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## DREF Operation

### Ecuador: Volcanic eruption

 International Federation  
of Red Cross and Red Crescent Societies

<b>DREF operation no.</b>	<b>MDREC016</b>	<b>Glide no.</b>	<a href="#">VO-2020-000205-ECU</a>
<b>Date of issue</b>	5 October 2020	<b>Operation timeframe:</b>	3 months
<b>Operation start date:</b>	5 October 2020	<b>Operation end date:</b>	31 January 2021
<b>IFRC Category assigned to the disaster or crisis: Yellow</b>			
<b>Funding requirements (CHF):</b> 176,363 Swiss francs			
<b>Total number of people affected:</b>	18,685	<b>Number of people targeted</b>	4,176
<b>Affected provinces</b>	Chimborazo, Bolivar, Guayas, Los Ríos, Santa Elena and Manabí	<b>Number of provinces targeted</b>	1 - Bolivar
<b>Presence of the Host National Society:</b>			
The Ecuadorian Red Cross (ERC) has a presence in 24 provinces of Ecuador represented by 24 provincial branches and 83 cantonal branches. It has 7000 volunteers registered in the national database and 200 staff specialized in different lines of action.			
<b>Red Cross and Red Crescent Movement partners currently involved in the operation:</b>			
The German Red Cross (GRC) and International Federation of Red Cross and Red Crescent Societies (IFRC) are supporting the National Society. They have promoted initial readiness and early actions through the activation of the Early Action Protocol (EAP), which the Ecuadorian Red Cross implemented with funding from the IFRC's Forecast-based Action Fund, by the DREF (FbA) for Volcanic Ashfall in areas of Chimborazo province.			
<b>Other partner organizations actively involved in the operation:</b>			
The Geophysical Institute, the Guamote Cantonal Decentralized Autonomous Government (GAD), the Water Unit (Chillanes) and the leaders of the selected communities in Bolivar provinces.			

<For the budget, click [here](#). For Contacts, click [here](#).>

## A. SITUATION ANALYSIS

### Description of the disaster

In the early hours of 20 September 2020, the Sangay volcano, located in the central Ecuadorian province of Morona Santiago, registered a significant increase in its level of eruptive activity (National Geophysical Institute; Special Report no. 4- 2020). Seismic records indicated the occurrence of explosions and ash emissions much more energetic than any of those observed in previous months. Starting at 04h40 (GMT -5), several satellite images showed a large ash cloud, rising to a height of approximately 6 to 10 km above the volcano's crater. The highest part of the ash cloud moved east, while the lowest parts moved west of the volcano.



*Ecuadorian RC volunteers conducting Damage Assessments and Needs Analysis (DANA) and delivering masks to the people affected of the community of Chillanes in the province of Bolivar. Source ERC, 21 September 2020.*

As the hours passed, the ash cloud began to descend over the provinces of Chimborazo, Bolivar, Guayas, Los Rios and part of Santa Elena. The highest impact was registered on 21 September in the cantons of Alausí, Chunchi, Guamote, Cumandá and Pallatanga in Chimborazo province with the primary impacts on agriculture and livestock, and in Chillanes canton in Bolivar where the community water sources were contaminated (Annex I: map of affected area). The affected population in Chillanes canton is estimated at 18,685 people according to data from the 2010 population census and Chillanes plan of development and territorial organization.

In the Guayas province, the Guayaquil cantonal authorities ceased activities at the international airport José Joaquín de Olmedo for approximately two hours to clean the runway. Meanwhile, local authorities in the province of Chimborazo installed the emergency operations centre (EOC) with the support of the National Service for Risk and Emergency Management (SNGRE) and the Ministry of the Environment and Water, to take protection and response measures in the affected areas. At the national level, the Ministry of Agriculture and Livestock assessed the impact and damages caused by this event.

The Ecuadorian Geophysical Institute, with its partners in the field, evaluated the collection of ash samples in the different locations where ashfall occurred to identify possible scenarios of increased or decreased activity of the volcano. In the afternoon of 21 September, the volcano continued to emit gases and columns of ash, which did not exceed 2 km in height.

The Sangay volcano, located in the eponymous national park, is one of the most active in the country. Normally its activity does not generate impacts on the population. However, in recent months with the increase of its activity and the direction of the winds from the Amazon, the ash dispersion has occurred in previous areas that had not been affected by other eruptive processes. Thus, ashfall did not occur in the projected areas, but rather in other locations. Ashfall affected six provinces: Guayas, Los Ríos, Santa Elena, Chimborazo, Manabí and Bolívar.

For example, the Pallatanga canton, which had requested that the EOC declare an emergency in the canton, which was not accepted, was affected by ashfall. While the ash thickness remained less than 5 mm, the amount of accumulated ash was sufficient to generate havoc in the agricultural and livestock sectors due to the direct fall and the contamination of water sources that lack adequate protection.

The Ecuadorian Red Cross (ERC) activated its Early Action Plan (EAP) for [Forecast-based Triggered Action for volcanic ashfall](#) (MDREC015) on 21 September 2020. The Ecuadorian Red Cross has responded with early actions for 1,000 families in the province of Chimborazo. However, the effects of the volcanic ash have affected other areas such as Bolivar province, which requires humanitarian assistance and has not been reached with the activation of the EAP.

In the canton of Chillanes in Bolívar province, the ashfall affected sources of water, agriculture, and livestock. According to data from the Ministry of Agriculture, at least 12,000 hectares of pasture that feeds 10,000 cattle were affected in Chillanes, with a layer of between 2 and 3 millimetres covering the forage. The damage to 1,000 hectares of tree tomato and blackberry crops influences more than 6,000 producers. Although the maize crop is now in the harvest season, no major losses were reported of the 7,000 hectares planted.

As a response activity, 15 groups of Ministry of Agricultural technicians were deployed to the communities, training farmers to protect animals and clean the eyes, mucous membranes and noses of their livestock with water and brush their fur to avoid irritation and damage to their skin. In addition, this same ministry sent 8 trucks with bananas, and 600 silage and 45-kilogram hay bags to the communities to feed the livestock. Additionally, 40 air pumps were distributed to clean the crops, especially the blackberry and tomato crops that had been affected.

## **Summary of current response**

### **Overview of Host National Society**

Ecuadorian Red Cross field assessment teams immediately were deployed to measure the impact of the ashfall. At the same time, the ERC national headquarters and the IFRC office in Ecuador and the Country Cluster Support Team (CCST) for the Andean countries, with the support of the Climate Centre and the German Red Cross, activated the ERC's Early Action Plan (EAP) for [Forecast-based Triggered Action for volcanic ashfall](#).

According to the EAP model forecast, the Chimborazo province was projected to experience the greatest impact of the ashfall. Aligned with the EAP for this event, the ERC reached 1,000 families with the distribution of health and livelihood protection kits; a total of 378 families received with prepaid Visa cards with a 200 US dollars (USD) balance for livelihood protection. The ERC also conducted general actions to raise awareness to support the readiness of communities.

Due to the possible contamination of water sources in the community of Chillanes, the ERC branch in Bolívar mobilized an assessment team. This community obtains its water in a piped untreated water system from the local spring. The ERC mobilized 35 volunteers and 15 national technicians, specialized in different lines of action, to implement preparedness and response activities.

The ERC has experience in responding to different types of emergencies such as earthquakes, floods, forest fires and population movements, among others. The territorial network's volunteers, staff and experience will allow for the implementation of early actions. The ERC's structure at a national level allows for the articulation of the actions of each branch (boards) since these have administrative and financial autonomy. The ERC has teams trained in the areas of emergency health; water, sanitation, and hygiene (WASH); humanitarian assistance, as well as the national intervention team (NIT) members with general training, to support the operation.

Locally, the ERC has a staff presence at the Bolívar provincial council, located approximately one and a half hours in car from the affected area. This branch has approximately 20 volunteers and paid personnel who are permanently active and have active accident (regular) and health (linked to COVID-19) insurance policies to conduct activities. In addition, there are more than 30 volunteers in the area who have WASH and damage and needs assessment expertise ready to support the implementation of this EPoA.

### **Overview of Red Cross and Red Crescent Movement actions in the country**

The IFRC through its team in Ecuador is supporting the EAP activation and this DREF operation. The IFRC country coordinator deployed to support the ERC in the WASH assessment activities in Bolívar. The operations officer supported the activation of the EAP activities in Bolívar from 22 to 25 September. The

CCST for the Andean countries and the Americas Regional Office supported remotely with technical guidance in disaster management, cash and voucher analysis, finance, PMER, among others.

In addition, the National Society has received support from the German Red Cross, which in coordination with the IFRC developed the Early Action Protocol that was activated for this event to reach the communities most at risk in Chimborazo.

### **Overview of other actors in country**

In the Chimborazo and Bolívar provinces, the following state institutions are active: the National Service for Risk and Emergency Management, Ministry of Agriculture and Livestock and Ministry of Environment and Water with the delivery of different protection products or goods such as: volcano kits (which includes personal protection equipment- PPE), cattle feed, equipment for cleaning of ashes in crops and food and hygiene donations for families. However, no further response activities have been implemented.

As soon as the event started, the provincial EOCs were activated in Chimborazo and Bolivar to follow up on the changes of scenario. The National EOC is permanently active because of the COVID-19 outbreak. As the impact of the ashes had a local impact and did not exceed 50% of the canton, this event was discussed at the technical working group and plenary level; however, a national response plan, was not activated. The National EOC is promoting key messages on protection and self-care in the population by different media at the national level.

The SNGR in the Chimborazo province is experienced in handling ashfall due previous eruptive processes with the Tungurahua volcano. However, in Chillanes in Bolivar, this is the second time that this event has occurred.

Currently, the Geophysical Institute, the SNGRE and the Emergency Centre of Ecuador (ECU 911), continue with the permanent monitoring of the activity of the Sangay volcano to identify possible new events that could affect populations within the direction of ash dispersion due to winds.

### **Analysis of needs, target selection, scenario planning and risk assessment**

#### **Analysis of needs**

As part of the development of this emergency plan of action, different aspects of the target communities have been evaluated:

#### **Communication**

The impacted areas are in high mountain areas with reduced mobile telephone or television signal. Radio is the most used. Most of the population in this area is composed of indigenous people. As local governments and private organizations implement their awareness strategies through social networks, there are challenges to reach the affected population due to technical, language and cultural issues.

#### **Water and hygiene**

The ashfall has affected the water supply in the Chillanes canton since the area does not have a protected water treatment system. It only has a process of direct collection and distribution by pipe to the houses in the communities. This water is used both for human and animal consumption, as well as irrigation.

The ERC WASH specialist team identified 19 communities in the Chillanes canton, Bolivar province, where the water treated and distributed in the community systems is not suitable for human consumption. Samples of water collected in different water collectors' points and surface water sources, shows an absence of residual chlorine. While the pH value is less than 6.8<sup>1</sup>, it can be inferred that the water is interacting with

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<sup>1</sup> A basic PH tester was used during the initial assessment; however, this figure requires verification with a proper equipment due the low level identified and the urgent need for WASH intervention in the affected area.

the volcanic ash, which could be neutralizing the chlorine that water board administrators apply in community systems.

For the chemical analysis that measures the minerals present in the superficial water sources and its exposure to ashfall, a spectrophotometer will need to be used to obtain a more accurate result. This reveals that the concentration of sulphate is of 0 mg/l, nitrates of 0.4 mg/l and manganese of 0.017 mg/l. These levels require an intervention, combined with the observable accumulation of ashes in the storage and distribution tanks. In addition, it was found that the quality of treated water is deficient due to the incorrect management of the chlorination of the water in the community systems. Samples collected in homes in the area indicate the high risk of contracting diseases due to the consumption of contaminated water with colonies forming faecal coliforms.

### **Livelihoods**

As mentioned, the affected area has combined land use between agricultural and livestock activities. Currently, this area is in the harvest season, which has decreased the potential loss of crops. The Ministry of Agriculture and Livestock has acted to protect the livelihoods of most families, both for the adequate harvesting of products and for the protection of pastures for animals. Additionally, since this is not an event that blocks access roads, transportation to the usual markets are open. Due to the COVID-19 context, the population in this area already had their livelihoods compromised prior to the ashfall.

### **Health**

Restrictive measures for face-to-face activities outside of the home remain in place in Ecuador. During the ashfall, most of the population was in their homes, which decreased people's exposure to the effects of the event. For example, children, adolescents and a large part of the adult population continue to carry out television-based or internet-based activities in schools and in administrative matters. However, those engaged in agricultural and livestock activities for their livelihoods conduct their daily activities in open areas outside the home.

The main health problems identified are respiratory tract, eye and skin infections. In addition, gastrointestinal problems due to consumption of ash-contaminated water or food were reported. The country's health system is prioritizing the attention of COVID-19 cases, which puts a strain on health attention. Furthermore, many of the symptoms that are presented by ashfall can be confused with COVID-19 symptoms.

This event has not provoked any need for specific psychosocial support. However, with the COVID-19 pandemic the ashfall has increased levels of stress. However, this operation will not provide psychosocial support.

### **Shelter**

Given the amount of ash recorded in the area, the impact on housing was not high. The population cleaned roofs, streets, and sidewalks. However, the corrals for animals have no protection against ashfall, which will require action if the ashfall increases.

### **Target population**

In the province of Chimborazo, ashfall occurred in several sectors, which were reached by the EAP activation for volcanic ash. Prioritized attention is necessary in Chillanes canton in the Bolívar province since it is a rural area exposed to natural and anthropogenic threats. This is a population composed of mostly agricultural and livestock farmers who depend on the water for their daily activities. Additionally, this is in the same location that experienced 6.5 degree earthquake in September 2018 that damaged several houses and productive infrastructure in the community.

This plan of action will enable the Ecuadorian Red Cross to conduct actions in 19 communities of Chillanes canton (Bolívar province): San José de Guayabal, Guayabal Naranjal, Loma de Pacay, Tiquibuzo, Torreloma, San José de la Comuna, San Pedro Guayabal, Tablapambas, Achín, Sigsipamba, San Francisco, San Vicente, San Pablo de Amali, Arrayapamba, Jashi, Bola de Oro, Zumbe, Capilla and Pacay

Tiguindala Alto. This area has approximately 1,044 families, composed of 51% men and 49% women. The average age of inhabitants in the Bolivar province is 30 years old. The following table provides a detailed characterization of the community:

<b>Men</b>	<b>2,004</b>
<b>Women</b>	<b>2,172</b>
Population - under 1 year old	84
Population - 1 to 9 years	960
Population - 10 to 14 years	585
Population - 15 to 29 years	960
Population - 30 to 49 years old	793
Population - 50 to 64 years old	418
Population - 65 years and older	376
<b>Chillanes Population</b>	<b>4,176</b>

1,044 families are targeted from these 19 communities:

#	Community	No. of Families	#	Community	No. of Families
1	San José de Guayabal	52	11	San Francisco	65
2	Guayabal Naranjal	57	12	San Vicente	42
3	Loma de Pacay	60	13	San Pablo de Amali	30
4	Tiquibuzo	60	14	Arrayapamba	60
5	Torreloma	46	15	Jashi	65
6	La Comuna	85	16	Bola de Oro	25
7	San Pedro Guayabal	80	17	Zumbe	35
8	Tablapambas	91	18	Capilla de Pacay	9
9	Achín	77	19	Tiguindala Alto	45
10	Sigsipamba.	60			

While the ERC plans to work with the entire affected population, priority is given to:

- Families with older adults
- Families with people with disabilities
- Single-parent families with children and adolescents
- Pregnant women and/or
- Families engaged in agricultural or livestock activities.

In addition, considering the COVID-19 context throughout the country, priority is also given to families who have lost a family member to this virus, who have someone in this condition or are currently recovering.

## Scenarios

Scenario	Humanitarian Consequence	Potential Response
The activity of the volcano is maintained in episodes with the same intensity of the last explosion. In addition, the wind	Accumulation of more ash from several explosions in areas of	Maintain monitoring in the area, carry out evaluations and, if necessary, request additional emergency funds

currents maintain their direction towards the already affected areas.	greater impact. Damage to livelihoods and health.	to respond in the most affected sectors.
The volcano activity decreases and remains as in the period 2015 to 2019, where despite the explosions, the ash dispersion was limited.	Fall of material near the flanks of the volcano and the area of the National Park, without affecting the population directly.	Monitoring for possible blockage of the main river by descent of accumulated material in the flanks.
Transversal: The community has cases of people with COVID-19 or in recovery, contact with the ash will increase the number of acute respiratory infections, especially in vulnerable groups.	Increase in demand for care for people with respiratory conditions in the local health centres.	Home visits to monitor possible COVID-19 cases in the communities.

## B. Operational Strategy

### General operational objective:

#### Immediate reduction of the risk of waterborne and water-related diseases for 1,044 families in the 19 selected communities of Chillanes canton, Bolivar province.

This operation will be conducted in the 19 communities of the canton in different lines of action. To guarantee the implementation of this plan, the National Society proposes to carry out an intervention with a community, integral and environmental approach through:

- The implementation of activities to protect and care for water sources, with the active participation of local actors, authorities, and community members.
  - Delivery of inputs for treatment, storage, and good use of water at the household level, for consumption, food preparation and hygiene to 1,044 families.
  - Sensitization talks for the prevention of diseases caused by the consumption of ash-contaminated water, methods of water treatment at the household level, the importance of a good water culture.
  - Analysis of water quality in the affected communities on a permanent basis.
  - Delivery of health personal protection kits to 4,176 people in the communities; composed of (2 N95 / KN 95 masks, 1 goggles and 1 neck buff)
  - Delivery of home cleaning kits to 1,044 families.
- **Health** Considering that one of the priorities of attention is focused on the health of the population, it is necessary to guarantee that the population has the basic respiratory and ocular protection articles through the distribution of a personal protection kit.
  - **Water sources protection and maintenance** A basic intervention is planned through the coverage of 19 water sources with covers, to protect the vital liquid from the ashes. All storage tanks with ash deposits at the bottom will be emptied and cleaned.
  - **Distribution of home water treatment methods and safe home water storage systems to 1,044 families.**  
The ash appears precipitated at the bottom of the storage tanks. However, considering the low pH shown by the analyses as an indicator, it is possible that some components of the ash have dissolved in the water. Thus, despite the absence of turbidity, home treatment with PUR sachets is recommended, which will help the precipitation of these components, in addition to disinfecting and leaving a residual chlorine in the water as recommended by the WHO.

It is essential that the families have 2 plastic buckets: one of 10-litres for the product mixture and one of 20-litres with lid and tap for water storage and distribution.

- **Promotion of good hygiene practices focused on the safe handling of water in the 19 communities**  
Safe storage methods will be promoted in homes through campaigns and workshops.
- **Water quality monitoring in the 19 communities.**  
ERC volunteers, while visiting homes to promote safe water management and conduct surveys, will monitor water quality with on-site and laboratory methods. Distribution system operators will be trained in monitoring techniques and provided with the necessary equipment and supplies to carry out this monitoring on a regular basis.
- **Training to those responsible for the 19 water systems for correct chlorination**  
The operators will be trained in the correct chlorination technique because many of the systems evaluated were not effective as none of the samples analysed had residual chlorine. In addition, there will be orientation and technical support for the correct chlorination of water that guarantees a safe and sustainable community water distribution service
- **Training of 20 volunteers of National Society:**  
A group of at least 20 volunteers will be trained in the following topics:
  - Home water treatment techniques.
  - Water quality monitoring (in situ and laboratory)
  - Rapid water, sanitation and hygiene assessments.
  - Induction in Open Data Kit use.

In addition to the WASH intervention, an assessment on livelihood needs and another on risk reduction needs will be conducted.

### **Operational Support**

The ERC, for the intervention in the 19 prioritized communities of Bolivar province, has a team of trained volunteers and specialists in water and hygiene issues, they will be activated for the implementation of the activities in this plan and they will be provided with technical support by national headquarters' staff. For this operation, the following will be required:

### **Human resources**

- 1 field-based WASH technician hired for 2 months of the 3-month intervention
- 40 volunteers, of which 10 are from the local provincial branch, for the planned activities.
- 1 finance assistant hired for 2 of the 3-month intervention. This is a new position in the National Society, and s/he will be fully dedicated to the operation.

### **Logistics and supply chain**

- 70,080 PUR or Watermaker sachets will be purchased for home chemical water treatment. This amount covers 2 months of uninterrupted consumption of safe water for 1,044 families of 4 members. If they are not available in the local market, the ARO Logistics Unit in Panama will procure and ship these to Ecuador.
- The reposition of 57 units of tarpaulins for the protection the 19 communities' water, this will be managed with the RLU.
- 2,088 buckets (1,044 of 10 litres and 1,044 of 20 litres) with tap and lid for safe water storage will be acquired locally. Trucks will be hired to transport the kits to the distribution points.
- The necessary PPE will be acquired for the implementation of the activities by the ERC volunteers and personnel involved in the operation.

### **Community Engagement and Accountability (CEA)**

To strengthen this operation, as well as guarantee and promote effective participation and feedback from participating communities, the ERC incorporates the Community Engagement and Accountability (CEA) approach. This will be structured based on an analysis and diagnosis of the communities' needs and

information channels, in order to support the strengthening and enhancement of their response capacities to ashfall.

Development of specific messages that respond to the most frequent concerns, questions, and doubts identified through the online and offline information channels implemented and as well as through the identification of rumours, the participatory identification of harmful behaviours, and the rapid diagnoses of needs of information

- Printing of IEC material in the dominant language of the area
- A community communication campaign will be carried out through the use of audio-visual resources, community theatre, among others that are adjusted to the community context.
- The communication messages will be disseminated in the 19 communities by the media channels preferred by the community.
- ERC will develop communication actions with the community in order to raise awareness about the health effects that may be caused by ash fall and the consumption of contaminated water.
- Compilation of testimonials from the population reached.

### **Information Technology**

- Open Data Kit (ODK) will be used to collect information and assessment related to water monitoring and hygiene surveys.

### **Security**

The ERC Principles and Values programme will provide technical orientation, support and guide the volunteers who mobilize the different communities to comply with operational safety parameters. Additionally, all personnel and volunteers involved in the operation must have the appropriate PPE.

In terms of Operational Security, the IFRC regional security team will support the National Society with the coordination trainings on operational security with the National Society team covering security briefings, risk analysis, critical incident management, improvement of the National Society's current security plan, among other aspects; while at the same time is being encouraged to take the Stay Safe for volunteers online course and the consolidation of the internal security network.

For a comprehensive institutional strengthening, it is imperative to ensure the Duty of Care by reinforcing the safety and security of Ecuadorian Red Cross volunteers through pragmatic operational security and Civil Military Relations (CMR) training within the framework of situations like volcano ash. The aim is to establish operational security and CMR training for the participation of the headquarters and in the branches that work in the current response.

### **Planning, Monitoring, Evaluation and Reporting**

The ERC used a monitoring methodology based on the Inter-American Development Bank's good practices for social projects; it is deployed to operational programmes at headquarters and to operational teams in the field, which guarantees the effective achievement of expected results. The review of technical and budgetary progress will be carried out periodically in cascade at the different levels of responsibility. The findings will be consolidated and reported by the Planning Management for timely decision making and communication. Additionally, the ERC will conduct a lesson learned (remote) workshop. From the CCST in Lima and the Disaster & Crisis Department of the IFRC, they will accompany the process of implementation and monitoring of the operation.

### **Administration and finance**

The ERC, through its Financial and Administrative Management, has assigned an accountant that will support budget preparation, item allocation and monitoring of expenses incurred during the plan's implementation, as well as the preparation of the financial report.

**Operation Risk Assessment**

Since 2019, Sangay volcano has increased its activity. The explosive peak of volcanic ash emission was reported on 21 September 2020. This volcanic activity is maintained; a new explosion of equal or greater magnitude remains possible. The National Society will extend its safety plan in this scenario, also considering the COVID-19 emergency that remains a concern in the country.

The population will receive information on health protection measures against volcanic ash and the appropriate use of personal protection equipment and the safe management of water.

The ERC has experience in working in this geographic area. In 2017, an earthquake measuring 6.7 on the Richter scale occurred. The ERC implemented a plan of action that supported the most affected families. Beyond the understanding of the context, the community is aware and knows the work of the ERC.

Throughout the operation, work will be carried out using the institutional procedures for procurement, distribution and reporting. The National Society will be directly supported by the IFRC team in Ecuador, and the CCST Andean countries and the ARO as needed, throughout the operation.

## C. Detailed Operational Plan



### Health

**People targeted: 4,176 people**

Men: 2,172

Women: 2,004

**Requirements (CHF): 54,481**

**Analysis:** Many people are beginning to resume activities outside their homes, including agriculture and livestock, considering the economic recovery following the initial impact of the emergency COVID 19 . The population affected by the ashfall, not only must protect themselves from the virus, but also of the effects of volcanic material on their health. With the delivery of protection kits, the health system of the area will be supported by reducing the potential concentration of people to seek medical attention for complications related to the volcanic event.

### Risk Analysis:

The Sangay volcano is active and a new explosion of volcanic ash remains a possibility. The risk of COVID-19 is latent in the affected population, which can complicate people's health conditions. The ashfall affects the respiratory tract, which is also a symptom of COVID-19. This situation could place families and communities at risk, such as people with the virus would mobilise themselves in public places without being aware of their condition. Another risk factor is that people with ash-related illnesses, due to the fear of COVID-19 infection, may not receive adequate care and their condition may become complicated.

**Population to be reached:** Although the affected communities are in diverse cantons, Chillanes has been selected for being an area of difficult access and with limited support from other organizations or public instances. It will be prioritized to families with people who meet vulnerability criteria, especially with respiratory problems due to COVID-19 or the ashfall.

**Programme standards/reference points:** For the distribution of the health protection kits, the standard established in the country by the Secretariat of Risk Management as a volcano kit was taken as a reference.

P&B Output code	<b>Health Outcome 4: Transmission of diseases with epidemic potential reduced</b>	4,176 people reached with the delivery of health protection kits											
	Health product 4.6: Improved knowledge of public health issues among target population in area.	4,176 health personal protection kits distributed											
	Planned activities Week	1	2	3	4	5	6	7	8	9	10	11	12
AP02 2	Purchase and distribution of 4,176 health personal protection kits (2 N95 / KN 95 masks, 1 goggles and 1 neck buff)												

AP02 2	Awareness (with CEA approach) talks to the population of the target communities on the use of the distributed kits.												
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**Water, sanitation and hygiene**

**People targeted: 4,176 people**

**Men: 2,130**

**Woman: 2,046**

**Requirements (CHF): 90,708**

**Analysis:** After an evaluation of the impact on water sources and distribution systems in 19 communities, a large percentage of the water analyzed had an abnormally low pH. It is presumed that the quality of the water has been compromised, even in those whose catchments are covered. This is possible because of numerous leaks in the pipes and even because of possible contamination of surface and subsurface water from which these systems are supplied. Furthermore, even in systems where water is chlorinated, there is no presence of residual chlorine in the household taps, with the consequent risk to health. Although there is no presence of turbidity in any of the samples analyzed, it is possible that the ashes dissolve some of its components in the water. In general, ash deposits are observed in the storage and distribution tanks, but not in the taps, from which it can be deduced that the ash precipitates rain inside the tanks.

To address these needs, it is proposed:

- Protection of water sources.
- Distribution of household water treatment methods and safe household water storage systems.
- Promotion of good hygiene practices focused on safe water handling.
- Monitoring of water quality.
- Training of system operators for proper chlorination.

**Risk Analysis**

- It has been considered that because of the culture of the population there may be resistance in using water treatment methods.
- Due to the COVID-19 context, the community may not be open to receive the ERC staff that would implement the activities. A recent risk assessment for the COVID-19 operation was used to inform the risk appetite for this DREF. The CEA activities will contribute to the acceptance of ERC to ensure smooth implementation of project activities
- The implementation time could be affected if water treatment sachets are purchased outside the country; the three-month time period is sufficient for procurement and distribution.

**Population to be reached:** The population in the communities that have water distribution systems and water boards, as well as those that do not have systems and use water directly supplied from the springs. In both cases water affects require special intervention. The communities whose water is administered by municipal water companies are not included in this. The selection was made in coordination with the Municipality, the Undersecretary of Water and the Ministry of the Environment.

**Programme standards/reference points:** The water quality indices to be respected are those established by the WHO and Sphere standards:

Coliforms	Turbidity	Residual chlorine	pH
0 UFC/100ml	5 NTU	0,5 mg/l	6-8

P&B Output code	<b>Outcome WASH1: Immediate reduction in risk of waterborne and water-related diseases in selected communities.</b>	- 4,176 people in the prioritized communities use appropriate water and hygiene services in a humanitarian recovery context -											
	<b>Output 1.1 Continuous assessment of the water and hygiene situation in the selected communities is conducted</b>	- 19 water assessments conducted in the communities during the intervention - 19 coordination meetings carried out with local actors (1 per community) - At least 20 ERC volunteers trained in WASH issues.											
	Planned activities per week	1	2	3	4	5	6	7	8	9	10	11	12
AP026	Assessment and monitoring of the water and hygiene situation in the selected communities and identify water sources (surface water and storage tanks).												
AP026	Analysis and monitoring of the water quality and hygiene situation in the selected communities												
AP042	Hiring a WASH project technician												
P&B Output code	<b>Output 1.2: The target population is provided with access to safe water that meets Sphere and WHO standards for quantity and quality</b>	- 1,044 families with safe water services with the delivery of water disinfection kits - 1,044 families sensitized on WASH issues - 19 communities receive tarpaulins to cover and protect the community water storages - 19 communities receive training and advice to community leaders to manage the monitoring and treatment of water sources.											
	Planned activities per week	1	2	3	4	5	6	7	8	9	10	11	12
	AP026	Distribution of 1,044 household water disinfection kits (PUR water disinfection sachets and 10 and 20-liter dispenser buckets), sufficient for 60 days, to 4,176 people.											

AP026	Awareness talks (with CEA approach) to the population of the target communities on safe water treatment, water culture and water disinfection methods												
AP026	Technical support to members of community water committees or boards in the management of water supplies, their treatment, analysis, operation, and maintenance of storage tanks through workshops or trainings												
AP026	Distribution of tarpaulins for the protection of natural water sources.												
<b>P&amp;B Salida Código</b>	<b>Output 1.3. Water, Sanitation and Hygiene (WASH): Hygiene-related goods that meet Sphere standards and training is provided to the target population on how to use these goods</b>	<ul style="list-style-type: none"> <li>- 1,044 family cleaning kits delivered to selected communities.</li> <li>- 19 awareness-raising talks held in the selected communities.</li> <li>- 2 communication channels implemented for community participation</li> <li>- 1 CEA-related space to return feedback findings to community</li> </ul>											
	Planned activities per week	1	2	3	4	5	6	7	8	9	10	11	12
AP030	Purchase and distribution of 1,044 family cleaning kits (1 broom, 1 floor mop, 1 plastic bucket, 1 garbage bags pack, detergent, 1 sponge pack, 1 hand brush, 2 rubber gloves)												
AP084	Development key messages, and methods of CEA in WASH (mass media and interpersonal communication)												
AP084	Monitor progress, acceptance and evaluate the results of the intervention with feedback from beneficiaries												
AP030	An exit strategy has been developed that includes community consultation and sharing the results of the final evaluation with the community												

**Strategies for Implementation**  
**Requirements (CHF): 30,186**

<b>P&amp;B Output code</b>	<b>S1.1: The objectives of strengthening the capacity and organizational development of National Societies to ensure that they have the necessary legal, ethical and financial foundations, systems and structures, competencies and capacities to plan and implement</b>												
	<b>Output S1.1.6: National Societies have the necessary infrastructure and corporate systems in place</b>												
	Planned activities Week	1	2	3	4	5	6	7	8	9	10	11	12
AP042	Hiring an accounting technician												

AP042	Fuel and vehicle maintenance												
AP040	Volunteer visibility and protection (uniforms and PPE) for 40 volunteers.												
AP040	Costs for volunteers (transportation, food, accommodations, per diem)												
AP049	National headquarters' monitoring mission												
AP042	Lessons Learned workshop												
AP042	Administrative and banking expenses												
AP042	Office supplies												
AP049	IFRC technical and monitoring support												

## Budget

See Annex.

## Contact information

For further information, specifically related to this operational plan please contact:

### For more information, specifically related to this operation, please contact:

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## How we work

All IFRC assistance seeks to adhere to the **Code of Conduct** for the International Red Cross and Red Crescent Movement and Non-Governmental Organizations (NGO's) in Disaster Relief and the **Humanitarian Charter and Minimum Standards in Humanitarian Response (Sphere)** in delivering assistance to the most vulnerable. The IFRC's vision is to inspire, **encourage, facilitate and promote at all times all forms of humanitarian activities** by National Societies, with a view to **preventing and alleviating human suffering**, and thereby contributing to the maintenance and promotion of human dignity and peace in the world.

The IFRC's work is guided by Strategy 2020 which puts forward three strategic aims:



**Save lives.**  
protect livelihoods,  
and strengthen recovery  
from disaster and crises.



Enable **healthy**  
and **safe** living.

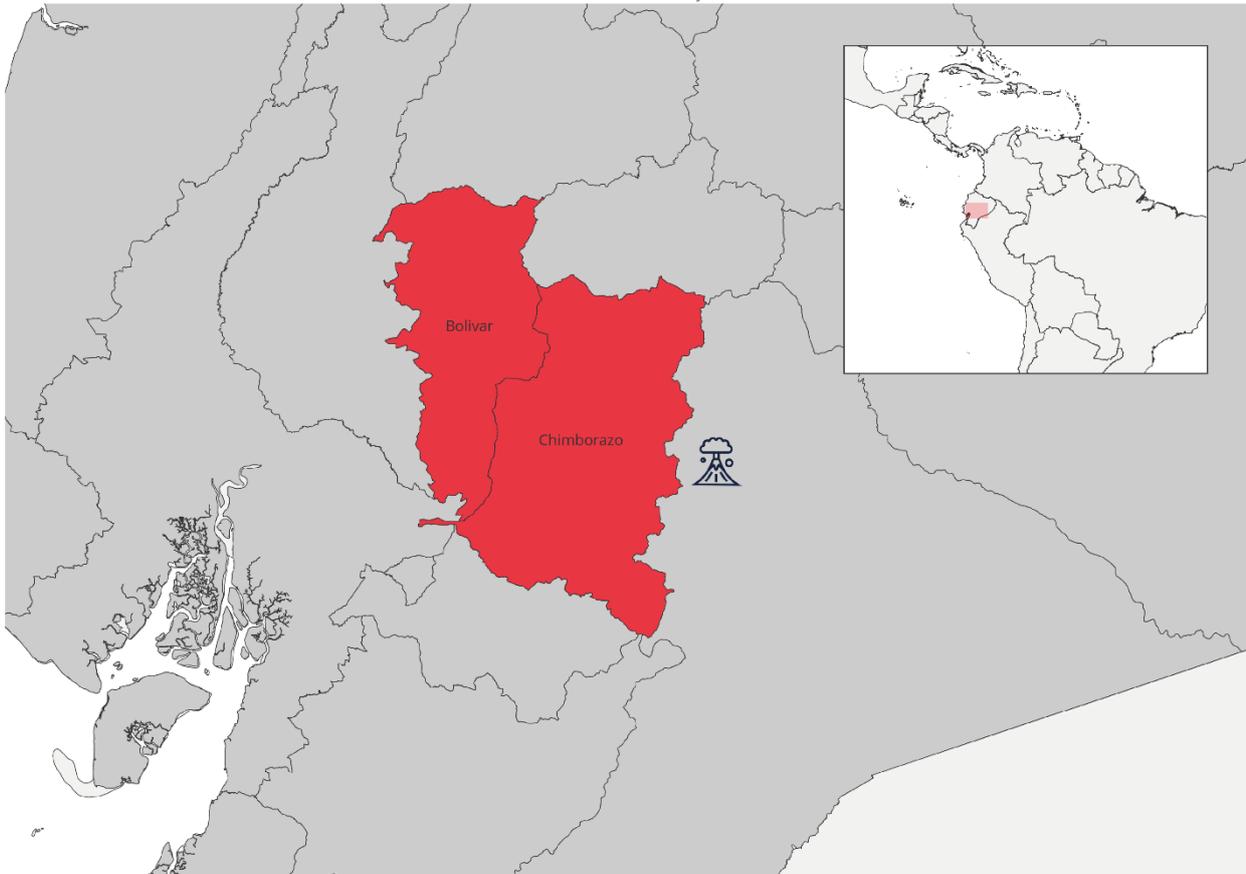


Promote **social inclusion**  
and a culture of  
**non-violence** and peace.



**Ecuador: Volcano Sangay Ashfall**  
GLIDE: VO-2020-000205-ECU

The maps used do not imply the expression of any opinion on the part of the International Federation of Red Cross and Red Crescent Societies or National Societies concerning the legal status of a territory or of its authorities.  
Data sources: Ecuadorian Red Cross, IFRC, OCHA FISS, HDX.  
Produced by IM Americas.



# DREF OPERATION

APPEAL CODE - ECUADOR- Volcanic Eruption

01/10/2020

## Budget by Resource

Budget Group	Budget
Shelter - Relief	1.651
Water, Sanitation & Hygiene	64.206
Medical & First Aid	50.112
Teaching Materials	12.230
<b>Relief items, Construction, Supplies</b>	<b>128.199</b>
Transport & Vehicles Costs	8.000
<b>Logistics, Transport &amp; Storage</b>	<b>8.000</b>
National Society Staff	13.050
Volunteers	9.850
<b>Personnel</b>	<b>22.900</b>
Workshops & Training	1.000
<b>Workshops &amp; Training</b>	<b>1.000</b>
Travel	2.600
Information & Public Relations	500
Office Costs	1.400
Communications	500
Financial Charges	500
<b>General Expenditure</b>	<b>5.500</b>
DIRECT COSTS	165.599
INDIRECT COSTS	10.764
<b>TOTAL BUDGET</b>	<b>176.363</b>

## Budget by Area of Intervention

AOF1	Disaster Risk Reduction	
AOF2	Shelter	
AOF3	Livelihoods and Basic Needs	
AOF4	Health	54.481
AOF5	Water, Sanitation and Hygiene	94.085
AOF6	Protection, Gender and Inclusion	
AOF7	Migration	
SFI1	Strengthen National Societies	22.898
SFI2	Effective International Disaster Management	4.899
SFI3	Influence others as leading strategic partners	
SFI4	Ensure a strong IFRC	
<b>TOTAL</b>		<b>176.363</b>

