

# FINAL REPORT



International Federation of Red Cross and Red Crescent Societies  
Fédération internationale des Sociétés de la Croix-Rouge et du Croissant-Rouge  
Federación Internacional de Sociedades de la Cruz Roja y de la Media Luna Roja  
الاتحاد الدولي لجمعيات الصليب الأحمر والهلال الأحمر

## ECUADOR: VOLCANIC ERUPTION

**Appeal No. MDREC002**  
**Glide no. VO-2006-**  
**000089-ECU**  
**20 June 2007**

The Federation's mission is to improve the lives of vulnerable people by mobilizing the power of humanity. It is the world's largest humanitarian organization and its millions of volunteers are active in 185 countries.

### In Brief

Final Report; Period covered: 23 August 2006 to 23 January; Final appeal coverage: 100%.

*Click here to link directly to the attached Interim Financial Report. The Final Financial Report will be attached in due course.*

#### Appeal history:

- Launched on 23 August 2006 for CHF 632,064 (USD 514,753 OR EUR 400,384) for 5 months to assist 5,475 people (1,095 families).
- Disaster Relief Emergency Funds (DREF) allocated: CHF 85,000 (USD 68,079 or EUR 54,092).

This operation is aligned with the International Federation's Global Agenda, which sets out four broad goals to meet the Federation's mission to "improve the lives of vulnerable people by mobilizing the power of humanity".

#### Global Agenda Goals:

- Reduce the numbers of deaths, injuries and impact from disasters.
- Reduce the number of deaths, illnesses and impact from diseases and public health emergencies.
- Increase local community, civil society and Red Cross Red Crescent capacity to address the most urgent situations of vulnerability.
- Reduce intolerance, discrimination and social exclusion and promote respect for diversity and human dignity.

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*For longer-term programmes in this or other countries or regions, please refer to the Federation's Annual Appeal. For support to or for further information concerning Federation programmes or operations in this or other countries, or for national society profiles, please also access the Federation's website at <http://www.ifrc.org>*

*For longer-term programmes, please refer to the Federation's Annual Appeal.*

## **Background and Summary**

The Tungurahua volcano in Ecuador, which lies at 5,023 metres above sea level and 180km southeast of Quito, began a new eruptive cycle in 1999 after lying dormant for eight decades. In 2006, the volcano showed increased activity and erupted in May and July. Another, more intense eruption occurred in August, spewing ash up to 15 kilometres high, leaving a thick blanket of ash and volcanic residue on nearby communities' homes, land and crops. The eruption caused major damage to nearby areas, affecting up to 300,000 people in the four surrounding Provinces of Tungurahua, Chimborazo, Bolívar and Pastaza. This eruption resulted in the evacuation of 19,000 people from their homes. In addition to falling ash and residues, lava flows from the volcano caused the Chambo and Puela rivers to dam and flood nearby areas. The Government of Ecuador declared the area a disaster zone, particularly in the four main provinces severely affected by the volcanic eruption.

The impact of the eruption on the communities living near the Tungurahua volcano was severe. Health issues were registered directly related to the eruption such as respiratory problems, conjunctivitis, dermatitis and acute diarrhoea. Falling ash after the eruption impeded access to clean drinking water. The psychological impact on communities was also serious, as the eruption and ongoing volcanic activity left communities feeling insecure. In addition, agricultural activities were severely affected; according to the Ministry of Agriculture, over 23,000 hectares of crops and 40,000 heads of cattle - on which small farmers depend as a means of living - were destroyed or lost. It was estimated that the land affected by the volcanic eruption could take up to a year to recover. Roads and electricity were cut off by mud slides from the overflowing rivers and by falling ash, making access to the areas difficult.



The Tungurahua Volcano erupted on 16<sup>th</sup> August 2006, damaging nearby roads and affecting communities.

After the eruption in July 2006, the Ecuadorian Red Cross (ERC) responded to the situation by activating the emergency Plan of Action at the branch and national level and mobilized more than 240 volunteers to the area. In July, a total of CHF 85,000 (USD 68,079 or EUR 54,092) was allocated from the Federation's Disaster Relief Emergency Fund (DREF) to support the ERC Plan of Action, initially set out to assist 537 affected families (2,685 people). After the second, larger eruption, the ERC expanded the Plan of Action to respond to the increased needs of the communities living in the areas surrounding the volcano.

The volcanic eruption in August led the ERC to expand their Plan of Action and launch with the support of the Federation an International Emergency Appeal for CHF 632,064 (USD 514,753 OR EUR 400,384) for a period of 5 months to assist 1,095 families (5,475 people) in the affected Provinces of Chimborazo and Tungurahua. Damage and Needs Assessments (DANA) carried out by the ERC allowed for the identification of families that had been worst affected by the volcanic eruption and those whose income generating activities had been most affected, to be assisted by the Plan of Action. The following actions were included in this Plan: provision of food packages, hygiene kits, cleaning kits and education kits; medical care and safe drinking water, family linking, provision of domestic protection kits and strengthening the ERC capacity in response and preparedness.

**Ecuador: Volcanic Eruption; Appeal no. MDREC002; Final Report**

The ERC has previous experience working with communities in the area surrounding the Tungurahua volcano, dating from 1999, on a number of initiatives in disaster preparedness, early warning systems, reactivation of the agricultural sector, primary health care, ERC institutional strengthening and humanitarian assistance.

Since this eruption, the ERC has been supporting the design of resettlement strategies for 50 families in Nabuso Pasuca area, close to Penipe, in coordination with local governments and other local and national institutions. These families will each benefit from a 56m<sup>2</sup> house with all basic needs met.

In support of early recovery actions, the ERC, in close collaboration with the United Nations Food and Agriculture Organisation (FAO) and the Ecuadorian Ministry of Agriculture and Livestock, decided to set up a project for the creation of garden allotments for 388 rural families from Chimborazo and Tungurahua, affected by the volcanic eruption. 400 m<sup>2</sup> (20 x 20 metres) of land was provided for the cultivation of vegetables, cereals and fruit trees. The project foresees the installation of an irrigation system to support the gardening activities.

Since the eruption in August the volcano has shown further signs of activity, as confirmed by the Ecuadorian Geophysics Institute. The latest activity was reported in March 2007, where seismic activity, explosions and emissions of ash were registered. Communities continue to live near the active volcano, unsure of their future.

**Coordination**

Throughout the emergency and the implementation of the operation, the ERC ensured a close and effective cooperation with national authorities, and also national and international organisations working to support communities affected. The Federation supported the National Society throughout all coordination activities that took place. Both the ERC and Federation representatives have coordinated throughout the operation with the United Nations system, European Commission's Humanitarian Aid Office (ECHO) and the Ecuadorian Civil Defence, avoiding duplicity of actions and ensuring a proper response for the most affected and vulnerable families.

The National Society periodically attended United Nations Emergency Technical Team (UNETE) meetings, and coordinated with Civil Defence, government authorities and other organisations active in the affected area.

With support from the Federation, the ERC reached an operational agreement with the World Food Programme (WFP) to support the distribution of food items to an additional 1,000 families in the Province of Chimborazo. The ERC also carried out a survey of the affected population with the WFP. In January 2007, the ERC and the WFP signed a cooperation agreement to work in coordination on intervention, prevention, immediate response and mitigation of the effects of natural or manmade disasters in Ecuador, through the mobilization of food resources and capacity building in food security.

As the ERC have also carried out agricultural rehabilitation activities- although not as part of this Appeal's activities- ongoing dialogue has been held with FAO and the Ecuadorian Ministry of Agriculture and Livestock to ensure a coordinated response to the needs of affected communities in this area. A project was developed with these actors to develop garden allotments for rural communities affected by the eruption, to ensure continued food security.

The ERC has worked closely with United Nations Children's Fund (UNICEF) and the National Institute for Family and Childhood (Instituto Nacional para la Niñez y la Familia - INNFA) on all activities involving children, such as the provision of education kits and basic hygiene kits.

Coordination with the Pan American Health Organisation (PAHO) and the Ministry of Health took place to ensure appropriate medical attention to communities affected by the volcanic eruption. All water and sanitation activities were coordinated with organisations such as Oxfam, working to provide safe drinking water to affected communities.

The Federation and ERC were in close and regular contact with various Partner National Societies (PNS) and funding agencies – including the Spanish Red Cross, ECHO and USAID, resulting in a fully supported plan of action.

Contributions were made directly to the Appeal as well as through bilateral support from PNS, overseas Governments, international organisations, private companies and individuals. Funding received from these various sources covered 100 percent of the appeal. The Federation supported the ERC in cooperation processes through dialogue and coordination with donors.

## Analysis of the operation - objectives, achievements, impact

### Emergency relief (food and basic non-food items)

#### **Objective 1: 1,095 families (5,475 beneficiaries) will benefit from the provision of food packages in the Provinces of Tungurahua and Chimborazo.**

A total of three distributions of food packages were carried out by the ERC over a period of two months in the Provinces of Chimborazo and Tungurahua. Originally two distributions were planned; the additional distribution was possible thanks to donations made by the Ecuadorian public to the ERC.

The first distribution was carried out in Chimborazo and Tungurahua, on 30 September and 1 October to families identified within the Appeal, with support from Ecuadorian public donations.

The following two distributions were covered through the Appeal. The second distribution took place on 28 and 29 October in Chimborazo and Tungurahua, with support from the Italian Government to the Appeal. The third and final distribution took place on 1 and 2 December in both Provinces.



Left: Families being registered to receive food packages. Centre: Families with food packages. Right: ERC volunteer with a child who has received food items.

The ERC originally planned to support 1,095 families with food parcels, yet thanks to additional support it was finally possible to assist a total of 3,742 families in all three distributions. One 22kg food package was delivered to each family in the Provinces of Chimborazo and Tungurahua. Each kit distributed included: rice (4 kg), beans (2 kg), lentils (2 kg), unrefined cane sugar (2 kg), cooking oil (2 kg), sugar (2 kg), salt (0.5 kg), pasta (1 kg), flour (2 kg), oats (2 kg), quinoa (1 kg), tuna (1.5 kg). The food packages met Sphere standards.

Food packages were distributed with a one month intervals to ensure that families had ongoing food security for the period following the volcanic eruption. The first distribution of food packages was delayed as the volcano erupted once again on 21 September.

Thanks to the support of private sector companies, cookies, mayonnaise, tomato sauce and juices were also distributed to support the psychosocial intervention, mainly with children.

#### **Objective 2: 1,095 families (5,475 beneficiaries) will benefit from the provision of hygiene kits in the Provinces of Tungurahua and Chimborazo.**

## Ecuador: Volcanic Eruption; Appeal no. MDREC002; Final Report

With support from the initial funds from the Federation's DREF fund, the ERC distributed 500 family hygiene kits at the onset of the emergency, and with the support of private contributions, the ERC was able to distribute an additional 37 kits. Within the Plan of Action of the Appeal, hygiene kits were provided for a further 1,095 families, mainly thanks to the support of USAID. Finally, a total number of 2,270 families received hygiene kits thanks to some other private donations.

Each hygiene kit distributed included the following items: 5 tubes of toothpaste (0.75g each tube), 5 toothbrushes, laundry soap (1kg), soap (1.25kg), 4 toilet rolls, razor and sanitary towels.

During the distributions, ERC volunteers carried out awareness raising talks on the importance of hygiene. These informal talks contributed to greater awareness and families are now considering ways of improving hygiene, being particularly important in communities facing periodic volcanic activities.

### **Objective 3: 1,095 families (5,475 beneficiaries) will be provided with cleaning kits in the Provinces of Tungurahua and Chimborazo.**

One distribution of cleaning kits was planned and took place on 19 and 20 October to 1,095 families in Chimborazo and Tungurahua. Each family received one kit, containing 10 rubbish bags, a bucket, a broom, a dustpan, a cloth, disinfectant (1 lt) and detergent (1 kg). The distribution of cleaning kits was supported by the Spanish Red Cross.

The cleaning kits proved to be extremely useful for families in the clean up process as the eruption had left a blanket of ash covering entire communities, homes and belongings. While the distribution took place in Chimborazo on 20 October, ash began to fall again. The provision of cleaning materials ensured that families were well prepared in the face of ongoing volcanic activity.

### **Objective 4: 1,400 children aged between 5 and 17 years will be provided with education kits and basic hygiene kits in the Provinces of Tungurahua and Chimborazo.**

The eruption in August interrupted schooling of thousands of children living in communities near the volcano. In order to start educational activities of children from affected families as soon as possible, 1,400 children received education and basic hygiene kits (one for each child) at distributions carried out during October. The children attend 29 schools in both Provinces and belong to families being assisted by the ERC Plan of Action.



Left: A child with one of the masks provided in the basic hygiene kits

The first distribution of education kits and basic hygiene kits took place on 11 October at schools in Tungurahua. The Ambassador for the People's Republic of China was present at the distribution, as the Chinese Government supported the activity along with the organisation, Fundación Mi País. The second distribution of education and basic hygiene kits took place on two days, on 24 October in Tungurahua and on 27 October in the province of Chimborazo. The distributions were carried out by ERC volunteers and Federation staff, who also played sporting activities such as ball games with the children.

Each education kit included: 3 small schoolbooks, 3 large schoolbooks, 3 pens, 3 pencils, 1 sharpener, 1 set of crayons, 1 ruler, 1 eraser, geometric game, cloth bag with Red Cross, shiny paper, child-safe scissors, and a notebook with plain paper.

The basic hygiene kits included: 2 tubes of toothpaste (0.75g each tube), 2 toothbrushes, 3 soaps, 3 toilet rolls, 1 comb, 1 hand towel, 1 plastic cup, 2 masks (children's size), 1 pair of protective glasses (children's size) and 1 bag.

This activity was delayed as the start of the school year was postponed due to the bad state of schools in the communities affected by the eruption, and the ongoing activity of the Tungurahua volcano caused constant explosions of ash, which impeded implementation.

The provision of education kits and basic hygiene kits was carried out entirely by the ERC, who coordinated with different organisations and institutions. The Ministry of Education and Culture carried out repairs on the infrastructure of schools, particularly walls and ceilings. The distribution of some of the education kits was coordinated with UNICEF and also the Provincial Educational institutions for the actual distributions.

In addition, the ERC also distributed school kits containing the following: whiteboard, boxes of coloured markers and erasers. One kit was distributed to each school. This was possible as a saving was made in the purchase of education and basic hygiene kits.

## **Health**

**Objective 1: 1,095 families (5,475 beneficiaries) will have access to and will be provided with medical care to improve health conditions in the Provinces of Tungurahua and Chimborazo.**

Within the Plan of Action, the ERC decided that the best way to respond to health problems - such as respiratory, gastrointestinal, and dermatological and eye problems caused by falling ash - was through visits to the affected communities, to ensure the provision of proper medical treatment to those who needed it.

The ERC set up a medical brigade, with doctors carrying medicine, which visited communities affected by the volcanic eruption to treat people suffering from health problems. Thanks to donations of transport, medicine and doctors working voluntarily, direct health care was provided to a total number of 2,955 persons in the Provinces of Chimborazo and Tungurahua, over a period of 3 months.

The first visit made by the medical brigade took place on 21 October in the Province of Chimborazo. The visit was organised in coordination with the Provincial Health authorities through the Operational Emergency Committee (COE). During this visit, the ERC decided that the medical brigade should leave a copy of the medical history of each person attended, as a way of starting up medical histories of community members.

The second visit took place on 8 December in Tungurahua and the third took place on 15 December. The ERC let communities know well in advance that the medical brigade would visit to ensure people could attend. Each visit by the medical brigade lasted three days to ensure the treatment to those with health problems. The provision of medicine in addition to medical attention (thanks to donations by the Order of Malta and ERC and Federation donations) meant that people did not have to pay for this.

A number of doctors volunteered to support the ERC medical brigade, from the Red Cross, Catholic University, Eugenio Espejo Hospital, School of Odontology of the Central University, Vozandes Hospital in Quito and the Military Hospital.



Left: Medical attention being provided to a member of affected communities at one of the visits.

## **Ecuador: Volcanic Eruption; Appeal no. MDREC002; Final Report**

The medical brigades that visited communities allowed for the conceptualization of the most common pathologies and also the high risks during a volcanic eruption, across a number of communities. Prevention measures were also taken with communities during medical evaluations and also through capacity building with those at risk. The participation of volunteers in community assistance was also promoted.

Previous to the visits of the medical brigade, the ERC organised volunteers to visit communities affected by the eruption to give awareness raising talks seeking to ensure that existent health care focused on health problems caused by the eruption and also prioritise women, children and the elderly. During these talks, basic first aid skills were discussed using the Principles of Action in Emergencies in the light of the volcanic eruption and particular attention was placed on health prevention measures regarding falling ash. Talks on first aid during volcanic eruptions were also held for paramedics, doctors, volunteers, drivers and the community. During the medical brigade visits, a total of 1,855 people participated (94 percent of them from the communities).

The ERC coordinated all health activities with the Provincial Health authorities and the Ministry of Health to avoid the duplication of efforts and cover the needs of communities which had not received medical attention from other actors.

### **Objective 2: 1,095 families (5,475 beneficiaries) will have access to and will be provided with safe drinking water in the Provinces of Tungurahua and Chimborazo.**

With support of Federation technical personnel, at the start of the operation, a thorough analysis was carried out by the ERC on the needs and water systems used by the affected families within the target communities considered in the Plan of Action. The results of this analysis revealed that although communities in Chimborazo and Tungurahua had well organised systems of water provision, none use chlorine to disinfect water for human consumption. The chlorination of drinking water in communities affected by the volcanic eruption (and living with ongoing volcanic activity) will ensure the provision of safe drinking water on a short, medium and long term basis.

Five chlorinating machines were delivered to communities in affected areas of the Provinces of Chimborazo and Tungurahua as stated within the ERC Plan of Action. Each machine has the capacity to produce 30 litres of chlorine per day, and will need to be run between two and three times a week on average to meet communities' needs, in addition the machine consumes very little electricity. The ERC ensured that community operators of the chlorinating machines had technical support in the use of the machines and access to monitoring equipment.

The chlorinating machines have been installed in communities with the capacity to manage the machines and strategically located near schools and communities where affected families live. Families were also provided with containers for the transport of chlorine and water storage. In addition, capacity building talks has taken place with families on safe drinking water. While the chlorinating machines and containers were delivered to communities, the ERC explained the importance of the daily use of chlorine to communities.

Previous to the implementation of this activity, meetings were held with communities to discuss their needs. Communities reacted positively to the use of chlorine to ensure safe drinking water at discussion groups that were organised.

A water quality analysis kit was also made available to the ERC, for ongoing monitoring of water quality, and the respective capacity building for ERC personnel in the use of the kit by the Water and Sanitation Officer from PADRU. This has enabled the National Society to carry out evaluations themselves.

To complement the provision of safe drinking water to communities in Chimborazo and Tungurahua, two capacity building workshops were held for ERC volunteers on hygiene, community health and risk management which was replicated within communities.

Support to activities to provide safe drinking water for communities has been possible thanks to the Office of U.S. Foreign Disaster Assistance (OFDA) and funds contributed to the Appeal. OFDA supported capacity building activities for volunteers and the community in the use of chlorine and community health.

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All water and sanitation activities were coordinated with other organisations carrying out similar activities.

The installation of chlorination machines have not only provided an immediate solution to the provision of safe drinking water, but a medium- to long-term solution to improve the quality of the lives of the families affected by the volcanic eruption.

The ERC has ensured that capacity building has taken place with communities on family hygiene and safe water, to ensure they make good use of the kits provided and understand the benefits.

### **Objective 3: 1,095 families (5,475 beneficiaries) will have access to and will be provided with psychosocial support in the Provinces of Tungurahua and Chimborazo.**

The eruption of the Tungurahua volcano caused a significant psychological impact on the communities living nearby. Ongoing volcanic activity has also contributed to a constant state of insecurity for people living near the volcano. The ERC carried out psychosocial support activities as planned, focusing support on those people who had been most psychologically affected by the volcanic eruption such as women, children and adolescents.

After initial delays due to continued volcanic activity, psychosocial support capacity building workshops for ERC volunteers began in November. Four workshops were planned; however, a total of three workshops took place on psychosocial support during emergencies in the Provinces of Tungurahua, Chimborazo, Pastaza and Bolívar for a total of 35 volunteers who work in the areas of youth and emergency relief with the National Society. Capacity building focused on issues such as appropriate psychosocial interventions before, during and after an emergency, mental health damage and needs analysis and psychological first aid. Participants were also invited to take part in the National Crisis Intervention Team, which was formed to respond to the needs of communities affected by the eruption in psychosocial support. During the workshops, a timeline was also defined for workshops to take place with the communities.



Above: Children affected by the volcanic eruption during psychosocial social support activities carried out by the ERC.

Volunteers carried out replica workshops for other ERC volunteers in Provincial branches and workshops directly with communities. In the Province of Tungurahua replica workshops for volunteers took place in Huambaló, Patate, Loma Grande and Ambato. In these communities, workshops were held reaching a total of 83 children and adolescents. In the Province of Chimborazo, a workshop for volunteers was held and two workshops for a total of 160 children were held in Penipe.

Although not within the Appeal, further workshops took place in Pastaza and Bolivar for ERC volunteers and with communities to ensure support to all communities affected. The ERC also set up self help groups for volunteers who participated in capacity building in case of stress in all Provincial branches.

Activities have taken place as planned, however not all beneficiaries were reached as planned as the ERC continues to provide psychosocial support to communities. At the close of the operation, 700 people had been reached and by the end of 2007, the ERC expects to reach 2,500 people.

## **Ecuador: Volcanic Eruption; Appeal no. MDREC002; Final Report**

Overall, psychosocial support activities have shown to be important for communities as they face the ongoing threat of recurrent volcanic activity and is considered to have a long term impact. The provision of psychosocial support for communities has been extremely important for them as expressed by one inhabitant living in Chimborazo “more than the goods they (ERC) have provided us with, their words of comfort, their company and presence have been better”. ERC volunteers are now prepared to provide ongoing psychosocial support to the community.

### **Family Linking**

#### **Objective 1: 100 people will be supported in the process of reuniting with family members in the Provinces of Tungurahua and Chimborazo**

Family linking was considered important by the ERC immediately after the eruption of Tungurahua when people were rapidly evacuated from their communities. Shortly after the start of the operation, however, the ERC decided that this activity was no longer needed as families members had reunited with each other with no major difficulties. The Plan of Action was revised accordingly in order to reinforce the emergency relief activities.

### **Disaster preparedness**

#### **Objective 1: 1,095 families (5,475 beneficiaries) will be provided with domestic protection kits in the Provinces of Tungurahua and Chimborazo.**

Protection kits were distributed to families as planned on 30 September in Chimborazo and 1 October in Tungurahua. A total of 1,029 families were identified to be assisted with protection kits. Each kit distributed included one torch, 10 masks, 2 protective glasses, 4 batteries (2 pairs) and 1 spade.

Workshops also took place with communities in both Provinces on personal safety in the event of volcanic activity and the use of the protection kits provided. Communities are now better prepared for response in case of any further volcanic activity.

#### **Objective 2: The ERC is reinforced to respond to the situation and carry out the activities in support of the affected communities in the Provinces of Tungurahua and Chimborazo**

The following activities took place to strengthen the ERC response capacities in support of the communities affected by the volcanic eruption.

The coordinator and two field assistants were hired and are currently working to support activities within the Plan of Action.

To ensure the ERC local branches were mobilized and logistically equipped, an Incident Command System was set up with its base in the town of Ambato, where all response operations were coordinated by the ERC. This town was decided on because of the strategic logistical, operative and geographic location and it is considered low risk. A response plan was developed based on the capacities of local and provincial branches. Work teams took shifts depending on the volcanic activity.

A situation room was set up where all information was systematized and technical criteria was provided on decision making at the operative, management and governing level. This room was equipped with an alternative energy system in case the electricity was cut off to ensure the continuity of work. A response team was also formed to work in confined spaces, prepared to rescue people trapped in collapsed buildings. First aid kits were provided to all local and provincial branches, equipped to attend large numbers of people. An activation system was designed accompanied by an organigram defining roles and responsibilities.

To guarantee the safety of personnel during operations, volunteers were provided with protection kits including: helmets, jackets, and were included in the insurance against accidents.

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In addition, capacity building workshops were held for ERC volunteers, which contributed to institutional strengthening and improved work with the community:

- DANA workshops took place to ensure ERC volunteers had the information and data needed to carry out their work (and others) effectively. Two DANA kits were secured for the use of ERC, one in each Province. Each kit included: stationary, office materials, 1 photographic camera and 1 computer.
- UNETE based their actions on the information provided by the ERC volunteers from all four Provinces directly affected by the volcanic activity and from nearby locations.
- A workshop on humanitarian supply management system (SUMA) took place to provide technical training to volunteers in the management of this software. This system was used in the warehouses of Totoras (Tungurahua), Guano (Chimborazo) and at the headquarters.
- Workshops were also held on the Command Incident with Provincial branches to explain why and how this response system was used in the operation.

Telecommunications were strengthened through the acquisition of equipment to link communities affected by the volcanic activity. This activity involved the installation of a Very High Frequency (VHF) system, as the interconnecting High Frequency (HF) system had collapsed. This allowed for stable communication between the communities of Baños, Pelileo, Huambaló, Patate, and the towns of Ambato, Guaranda and Riobamba. The following equipment was secured for this purpose: 1 VHF transceiver, 1 6dB multi-directional antenna, and 1 20 amp power source.

In addition, old equipment was replaced in relay stations in the following communities: Atacazo, Pilisurco, Santa Ana de Sagúan, Lourdes and Abitagua. Each relay station includes: one VHF relay, 1 duplicator, 1 20 amp power source, 1 115 amp/hour battery and 1 antenna. The equipment originally stated in the plan of action, was modified according to the telecommunication needs on the ground.

The installation of equipment was supported by the provision of locations by the Joint Command of the armed forces in the communities of Pilisurco, Atacazo and Abitagua for this purpose, thanks to the agreement signed between the ERC and the abovementioned entity.

During the operation, although not within the planned activities covered by this Appeal, the ERC successfully installed 20 Early Warning Systems in communities.

To protect communities who live near the volcano the ERC set up these systems to warn people of volcanic activity and promote their evacuation in case of a possible eruption or damming of rivers in the area. These systems were developed with the community using risk maps where evacuation routes and meeting points were identified. Workshops have taken place with communities, who have been empowered by this work and who acknowledge the systems as their own and for them.

### **Red Cross and Red Crescent Movement -- Principles and initiatives**

The Federation supported the ERC in assisting communities that were affected by the volcanic eruption. In the planned operation, the activities to be carried out in emergency relief, medical care, and psychosocial support were all based upon the principle of humanity. The selection criteria of families to be supported by this Appeal were based on the level of vulnerability of those affected, respecting their culture and ensuring gender sensitivity.

Activities planned for this Appeal were based on SPHERE standards, humanitarian charter and the code of conduct for emergency response. The operation was guided by principles and rules relating to transparency in the drawing up and dissemination of narrative and financial reports. All objectives put forward in the appeal are in line with Strategy 2010, as well as the Strategy for the Movement and the Principles and Rules of the Movement.

## National Society Capacity Building

Building the capacities of the ERC was an important part of the Appeal, particularly considering the nature of the emergency and the likelihood of ongoing volcanic activity. While the ERC was in a good position to respond to the needs of the communities affected at the start of the emergency through presence of local and provincial branches, the strengthening of response mechanisms and capacities was beneficial and led to an overall improved response system during the operation. The five main actions carried out to reinforce the National Society's response capacities contributed to this: ensuring proper mobilization and logistics; securing additional human resources to support activities on the ground; capacity building activities and protective equipment for ERC volunteers; provision and installation of telecommunications equipment for local ERC branches; provision of Damage and Needs Assessment (DANA) kits. This resulted in a cohesive and integrated response system being implemented by the ERC, organised through the Incident Command System set up in Ambato where all response operations were coordinated by the ERC.

The National Society headquarters and national departments also ensured that ERC branch capacities were prepared to implement the Plan of Action. This was reflected in the capacity building workshops that took place for volunteers in psychosocial support, preceding workshops with communities on the same subject. This was further strengthened by self help groups which the ERC set up for volunteers who participated in capacity building in case of stress in all Provincial branches.

In addition to activities carried out within the Appeal to directly strengthen the ERC response, the Federation supported the ERC from the start of the emergency and throughout the implementation of the Plan of Action. This support was seen in the application of standards and following of procedures in logistics, finance and technical areas such as Water and Sanitation, damage and needs assessments, report writing, as well as assisting in the provision of information with regard to the setting up of situation rooms, emergency operations centres, and coordination in emergencies, command systems and organisation of response. A Disaster Management officer from PADRU and a Regional Intervention Team (RIT) member from Argentine Red Cross stayed in Ecuador until November 2006 directly supporting the National Society. Support was also provided to the ERC throughout the operation by the Disaster Management delegate based in Lima.

Thanks to support from the ECHO Thematic funding, the ERC prepared Contingency Plans to consolidate the National Response Plan based on the methodology recommended by the International Federation. This support has increased National Society capacities in the following areas:

- Provincial branches have completed respective Vulnerability and Capacity Assessment (VCA), risk scenarios and threat factors, in line with the Federation methodology on the preparation of response plans.
- ERC representatives from provincial branches were trained in the methodology of preparation of Response and Contingency Plans, and also other National Society and Federation tools.
- Workshops took place in six Provinces, including Tungurahua and Chimborazo where a particular emphasis was made on risk analysis, definition of security zones, and the development of Contingency Plans in areas surrounding the Tungurahua volcano, capacity building for volunteers, particularly those who belong to brigades operating in high risk zones.
- Provincial branch Contingency Plans have been prepared and are being validated. Experiences from during floods and volcanic eruption of the Tungurahua volcano in 2006 contributed to the development of plans.
- The ERC now has a Response Plan in the event of diverse emergencies, as part of the National Disaster Management Plan; on the same vein, a Contingency Plan has been developed in case of a further eruption of the Tungurahua volcano, which has been tested and approved and was optimised by the ongoing volcanic activity.

The ERC has been strengthened at the national level, not only through capacity building for volunteers and equipment for local branches and volunteers, but also through the setting up of a national Incident Command System, which showed its effectiveness for operations of this nature, and a strengthened national telecommunications system that can be used by the National Society and also by members of different COEs.

In addition, the ERC, which has been invited to join the UNETE team on a regular basis, has consolidated its position as a reference organisation for assessment, analysis, planning and delivery of relief aid and early recovery activities.

### **Lessons learned**

Once again, the high vulnerability of Ecuador to destructive natural phenomena has been highlighted, in this case due to volcanic eruptions, emphasizing the need for appropriate monitoring and hazard, vulnerability and risk assessments as towns, settlements and infrastructure are frequently located in high-risk areas. It is a fact that the best preventive measures in the world are not very useful if risk reduction activities do not start with efficient coordination, preparedness and mitigation measures aimed at reducing or eliminating vulnerability in communities exposed to volcanic risk.

Better land-use, settlement and economic planning should be promoted. Crops, the soil, the flora and fauna and the environment in general are severely affected by ash falling and other volcanic residues. Contingency and reconstruction plans must take into account the damage to these sectors, and solutions must be sought.

Evacuation routes and practiced emergency drills proved to be useful and casualties were minimized by an effective early warning system. Scientists from the existing monitoring stations notified communities about the signs of a major eruption. Based on that information, communities chose to evacuate and within less than six hours, the communities closest to the crater of the volcano were completely evacuated. Had they stayed, up to 3,500 people could have been killed in the blast as flows of ash and lava resulted in the destruction of at least three villages.

Coordination and transparency will only be fully accomplished if a culture of collaboration and frank exchange of data among international agencies and national partners exists. The leading role of the National Civil Defence should be encouraged and coordination must improve among this and other relevant institutions.

Public information and communication are crucial. Although, at first, the public was alarmed and worried, the repetitive nature of volcanic phenomena soon makes people become accustomed to these events. It is essential for the population to be aware of the various existing hazards and how to respond to them. The population must learn to live with risk, particularly by including this variable in all development and planning activities and underscoring prevention and mitigation.

Unfortunately, after the initial coverage of the volcanic eruption by the media subsided, a decrease of assistance to the area was noted.

**[Interim financial report below;](#)**  
**[click here to return to the title page](#)**

**International Federation of Red Cross and Red Crescent Societies**

MDREC002 - ECUADOR - TUNGURAHUA VOLCANO

Interim Financial Report

Selected Parameters	
Reporting Timeframe	2006/1-2007/5
Budget Timeframe	2006/1-2007/12
Appeal	MDREC002
Budget	APPEAL

All figures are in Swiss Francs (CHF)

**I. Consolidated Response to Appeal**

	Health & Care	Disaster Management	Humanitarian Values	Organisational Development	Coordination & Implementation	TOTAL
<b>A. Budget</b>		<b>632,064</b>				<b>632,064</b>
<b>B. Opening Balance</b>		<b>0</b>				<b>0</b>
<b>Income</b>						
<u>Cash contributions</u>						
<i>British Red Cross</i>		70,199				70,199
<i>Canadian Red Cross Society</i>		55,408				55,408
<i>Italian DREF</i>		160,750				160,750
<i>Japanese Red Cross Society</i>		20,879				20,879
<i>Monaco Red Cross</i>		7,900				7,900
<i>Netherlands Red Cross</i>		47,400				47,400
<i>Swiss Red Cross</i>		47,925				47,925
<b>C1. Cash contributions</b>		<b>410,460</b>				<b>410,460</b>
<b>C. Total Income = SUM(C1..C6)</b>		<b>410,460</b>				<b>410,460</b>
<b>D. Total Funding = B + C</b>		<b>410,460</b>				<b>410,460</b>

**II. Balance of Funds**

	Health & Care	Disaster Management	Humanitarian Values	Organisational Development	Coordination & Implementation	TOTAL
<b>B. Opening Balance</b>		0				<b>0</b>
<b>C. Income</b>		410,460				<b>410,460</b>
<b>E. Expenditure</b>		-410,272				<b>-410,272</b>
<b>F. Closing Balance = (B + C + E)</b>		189				<b>189</b>

International Federation of Red Cross and Red Crescent Societies

MDREC002 - ECUADOR - TUNGURAHUA VOLCANO

Interim Financial Report

Selected Parameters	
Reporting Timeframe	2006/1-2007/5
Budget Timeframe	2006/1-2007/12
Appeal	MDREC002
Budget	APPEAL

All figures are in Swiss Francs (CHF)

### III. Budget Analysis / Breakdown of Expenditure

Account Groups	Budget	Expenditure					TOTAL	Variance
		Health & Care	Disaster Management	Humanitarian Values	Organisational Development	Coordination & Implementation		
A							B	A - B
<b>BUDGET (C)</b>		<b>632,064</b>					<b>632,064</b>	
<b>Supplies</b>								
Clothing & textiles			742			742	-742	
Food	48,753		47,149			47,149	1,604	
Water & Sanitation	49,320		5,924			5,924	43,396	
Medical & First Aid	49,419		8,860			8,860	40,559	
Teaching Materials	493						493	
Other Supplies & Services	199,279		68,786			68,786	130,493	
<b>Total Supplies</b>	<b>347,264</b>		<b>131,461</b>			<b>131,461</b>	<b>215,803</b>	
<b>Land, vehicles &amp; equipment</b>								
Computers & Telecom	43,801		45,771			45,771	-1,970	
Office/Household Furniture & Equipm.			10,341			10,341	-10,341	
<b>Total Land, vehicles &amp; equipment</b>	<b>43,801</b>		<b>56,112</b>			<b>56,112</b>	<b>-12,311</b>	
<b>Transport &amp; Storage</b>								
Storage			3,036			3,036	-3,036	
Transport & Vehicle Costs	25,158		19,276			19,276	5,882	
<b>Total Transport &amp; Storage</b>	<b>25,158</b>		<b>22,312</b>			<b>22,312</b>	<b>2,846</b>	
<b>Personnel Expenditures</b>								
Regionally Deployed Staff	72,612		26,191			26,191	46,421	
National Staff			6,880			6,880	-6,880	
National Society Staff			11,740			11,740	-11,740	
Consultants			11,645			11,645	-11,645	
<b>Total Personnel Expenditures</b>	<b>72,612</b>		<b>56,456</b>			<b>56,456</b>	<b>16,156</b>	
<b>Workshops &amp; Training</b>								
Workshops & Training	21,294		29,571			29,571	-8,277	
<b>Total Workshops &amp; Training</b>	<b>21,294</b>		<b>29,571</b>			<b>29,571</b>	<b>-8,277</b>	
<b>General Expenditure</b>								
Travel	15,248		25,254			25,254	-10,006	
Information & Public Relation	19,605		36,184			36,184	-16,579	
Office Costs	45,998		10,462			10,462	35,536	
Communications			14,180			14,180	-14,180	
Professional Fees			2,873			2,873	-2,873	
Financial Charges			-905			-905	905	
Other General Expenses			-179			-179	179	
<b>Total General Expenditure</b>	<b>80,851</b>		<b>87,868</b>			<b>87,868</b>	<b>-7,017</b>	
<b>Program Support</b>								
Program Support	41,084		26,491			26,491	14,593	
<b>Total Program Support</b>	<b>41,084</b>		<b>26,491</b>			<b>26,491</b>	<b>14,593</b>	
<b>TOTAL EXPENDITURE (D)</b>	<b>632,064</b>		<b>410,272</b>			<b>410,272</b>	<b>221,793</b>	
<b>VARIANCE (C - D)</b>			<b>221,793</b>			<b>221,793</b>		