long-term planning for all the necessary activities and efficiently combined the concepts of land management and natural risk prevention. This situation constituted a sizeable obstacle for the donors, faced with multiple but isolated calls for assistance which were difficult to evaluate outside a global context and led to duplication of efforts.

– Substantial financial resources available from national and international sources for reconstruction took some time to reach their destination because of bureaucratic difficulties linked to political upheavals affecting the country. There is a justified fear that the amounts reaching their destination were far lower than expected.

– The issue of the division of responsibilities and decision-making between central and decentralized powers could not be clearly settled and was sometimes a source of conflict. The serious political upheavals which the country has experienced over the past few years helped to complicate this situation.

Domestically, the perception is that the international assistance, while effective and generous during the emergency response period, did not have a significant

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<sup>17</sup> Commission of the European Communities, Working Document, Venezuela-Programme to Support Regions Affected by the Floods of December 1999, Sept. 2000



participation in the rehabilitation and reconstruction processes.<sup>18</sup> Due mainly to the difficult international relations of the current Venezuelan administration, local experts indicate that the implementation of the reconstruction and rehabilitation processes has been carried out by the government. However, and due to the same political difficulties, the government's work has had many limitations and the rehabilitation and reconstruction processes have mostly depended on the actions implemented by the affected people themselves. This has been especially true for the sectors of medium and high income while the poor sectors have had to rely more on the government initiatives. The many studies and reports prepared immediately after the disaster by international missions from the USA, Italy, France, Japan, among others, did not necessarily evolved into proper reconstruction and rehabilitation programs.

According to local experts, the participation of international assistance through studies and several uncoordinated activities has not been enough to correct the traditional practice of reproducing the risk. Most of the reconstruction has taken place on the same locations that were occupied before the disaster or on areas where scientific research indicates that similar natural phenomena have occurred in the past. Several of the people relocation programs have failed due to lack of proper incentives for the relocated people to remain in their new locations. Faced with new difficulties and few opportunities, the relocated people have finally decided to return to their place of origin, re-occupying hazardous areas.

While the international assistance could have had some role in the implementation of some preventive measures such as the construction of sediment-retention dams, there has not been a coordinated, comprehensive program to reduce risk and avoid similar disasters in the future. Many of the sediment-retention dams and channels that were constructed after the 1999 disaster have not a proper maintenance plan or system. Almost five years after the disaster, most of those preventive constructions are filled with sediments and significantly reduced in their capacity to reduce the disaster risk.

There are not any serious studies to evaluate the actual impact of foreign assistance (and local actions, for that matter) on the risk reduction achieved through the reconstruction and rehabilitation processes. Similarly, there are no evaluations of the effectiveness of the foreign assistance during the whole process of disaster recovery. The implementation of several externally funded reconstruction projects have brought some new techniques and methodologies to Venezuela although there has not been an evaluation of the significance of the technology transfer. Finally, there is not any systematic way to evaluate whether, five years after the disaster, there is any significant advance in the reduction of the of the affected areas' risk level.

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<sup>18</sup> Personal communication with experts of FUNVISIS and the Central University of Venezuela



## **EL SALVADOR EARTHQUAKES** **(13 JANUARY AND 13 FEBRUARY, 2001)**

### **Description**

In the beginning of 2001, El Salvador, the Central American country, was hit by two earthquakes. On January 13, 2001, an earthquake measuring 7.6 on the Richter scale with an epicenter just off the coast of El Salvador devastated the country. Exactly one month later, on February 13, as the people of El Salvador were still digging out of the destruction, a second earthquake measuring 6.6 struck the nation. More than 3,000 aftershocks took place during this time and afterwards including earthquakes on February 17 and February 28 that registered 5.1 and 5.6 on the Richter scale.

The damage caused to this country with just over 6 million inhabitants was enormous. Official government figures supplemented by other sources declared the following: 1,259 people killed, 8,964 injured, 149,563 houses destroyed, 185,398 houses damaged, 2,647 public schools, 24 hospitals, 28 health clinics, 2,300 kilometers of roads, and 75% of potable water systems damaged or destroyed. Overall, 1.5 million people, 25% of the population of El Salvador, suffered deep losses from the earthquakes. Damaged infrastructure left unusable by the earthquakes include 40% of hospital capacity and 30% of the nation's schools. Total economic loss is estimated at \$1.255 billion, equivalent to one-half of the annual national government budget.<sup>19</sup>

The atypical succession of earthquakes that took place in El Salvador was due to ruptures in the two plates that define the regional seismicity, the Cocos Plate and the Caribbean Plate. The largest earthquake (of January 13<sup>th</sup>) originated in the Cocos Plate whereas the second one had its origin in the Caribbean Plate. The second event was due to the movement of local faults, probably due to the subduction stresses generated by the Caribbean Plate over the Cocos Plate.

While the first earthquake affected the entire country, the one on February 13<sup>th</sup> affected a less extended area. The most important damage was observed in the Departments of La Paz, San Vicente, San Salvador, and Cuscatlán, although damage was observed (or aggravated from the one caused by the first earthquake) in neighboring Departments, too. Many buildings damaged by the first earthquake collapsed completely during the second event. Especially affected by the second earthquake was the Department of Cuscatlán, where only slight to moderate damage was observed during the January earthquake.

The second earthquake caused landslides in extensive areas along the slopes of San Vicente Volcano and part of the Balsamo Range, especially around

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<sup>19</sup> Government of El Salvador (GOES), 2001, Recovery plan from the damage caused by the earthquakes of Jan 13<sup>th</sup> & Feb 13<sup>th</sup>, 2001, Government of El Salvador, Consultative Group Meeting, Coordinated by the Inter-American Development Bank, Madrid, Spain, March 7<sup>th</sup>, ReliefWeb, 7 March 2001



Ilopango Lake and along the Jiboa River. This caused loss of agriculture land-especially dedicated to coffee production-as well as damage to roads and dwellings. Thousands of houses that had been affected by the January event collapsed and many more were destroyed in the Departments of La Paz, San Vicente, and Cuscatlán.

Damage to lifeline systems was considerable. Power supply was interrupted in the most affected areas while a water conduction line for San Salvador was broken and an entire system of wells and water purification for several communities was seriously damaged. Additionally, cultural and historical monuments were seriously affected and impact on the small- and medium-size economic activities was particularly severe. The health care and educational infrastructure suffered considerable damage as well.

Over 2,000 aftershocks and 500 landslides were reported in the week following the initial quake, causing additional damage and death. The biggest landslide was in Las Colinas, a neighborhood in Santa Tecla, in the department of La Libertad, where at least 300 homes were buried. The majority of deaths were reported here, but the greatest infrastructural damage occurred in the department of Usulután.

The January earthquake destroyed or left uninhabitable over 192,000 homes, displacing over one million people, including 340,000 people in the department of Usulután. CISPES El Salvador representatives report that San Agustín and Berlín in the department of Usulután, as well as Armenia in Sonsonate were leveled, or "wiped off the map." Makeshift refugee camps and tent cities were set up around the country.

Deforestation worsened the effects of the earthquakes. Environmental activists and local authorities in a town where a mountainside buried an entire neighborhood said deforestation and greed contributed to the disaster.

Long before the hill came crashing down on top of the Las Colinas neighborhood outside San Salvador, environmentalists had asked Congress and municipal officials had asked the Supreme Court to block the construction of mansions on the hillside, saying the trees there helped prevent landslides. Congress didn't respond, the Supreme Court denied the petition in 2000, and construction continued. Business boomed and several estates, complete with swimming pools and gate houses, were built above the middle-class neighborhood.<sup>20</sup>

Santa Tecla Mayor Oscar Ortiz stated that construction contributed to the landslide, and accused the constructors of putting the bottom line above human life. Hundreds of people were buried when the mountain gave way in the

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20 Alemán, Marcos, Associated Press Writer, Deforestation Worsened Quake, CISPES, "El Salvador Watch" No. 91, January-February 2001



magnitude-7.6 earthquake, turning the neighborhood into a lake of dirt. "This mountain range showed us just how sensitive it is," Ortiz said.<sup>21</sup>

### **Impact on the Economy**

The 2001 earthquakes affected a total of 1,412,938 people, which is equivalent to 22% of the country's population. 967 people died or disappeared, 8,122 were injured, and 87,500 had to be taken to temporary shelters.

The housing sector was also severely affected. A total of 334,866 dwellings were damaged in some way, with 149,528 of them completely destroyed. The damaged houses represented about 24% of the total housing stock of El Salvador. The damage to residences aggravated the housing deficit existing even before the earthquakes. The pre-disaster deficit was of 555,600 housing units.<sup>22</sup> The damage to residences was especially severe in the Departments of La Paz, San Vicente, and Usulután, moderate in Sonsonate, La Libertad, and Cuscatlán, and minor in Ahuachapán and San Miguel.

The health sector suffered from the impact of the 2001 earthquakes. Twenty-one hospitals were destroyed or damaged (86% of the nation's total) and 131 health centers were affected (42% of the total). In spite of this level of damage, the health sector was able to respond immediately to the emergency implementing several preventive activities that avoided the occurrence of epidemics or new diseases.

The education and culture sector suffered from important damage to the infrastructure, facilities, and historic capital. In total, 397 school buildings were affected (7% of the nation's total), 7 sport centers were destroyed, and more than 120 churches were damaged or destroyed.

Similarly, the productive sectors of Agriculture, Fishery, Industry, Commerce, and Services suffered considerable damage that affected the entire Salvadoran economy. The damage to the infrastructure affected the power supply system at the urban, inter-urban, and rural levels. The water supply system was also badly damaged and water had to be distributed in tank trucks and other means. Damage to the Pan-American Highway interrupted the national and international commerce and caused an increase in costs due to the use of alternate, longer transportation routes.

The economic losses caused by the 2001 earthquakes amounted to US\$ 1,604 million, two thirds of which correspond to damage to private property. Considering the main economic sectors, the distribution of the losses is as

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<sup>21</sup> Idem

<sup>22</sup> Jovel, Roberto, Economic, Social, and Environmental Impacts of the El Salvador Earthquakes, Lessons from the 2001 El Salvador Earthquakes, EIRD-PAHO Publication, July, 2001



follows: Social Sectors 39%, Infrastructure 29%, Productive Sectors 21%, Environmental Impact 6%, and Others 5%.

The impact on the nation's economy was very significant. The total losses were equivalent to 12% of the GDP and to 40% of the country's total exports. The impact on the employment levels was also important. A total of 46,156 jobs were lost distributed in the following way: 32,540 in the small and medium-size businesses, 8,900 in the coffee industry, and 4,716 in other agricultural activities. This loss of jobs increased the social problems in El Salvador and aggravated the poverty levels already found before the earthquakes.

The earthquakes not only brought economic activity to a standstill in earthquake areas (one in ten micro and small businesses nationally suffered severe damage) but also exposed weaknesses in the country's national disaster management response capability, the lack of disaster mitigation and land use planning at municipal levels, and the need for improvements within the Government of El Salvador (GOES) in the areas of seismic and volcanic monitoring

### **Emergency response activities**

A state of national emergency was decreed and an appeal for international assistance announced a few hours after the earthquake. The National Emergency Committee (COEN in Spanish) immediately activated the Emergency Operations Center. COEN concentrated its efforts on the most affected regions, focusing on search and rescue operations, salvage, evacuation, establishment of provisional shelters, provision of medical attention, security measures and rehabilitation of services. The overriding goal was to minimize the loss of lives and quickly respond to emergency needs.

The response by the Salvadoran authorities and organizations had serious limitations. Even though El Salvador is on a major fault line and has a history of earthquakes (a 7.5 quake in 1986 left 1,000 dead), the country had no national emergency plan. There were no search-and-rescue teams, recovery dogs, or special equipment. In these earthquakes, the official rescue operation began only when international teams arrived from Mexico, Colombia, Venezuela, and Spain.<sup>23</sup>

In response to this disaster, President Flores established the "National Solidarity Committee" (CNS) to coordinate relief and reconstruction efforts and put Mr. Roberto Murray Meza, a prominent businessman, in charge. The CNS was composed almost entirely of ARENA (the official political party) members and private business people who are members of the National Association of Private Enterprise (ANEP).

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<sup>23</sup> CISPES, "El Salvador Watch" No. 91, January-February 2001



Unfortunately, politics and old resentments played a role in the response activities. Many of the hardest hit areas were municipalities governed by the FMLN (the opposition party) and received little aid because of their political affiliation. The Municipality of Santa Tecla, one of the most affected by the earthquakes and the place where the largest number of lives was lost, was an example. Santa Tecla municipal spokesperson, David Hernández said, "We don't know what [the central government] is doing, whether it's out of negligence or incapacity, but the need here is immense and they have sent neither food nor medicines." During the first days after the disaster, the only aid reaching the 12,000 people in El Cafetalón refugee camp came from direct donations from non-governmental organizations (NGO's). The first official aid shipment to Santiago Nonualco was comprised of two mattresses, one pound of spaghetti, three pounds of salt, and one high-heeled, silver shoe<sup>24</sup>

The national response included the deployment of 600 troops for search and rescue activities, the provision of 54 new temporary shelters in which some 12,000 people were accommodated, and the establishment of a reception center for humanitarian flights at the Comalapa's Air Base. The reception center was under the responsibility of the National Emergency Committee (COEN) and the Ministry of Foreign Affairs.

The international response included the UNDAC team making continued assessment of damage and needs, and an FAO assessment of damage to the agricultural sector. The Pan-American Health Organization (PAHO) launched an additional appeal seeking USD 5.6 million for medical equipment, epidemiological surveillance and rehabilitation, and provided medical equipment and supplies to hospitals in the affected areas. Engineering and sanitation teams were also deployed to assess quality of water in the worst affected rural areas. UNICEF worked with the National Administration for Water Distribution (ANDA), the armed forces and Swedish Cooperation, on safe drinking water production, using water equipment systems provided by Norway.

The World Food Program (WFP), together with the Salvadorian Red Cross, distributed 1,000 family food rations for two weeks in the three most affected communities, and WFP requested US\$ 3 million to finance this rapid response. UNICEF donated medical supplies and distributed kitchen utensils, shovels and pick axes. ECHO announced a further contribution of between Euro 5 and 8 million for emergency relief operations, and other contributions included airlifts and assistance in kind from Mexico, Spain, Venezuela and the Dominican Republic.

The International Federation of the Red Cross (IFRC) launched an increased appeal totaling CHF 7,645,698 reflecting a doubling of the beneficiaries to 11,600 vulnerable families. The appeal included the support and resettlement of the displaced and homeless, the prevention of the outbreak of diseases, health,

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24 CISPES, "El Salvador Watch" No. 91, January-February 2001



disaster preparedness and branch development. Other aid agencies which worked in the region include Save the Children Fund, Oxfam, Action Aid, and CARE International, SCIAF, and Plan International.<sup>25</sup>

The United States Government responded with over \$20 million in emergency relief assistance, including \$12.8 million from the USAID Office of Foreign Disaster Assistance (OFDA).<sup>26</sup>

In partnership with six U.S. NGOs, USAID provided nearly \$7.5 million for the construction of emergency shelters for 23,000 poor families, 33 temporary schools, and 12 temporary health facilities. The emergency shelters were in place prior to the onset of the rainy season that began in May. Nearly \$5 million in emergency supplies and commodities were provided, including rice, beans, water tanks, water jugs, mattresses and blankets. In all, 1,750 metric tons of food were delivered.

The U.S. Military donated, transported and installed a mobile hospital at the site of the badly damaged San Rafael Hospital in Santa Tecla at a cost of more than \$7 million, and conducted medical readiness exercises. In addition, the US Military provided transportation for personnel and supplies, including helicopter support, for a total cost of \$850,000.<sup>27</sup>

The United States Geological Survey provided technical assistance to monitor seismic and volcanic activity and evaluate risk zones.

### **Recovery/ Reconstruction activities**

By mid-2001, the reconstruction process had started although with mixed results. The Salvadoran government finished its crash program to build temporary housing, and claimed that 218,000 temporary homes, mostly of roofing tin, had been built by the Salvadoran army, the FISDL (the governmental Fund for Social Investment), and various NGO's. However, the construction of more permanent housing remained slow.<sup>28</sup>

The Ministry of Education (MINED) had raised its estimate of damages to the schools to \$US 100 million. However, close inspections of schools have revealed many problems that were not caused by the earthquakes. MINED reimbursed repair funds to some of the 1500 schools that were moderately damaged, and that paid for repairs out of their operating funds. Also, MINED started a bid process with private construction companies to fix some of the

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25 Department for International Development, Second El Salvador Earthquake: Situation Update 23 Feb 2001, ReliefWeb

26 USAID-El Salvador, Emergency Operations: US Government Response, USAID Website

27 USAID-El Salvador, Emergency Operations: US Government Response, USAID Website

28 ECONOMIST. "Rebuilding El Salvador: Homeless and Increasingly Hopeless (19 Jul 2001). URL: [www.economist.com](http://www.economist.com)



more serious damages and, on June 1, 2001, announced that 40 schools would be demolished.

The Vice-Ministry of Housing had identified 106,000 families who lost their homes to the earthquakes and did not have the capacity to pay for new permanent homes. However, the Vice-Ministry only had a loan to pay for 26,000 homes, of which, about 17,000 would be built on the same site where the old home was, and the remainder would be built in the "New Organized Settlements." The money for these homes came from a \$US 70 million loan from the Inter-American Development Bank.

USAID/El Salvador reconstruction assistance focused on the revitalization of social infrastructure for the rural poor, including: housing, schools, child care centers, public health infrastructure, and potable water and sanitation systems. The USAID/El Salvador reconstruction program included the following activities:

- Construction of 26,000 permanent houses, providing shelter to 130,000 people.
- Reconstruction and re-equipping of up to 49 schools, providing classrooms for approximately 15,500 students.
- Reconstruction and repair of 30 childcare centers, directly benefiting 1,800 families.
- Reconstruction of 5 Ministry of Health clinics; construction of a health facility by a USNGO expected to treat up to 78,000 patients annually, and repair of the national prosthetics center, FUNTER.
- Operation of the San Rafael Mobile Unit Self-Contained Transportable (MUST) Hospital, expected to treat 6,462 patients annually and perform 1,460 surgeries per year for 2 years.
- Provision of equipment and supplies to 1,660 community health workers who suffered losses from the earthquakes.
- Friends of Americas mobile clinic, operating in three Departments (La Paz, Cuscatlán and San Vicente), and providing basic health care services to 11,000 patients annually.
- Provision of potable water to 120,000 beneficiaries through rehabilitated or reconstructed water systems, and the construction/rehabilitation of 27,000 latrines benefiting a total of 162,000 beneficiaries.

On March 2, U.S. President George Bush met with El Salvador's President Flores and announced the USG pledge of \$52 million in post-earthquake reconstruction assistance to El Salvador for FY 2001. This funding was channeled through USAID/San Salvador.

USAID's Office of Food for Peace (USAID/FFP) contributed 1,750 MT of emergency food commodities valued at \$917,700 to WFP to replenish the stocks it distributed to the victims of the January 13 and February 13 earthquakes. USAID's Office of Transition Initiatives (USAID/OTI) provided



USAID/San Salvador with \$2 million to be used by the NGO CARE to support housing reconstruction in the hardest hit areas of the country.<sup>29</sup>

The Government of Canada provided \$805,000 to PAHO/WHO, IFRC, and NGOs for emergency assistance and approximately \$2.7 million in relief and reconstruction assistance to the Government of El Salvador. Approximately \$645,000 of the funding was to be used to support rehabilitation efforts such as the reconstruction of houses, repairs to schools and potable water systems, and healthcare services in the earthquake-affected areas.<sup>30</sup>

The Government of Spain sent relief supplies, four doctors, and five search and rescue experts to El Salvador and offered to loan \$36 million for relief efforts. The Government of Japan gave approximately \$2.1 million to the Government of El Salvador for the procurement of materials to construct 10,000 units of prefabricated housing, and about \$345,000 to the Japanese Red Cross for emergency shelter.<sup>31</sup>

The European Commission Humanitarian Aid Office (ECHO) provided approximately \$7.3 million in response to the February earthquake, bringing its total earthquake contribution to more than \$9.1 million. ECHO channeled the funds through several partner NGOs and other international organizations. Almost half of the funding was used to provide temporary emergency shelters and the remainder for health, water, and sanitation interventions.<sup>32</sup>

In spite of all the generous assistance from the international community, the reconstruction and rehabilitation process has not been as effective as it would have been desired. For example, although over 200,000 temporary shelters were erected shortly after the earthquakes, the construction of more permanent housing has remained slow until now. Of the 335,000 homes that were destroyed or damaged, only 32,000 replacement homes had been provided by the government as of early 2002 and much of that reconstruction was in areas prone to landslides.<sup>33 34</sup>

By the end of April 2002 only an estimated half of all families who lost their housing in the earthquakes were living in proper housing, the other half remained in a "vulnerable condition" in temporary metal or plastic shelters referred to as "microwaves" because of how rapidly they heat in the sun; overall there remained a "significant shortage of housing throughout the country".<sup>35</sup>

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29 USAID, El Salvador Earthquakes: Final Fact Sheet (FY 2001), ReliefWeb

30 Idem

31 Idem

32 Idem

33 Inter Press Service (IPS). Muñoz, Néfer. "El Salvador: The Scars Left by the Earthquakes" (28 January 2002)

34 ECONOMIST. "Rebuilding El Salvador: Homeless and Increasingly Hopeless" 19 July, 2001

35 World Food Program (WFP). "ODM-WFP Emergency Situation Report on Latin America & the Caribbean" (08 May 2002), published by ReliefWeb, URL: [www.reliefweb.int](http://www.reliefweb.int)



To compound the problem, Salvadoran officials estimated that 70 percent of families without adequate housing might have to remain in temporary shelters because they lacked proper title to their destroyed homes, without which international relief agencies would not replace them.

By the beginning of 2002 there had been little reconstruction in the health sector, the seven most damaged hospitals were described by health officials as still in “a critical state,” and work on rebuilding smaller healthcare facilities had only begun. A World Bank loan intended to partially address this problem was announced in December 2001 when health care was still being provided from tents and trailers.<sup>36</sup> Most major highways had been repaired but local roads still needed work as of September 2001.

The economic situation has greatly deteriorated in El Salvador. Economic losses that finally reached almost 15% of the GDP caused that, according to the UN Development Program, 51 percent of the population now lives below the poverty line, a proportion nearly four percentage points higher than in 1999 and considered to be due to the quakes.<sup>37</sup> In 2002, more than 200 Salvadorans were reported to be emigrating every day due to poverty.

Following the earthquakes, a drought left at least 35,000 subsistence farming families destitute, affecting some 318,000 people, mainly in the eastern portion of the country, causing damage of about \$189 million, with the situation exacerbated by food stocks already depleted following the earthquakes.<sup>38 39</sup> In April 2002 up to 200,000 people were still threatened by “food insecurity,” with the next harvest not until August and prospects for subsistence substantially worsened by lack of wage labor due the collapsing coffee industry.<sup>40</sup> (EFE 24 Apr 2002, WFP 12 Feb 2002).

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36 LA PRENSA GRAFICA. Rivas, Ena. “Hospitales Necesitan \$310 Millones” (San Salvador: 13 Jan 2002).

37 Inter Press Service (IPS). Muñoz, Néfer. “Development – El Salvador: A Forgotten Country” (San Jose, Costa Rica: 2 Apr 2002)

38 International Federation of the Red Cross (IFRC). “For Some Farmers in El Salvador Drought Was ‘The Last Straw’” (26 Feb 2002), published by ReliefWeb

39 UN Office for the Coordination of Humanitarian Affairs (OCHA). “Central America – Drought 2002 OCHA Situation Report No. 1” (5 Apr 2002), published by ReliefWeb

40 World Food Program (WFP). “ODM-WFP Emergency Situation Report on Latin America & the Caribbean” (12 Feb 2002), published by ReliefWeb



## **INCREASING EFFECTIVENESS OF INTERNATIONAL COOPERATION IN THE PROCESS OF REDUCING NATURAL DISASTER RISK**

### **1) Shift emphasis of cooperation from emergency response and relief to disaster prevention and risk reduction.**

As in most of the natural catastrophes affecting developing countries, the sample cases presented in this report demonstrate that international cooperation was quick, generous, and effective in responding to the emergency and providing relief. However, the reconstruction and rehabilitation processes have been much less effective and participative. In most cases, after a few months of frantic activity following a disaster, the international presence diminishes significantly, its interest attracted, perhaps, by a new disaster happening somewhere else. International cooperation should be more active and effective in the implementation of long-term risk reduction and disaster mitigation processes that would stop the disasters from happening in the first place. That is the most rational, cost effective way for the international community to deal with natural disasters in the developing world.

### **2) Move from the implementation of projects to the establishment of long-term processes**

Most of the international cooperation is now being implemented through short-term (2-3 years in the best cases) projects. The existing risk, however, is the result of decades or centuries of unplanned growth and risk creation and, therefore, cannot be realistically reduced by short lived efforts. Long-term, self-sustainable risk reduction process should be established that have local support and the participation of the entire community. Long-term goals should be defined and the necessary financial, legal, political, and social conditions should be prepared to ensure an effective reduction of risk.

### **3) Decentralize the procedures**

Currently, most of the cooperation provided by international organizations is canalized through central governments. This generates several problems. First, all the international assistance (millions of dollars in most of the cases) is totally controlled by a small group of government officials with enough authority to avoid domestic control. This results in lack of transparency, arbitrary management of the available funds, and plain waste of resources. Secondly, most of the officials in the central government are not in direct contact with the realities of the affected areas nor they respond directly to the affected people. This causes that the actual needs of the affected areas are not properly or opportunely attended. There should be a process of decentralization in which local authorities, the ones in direct contact with their constituencies have direct contact with and access to international cooperation programs.



#### **4) Make of technology transfer and capacity building the first priority of cooperation**

Reduction of local risk and the creation of safer communities is not the responsibility of international or bilateral organizations but of the local people. Only local people really understand the local realities, the characteristics of the problems, and the effectiveness of the possible solutions (what works and what does not). Transfer of ownership should be the goal of any international cooperation program and the necessary capacity and knowledge should be provided to the local community for them to locally continue the long-term processes that would eventually achieve an effective reduction of the existing risk. Local communities should be freed from their current dependency from international cooperation.

#### **5) Integrate disaster reduction into public policy and development planning**

There is a close linkage between development and disasters. Poverty results in social and physical vulnerability to disasters, which is made evident by the fact that in any given natural disaster the most affected are always the poorest communities. In the same way, disasters generate and perpetuate poverty by causing huge financial losses and destroying infrastructure. There is, therefore, a vicious circle of poverty causing increasing vulnerability to natural disasters and disasters causing increasing poverty. In consequence, any initiative that reduces poverty will reduce the effect of disasters and, similarly, any action that mitigates the impact of disasters will help to reduce poverty and promote development. From this perspective, it is only logical for risk reduction to be an integral part of public policy, urban planning, and development processes.

#### **6) Measure progress and impact**

Currently, there are not any standardized means to measure progress in the risk reduction process or the impact of international cooperation. Most of the cooperation is currently measured just in terms of the total financial amounts of the donations. Millions of dollars are spent and considerable efforts are invested in international cooperation programs but there are no practical ways to measure whether any real progress in reducing the risk has been achieved from all these investments and efforts. There is no way to monitor advances or evaluate the actual impact. It is crucial to start by setting up benchmarks based on comprehensive evaluations of the current situation and then develop tools and mechanisms to periodically monitor progress and evaluate impact.