

Ecuador: Volcanic Ashfall

Final report on early action phase

EAP name: Early Action Plan for Volcanic Ash Dispersion	EAP Number: EAP2019EC01
Early Action Protocol approved: April 2019	EAP timeframe: 5 years
Early action trigger date: 21 September 2020	Early action duration: 2 months End date: 21 November 2020
Number of people assisted: 5,000 people (1,000 families)	Early action phase budget: 105,926 Swiss francs
Host National Society: Ecuadorian Red Cross	Other National Societies involved in the EAP: German Red Cross
Partner organizations involved in the EAP: Geophysical Institute of the National Polytechnic School (IGEPN)	Date of report: 19 April 2021

<For the final financial report, click [here](#). For Contacts, click [here](#).>

The IFRC's Programme and Operations Division approved the Ecuadorian Red Cross's Early Action Protocol (EAP) for Ecuador: Volcanic Ashfall in April 2019 with a timeframe of five years and a budget of 246,586 Swiss francs, consisting of 140,660 Swiss francs for readiness and prepositioning and 105,926 Swiss francs for early action. Of the early action amount, the operation's expenditures were 84,672 Swiss francs. The remaining 21,245 Swiss francs will be returned to the Forecast-based Action (by the DREF). The EAP is funded from the IFRC's FbA (by the DREF) by which allocations are drawn on annual basis to cover readiness and pre-positioning costs and as a one off upon trigger to implement early actions.

The IFRC sincerely thanks ECHO for providing 50,000 US dollars at the beginning of the intervention (29 September 2020) to replenish the launch of actions with the activation of the EAP.

A. SITUATION ANALYSIS

Short description the Early Action Protocol

On 21 September 2020, the Ecuadorian Red Cross (ERC) activated its Early Action Protocol for volcanic ash in response to the significant increase in the level of eruptive activity of the Sangay volcano. The ERC, in coordination with the National Polytechnic School Geophysical Institute (IGEPN), analysed the potential scenarios and levels of impact based on information generated by several satellite images (GOES16 Satellite) and information issued by local institutions (decentralized autonomous governments-GADS, communities of Alausí, National Risk Management Service, Network of Volcano Observers). Ash dispersion models showed a high probability of ashfall in the provinces of Chimborazo and Bolívar, which triggered the EAP.



The ERC supported communities affected by the ashfall. Source: ERC

The Sangay volcano's eruptive process had been evolving since 7 May 2020. On 9 June 2020, the IGEPN issued a special warning and monitoring report identifying a potential eruptive event possibly involving the collapse of the lava front down the south-eastern flank of the volcano. The ash emissions generated during this event were pushed southwest by the strong winds, leading to ashfall in the following provinces (with their respective cantons): of Chimborazo (Alausí, Cebadas, Guamote, Chunchi, Riobamba); Bolívar (Guaranda, Chimbo, Echandía, Chillanes, Las Naves, Caluma); Guayas (Guayaquil, Milagro, Durán, Simón Bolívar, Bucay, Naranjito, Samborondón, San Jacinto de Yaguachi, Marcelino Maridueña, Juján, Daule, Nobol, Salitre, Gral. Vernaza, El Empalme); Santa Elena (Santa Elena, La Libertad, Salinas); Los Ríos (Ventanas, Valencia); and Morona Santiago (Morona).

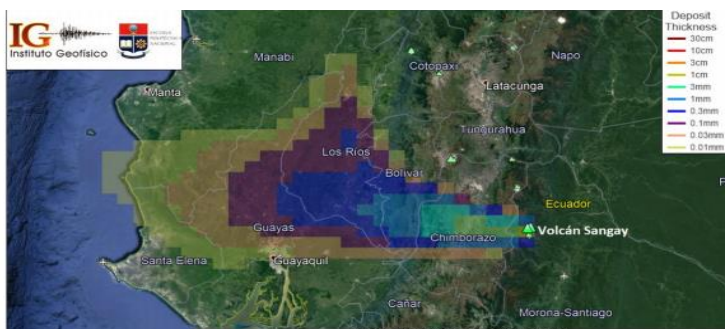
On 20 September 2020, the IGEPN reported a significant increase in the level of eruptive activity, indicating that, potentially, the most affected provinces would be Chimborazo and Bolívar, with ash accumulations bigger than 3 millimetres and 1 millimetre, respectively, which would be enough to affect agriculture (Figure 1).

According to the INEC-2010 population census, the potentially affected population is estimated as:

- 2 – 5 mm: 30.057 population
- 5 – 10 mm: 2.708 population
- 10 – 30 mm: 20.188 population

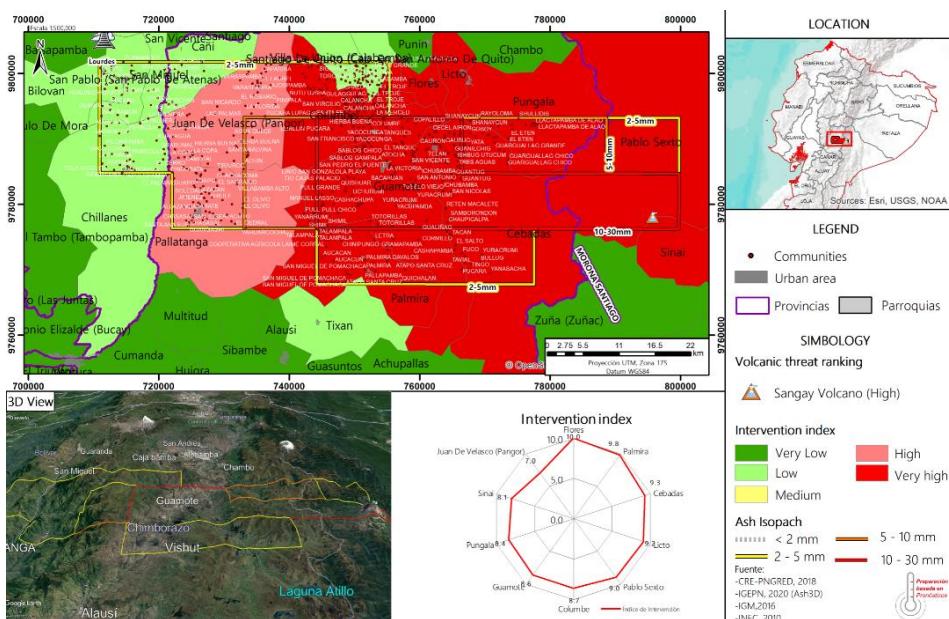
Figure 2 shows the intervention map, which was based on IGEPN analyses and information, making it possible to identify the areas with an intervention index of “Very High” (in red) according to risk analysis that took into account the vulnerability, responsiveness and exposure of each area. The map allowed analysing the ashfall isopachs, represented as quadrants detailing the expected thickness of ash in communities, and showed that 10 to 30 mm of ash were expected to fall in the area of Guamote, Cebadas and Palmira, 3 to 5 mm in the communities of Pallatanga, Juan de Velasco, Pungalá, and 2 to 5 mm in the communities of San Pablo de Atenas, San Miguel, Columbe and Chillanes Santiago de Quito.

Figure 1. Ashfall dispersion model of current Sangay activity showing the areas with the highest probability of ashfall.



Source: IGEPN, Special report Sangay

Figure 2. Intervention map for the Sangay volcano on 20 September 2020 at 10:44 am local time.



Source: ERC, Map created by the Ecuadorian Red Cross

Given this warning, the Ecuadorian Red Cross' National Risk Management Programme requested the IFRC to activate the Early Action Protocol for Volcanic Ash Dispersion, carrying out the following actions:

- Drawing up and socialization of the intervention map.
- Intervention map updates based on scenarios of the Sangay volcano activity process.
- Coordination between ERC national headquarters and the ERC Chimborazo provincial board for the implementation of actions.
- Socialization of the actions to be carried out under the Volcanic Ash EAP with National Society authorities and operational programmes.
- Arrangements for the distribution of health kits and livelihoods protection kits prepositioned in strategic warehouses (Quito, Tungurahua).
- Distribution of health protection household kit, containing 5 N95 masks, 5 protective goggles.
- Distribution of livelihoods protection kit, containing 1 tarp or plastic sheet and tools (shelter kit).
- Distribution and delivery of cash in a cash-based intervention (CBI).
- Mobilization of the ERC National Risk Management Programme technical team, Institutional Communications, IFRC staff from the Ecuador office to manage, support and monitor early actions in the field.

The EAP was activated within the context of the COVID-19 health emergency; therefore, the National Society immediately implemented basic protection and safety measures (provision of personal protection equipment- PPE including K95 face masks, as well dissemination of key biosafety messages) for volunteers, technical staff and communities, especially in the field.

Given this sanitary emergency, several budget lines were unable to be used. International missions were not possible and the travel costs for ERC volunteers to the field was much lower than expected as only staff and volunteers with insurance against COVID-19 were mobilized. Additionally, the lessons learned workshop was online, which had no costs. As will be mentioned below, physiological saline solution was not purchased since the pandemic needs made this item scarce in the country. It is for this reason, as mentioned above, that only 84,657 of the budgeted 105,926 Swiss francs for early action were executed.

Additionally, the ERC monitored areas outside of the area where the EAP was activated. The communities of Chillanes canton in Bolivar province were also affected by the eruption of the Sangay volcano. The water sources that supply more than 19 communities in the canton were contaminated, leaving residents without access to a safe water supply. In addition, crops in the area were exposed to substantial quantities of ash, which led to their destruction. As this area is highly reliant on income from agricultural products, this negatively impacted community members' livelihoods. As a result, on 6 October 2020, the ERC launched a separate DREF operation (Ecuador: Volcanic Eruption – [MDREC016](#)) as a complementary process to the general response of the ashfall caused by the eruption of the Sangay volcano. Both operations were implemented concurrently.

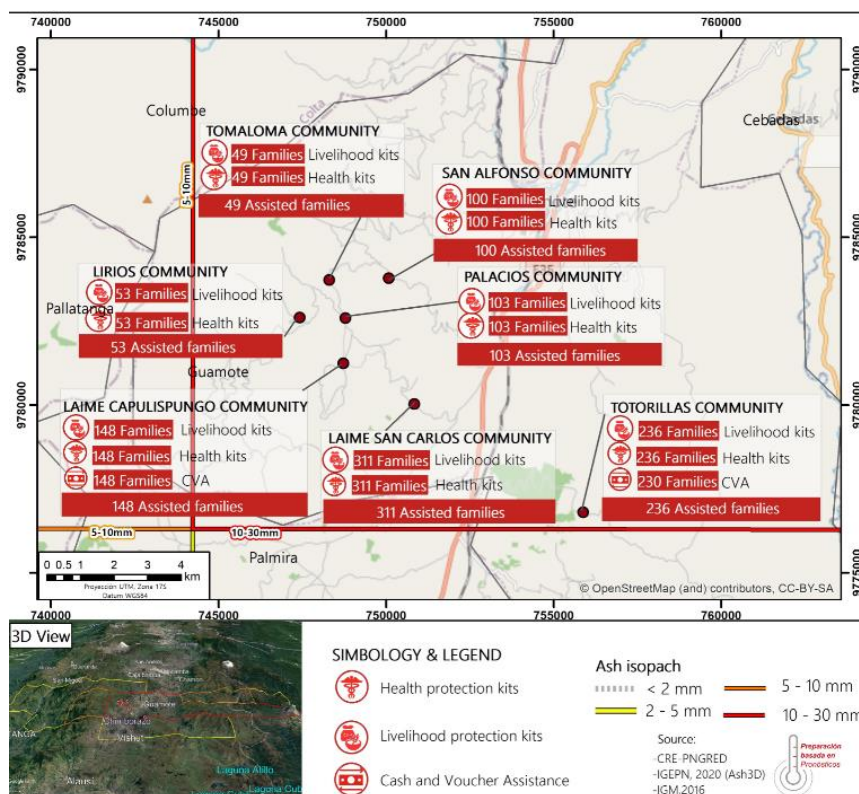
B. OPERATIONAL STRATEGY

Overall objective: Ensure the health and livelihoods of 5,000 people potentially affected by ashfall through the distribution of health protection kits, protection of livelihoods and cash-based interventions.

Implementation of the EAP

The 20 September report warned of an increase in volcanic activity and the potential impact to the provinces of Chimborazo and Bolívar, predicting ash accumulations >3 millimetres and >1 millimetre, respectively, which was enough to affect agriculture. An analysis was conducted to identify the area that would be targeted by the EAP. The intervention map corroborated that communities in Chimborazo experienced the greatest impact, where up to 10 mm of ash had been forecast. An IGEPN technical visit to the field validated this forecast and subsequently issued a technical report on the dispersion and sedimentation of ash associated with activity by the Sangay volcano.

Figure 3. Map of communities targeted by the EAP, September 2020.



The communities targeted for actions based on Special Report C were selected by crossing results from the risk element map and the ashfall forecast issued by the IGEPN in its Special Report N° 4 on Sangay Volcano (Report C). The communities with the highest scores that fell within the indicated polygon of between 10 to 30 mm of ash deposits according to the forecast were Guamote and Cebadas. The communities of Tomaloma, Lirios, Laime Capulispungo, Laime San Carlos, Palacios, San Alfonso and Totorillas in the Guamote canton (Figure 3), Chimborazo province were targeted, in accordance with the actions defined in the EAP. One of the most important characteristics of Guamote and of the target communities is the high percentage (94 per cent of the population) of persons of Kichwa nationality, most of whom speak primarily the Kichwa language. According to the 2016-2019 Land Development and Use Plan (PDYOT), Guamote has significant levels of poverty. One of the factors is related families' incomes and livelihoods, as most engage in agriculture, livestock production and animal husbandry.

Source: PNGRED- ERC EAP Volcanic Ashfall

The localities' agricultural and productive activities produce little income for the families, as agricultural systems are located in mountain moorlands (*páramos*) that are exposed to various risks such as volcanic ash (Tungurahua, Sangay), droughts, hailstorms, frost or winds. The biggest problem is the shortage of water, a situation confirmed by the semi-desert landscape seen during most of the year and corroborated by SINAGAP (2016), which places the canton among the areas with the greatest need for irrigation water in Ecuador. The land is not suited for agriculture, but nevertheless agriculture remains the main economic activity in these localities.

An assessment of the activation of the EAP in targeted communities identified that 70.8 per cent of people surveyed remembered having been affected by ashfall prior to 2020 - 45.8 per cent reported ashfall from Tungurahua and 35 per cent from Sangay. It was also mentioned that Guamote was affected by ashfall in 2006, an event that caused significant impacts to the population's health, crops and livestock.

The Development Plan (2015) indicates that the main crops in the canton are grass, potatoes, barley, beans, maize, oats, wheat and lupin beans. Potatoes and beans are planted in October, November and December and harvested in April, May and June, while maize is planted in November and December and harvested in May and June (six-month crop cycles). Therefore, the ashfall in June affected the bean, potato and maize harvest, while the ashfall in September did not affect crops, as these are not important months for agriculture.

Strategically, the livelihood kits and health kits were distributed from Tunguragua and Pichincha warehouses, and a technical team from the Ecuadorian Red Cross and the IFRC were mobilized to conduct the coordination for the delivery. These teams worked in the ERC Chimborazo provincial board. Additionally, a team of 10 volunteers were identified to help with the distribution and to help the families with the activation of the cards given as part of the CBI.

Targeting

The communities targeted were selected by crossing the results from the risk element map and the ashfall forecast issued by the IGEPN in its Special Report N° 4 on Sangay Volcano (Report C). The communities with the highest scores that fell within the indicated polygon of between 10 to 30 mm of ash deposits according to the forecast were Guamote and Cebadas. The communities of Tomaloma, Lirios, Laime Capulispungo, Laime San Carlos, Palacios, San Alfonso and Totorillas in the Guamote canton, Chimborazo province were targeted, in accordance with the actions defined in the EAP.

The risk map, Report C and results from the field visit were very important for the selection process for the Cash-Based Intervention. Two out of the seven communities were selected for the CBI: Totorillas and Capulispungo. Once the locations had been selected, interviews were conducted together with community leaders and information was cross checked. The leaders also helped with organizing the residents to deliver the pre-paid Visa cards for the cash transfer, always complying with biosecurity and social distancing regulations.

Per the EAP, the following beneficiary identification criteria were applied:

- Vulnerable families, with incomes below 380 US dollars
- Families whose main livelihoods are agriculture and livestock.
- Families affected by ashfall (which the forecast indicated would exceed the 10-mm threshold).
- Families in especially vulnerable situations (female-headed households, older adults, people with less formal education, etc.).

Early action activities implemented

The implementation and activation mechanism contemplated three moments established in the EAP:

- Implementation of Awareness Plan by the provincial board, carried out in June in communities in Cebadas and in Guamote canton. These activities were funded by ERC national headquarters.
- Distribution of livelihoods and health kits and implementation of the cash transfer programme based on Special Report C (EAP trigger). This was funded through the Ash Dispersion EAP.
- Monitoring and evaluation of the activation of protocols and implementation of early actions, a process during which factors to be analysed and included in the revised EAP were identified.

According to an analysis based on a forecast of up to 10 mm of ashfall - data evaluated based on an IGEPN report on ash dispersion and sedimentation that indicates that the amount of ash deposit was less than or equal to 1 mm - the ash was highly toxic and easily airborne, which facilitated its dispersion. Based on the needs identified in the communities, delivering a livelihoods protection kit and the cash-based intervention were considered important.

The kits and cash transfers were delivered on:

- Distribution of health and livelihoods kits (Days 2 and 3, 48 to 72 hours)
- Delivery of cash transfer (as of Day 3, 72 hours)

The early actions in the ash EAP were proposed based on the impact caused by ashfall during past volcanic events in the country. Direct advice from and communication with IGEPN technical staff, the field visits and having direct contact with residents who had been affected by volcanic ash in the past were essential for deciding on the early actions to be implemented in the EAP.

Awareness-raising Activities

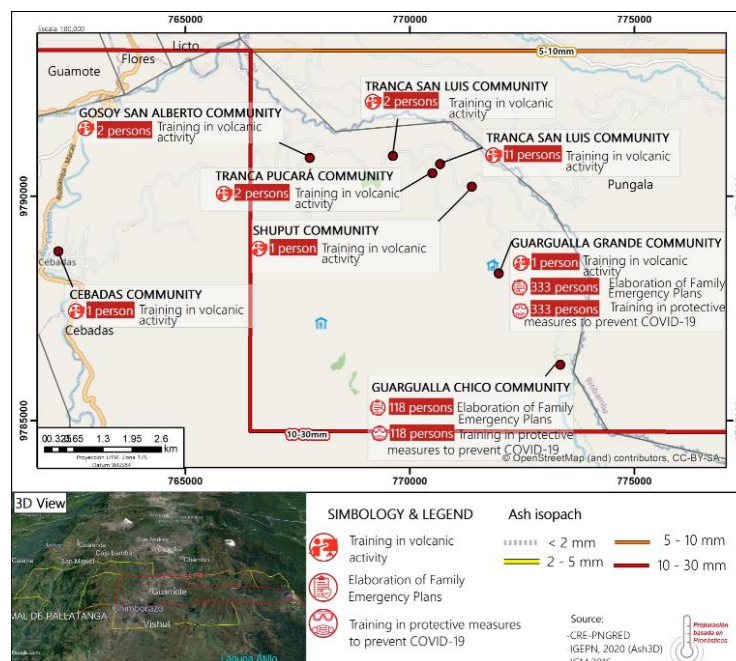
Following the guidelines of Report A, as part of sensitization processes, ERC national headquarters, in coordination with the Chimborazo provincial board, developed and implemented the Community Awareness Plan from 22 June to 12 July 2020. This process included work on self-protection measures in the event of ashfall and dispersion and COVID-19, using tools and a practical methodology that allowed capacity-building implementation and -strengthening actions in each location. This activity was funded by ERC national headquarters. A total of 150 families in eight communities in Cebadas, Guamote, Chimborazo participated in these activities (Figure 4). These activities were conducted to prepare in the event of ashfall. Although these activities helped to be better prepared for the project implementation, they were not part of the project itself. Among the main activities were the following:

- Trained 47 volunteers from the Chimborazo provincial board on volcanic activity, volcanic monitoring implements (ashmetres), personal protection equipment against ashfall and COVID-19.
- Trained eight community leaders from Cebadas Canton parish on volcanic activity, volcanic monitoring implements (ashmetres).
- Installation of ashmetres.
- Training on self-care measures for ashfall and COVID-19 and on personal hygiene.
- Conducted, using ODK, family census in the two communities closest to the Sangay volcano.
- Analysed the water quality in eight communities in Cebadas canton.

Training processes on prevention measures for ashfall and COVID-19 directly targeted 87 families (333 people) in Guargualla Grande and 36 families (118 people) in Guargualla Chico through home visits. Liquid soap was provided to families during home visits, complementing the talk on hygiene and care related to COVID-19. The training process for both volunteers and communities was carried out face to face, adhering to distancing, safety and hygiene measures. In addition, the quality of the water from water sources in eight communities was analysed, in coordination with community presidents and those responsible for the water system in each community.

Eight ashmetres were installed in eight communities. These were left in the care of the president of each community and are linked to a group of local volcano observers. An ashmetre was also installed in Alausí canton, which was also left in the care of the president of the canton board.

Figure 4. Map of target communities. Awareness Plan June 2020



Source: PNGRED- ERC Ashfall EAP



Photo 1. Preparation of Family Emergency Plans, ERC



Photo 2. Analysis of water sources and water catchment sites, ERC



Photo 3. Training in communities (self-protection measures ashmetres), ERC



Photo 4. Installation of ashmetres, ERC

Prepositioning Activities

Following the guidelines of Report A, the health and livelihoods kits had been prepositioned in strategic warehouses in Ambato (Tungurahua province) and Quito (Pichincha province), which facilitated their transport to the Chimborazo provincial board for assembly. This reduced the delivery time to affected communities.

The health kit did not include physiological saline solution, as it has been difficult to find in Ecuador due to the pandemic and has a short expiration date.



Photo 5. Prepositioned kits in warehouse in Quito, ERC



Photo 6. Prepositioned kits in Ambato, ERC

Impact evaluation

During the last week of December, the German Red Cross conducted an evaluation based on a survey aimed to identify the impact of the project in the communities served and to improve future operations via lessons learned. This survey was conducted in the 7 communities where the project was implemented (Tomaloma, Lirios, Laime Capulispungo, Laime San Carlos, Palacios, San Alfonso and Totorillas); 150 people completed the survey and the Ecuadorian Red Cross supported this process with 2 volunteers that guided the external team responsible for collecting the information.

Health protection kit. - According to interviews and surveys in the field, the health kits were used to clean up the ash, protect against COVID-19 and protect against dust during farming tasks. The leader of Laime San Carlos emphasized that the masks were the most useful. They expressed that they found the goggles less useful in a daily basis as a

result of working outside and not being used to them, but they did use them to work outdoors to protect against the wind, during fumigations and specifically as a work tool.

Livelihoods protection kit. - According to community leaders, the livelihoods kit (tools and tarp) was used to build shelters for livestock or crops. They agreed that the livelihood kits helped to improve production and community work, as explained by two of the leaders, pointing out that it helped during *mingas* (type of community work in which all residents participate for the common good) to provide maintenance related to drinking water, road repairs (Laime - San Carlos) and changing light poles (Tiocajas Tomaloma). According to respondents, 98 per cent were used to build shelters for livestock or crops.

Delivery of CBI. - Regarding CBI delivery in the communities of Totorillas and Capulispungo, community leaders expressed that the cash enabled people to buy seed, grass (to recover that lost due to the ashfall) and prevented people to having to sell their livestock. The financial assistance helped to recover, preserve and strengthen livelihoods, specifically crops and animals.

Table 1: Use of CBI in Totorillas and Capulispungo

What was the money used for?	Totorillas	Capulispungo	Remarks
Feed for large and small livestock	79%	78%	Buy salt for cattle
Transport of large and small livestock	The communities raise small livestock, such as guinea pigs and poultry, and medium-sized animals such as pigs and sheep. The impact caused by the 1 mm of ash, as verified by the geophysicist on 24 September 2020, did not require the animals to be evacuated.		
Medicines for livestock	58.6%	21.05%	Vitamins and antibiotics
Buying new animals	62.1%	47%	Sheep, chickens, pigs, calf
Leasing grazing land	6.9%	0%	
Purchase of seed and fertilizer	62.1%	68.4%	For agriculture in sowing months
Food for families	79.3%	78.9%	Community families' main need
Education - children, youth	17.24%	0%	Purchase of materials.

Source: ERC- Ash EAP Assessment 2020

The evaluation and monitoring processes, as well as the systematization and socialization of lessons learned, were conducted in November and December. The lesson learned summary report and the community evaluation report collected information on the two implementation phases of the EAP in June and September 2020, which will later be considered for inclusion in the EAP update process.

Analysis of early actions

The early actions made a difference by reducing the adverse impacts on their lives, health, property, physical assets and productive capacity.

The delivery of the health and livelihoods protection kits and the CBI were among the main actions that contributed to and benefitted the communities. The kits were helpful to families, not only for this event, but for communities affected by frost and drought.

The supplies contained in the health kit enabled them to protect their health from the ashfall and COVID-19, specifically the masks. The goggles were used as protection when working, especially in the fields. The tool kit and the tarp were used to protect and care for their livelihoods (seed, crops, small and large livestock). The tarp was specifically used to build or reinforce their animals' shelters, in some cases due to the impact caused by strong, hurricane-like winds that

affected roofs in May. Most people did not evacuate their livestock because the water and production restrictions in these areas lead families to engage in raising small animals (guinea pigs, rabbits, chickens).

The families who received financial assistance used the money to buy feed for their animals, food for their family, and purchase seed and livestock. One special case identified by the assessment team was the purchase of a hat stamping machine and inventory for a small community store, which allowed strengthening economic systems that are not traditional in the area (agricultural).

Table 2: Impact of the early action protocol

Ash deposit threshold (mm)	Expected impact according to the EAP	Impact in September 2020	Early action implemented	Outcome of the early action
2 - 5 mm	Crops: Harvest interrupted	Most families in targeted communities reported that crops were affected.	CBI distribution Distribution of livelihoods kits Health kit distribution	Between 62% and 68% of respondents used the CBI to purchase seed and fertilizer. Over 98% of respondents used the livelihoods kit to build animal or crop shelters
	Water and livestock: contaminated water sources, limited forage and crops interrupted	Most families in the communities reported that the grass was affected. More than 80% of respondents reported that water sources were affected (change in taste and with sediment). More than 80% indicated that small, medium and large animals were affected by ashfall (illness and deaths were reported)	CBI distribution Distribution of livelihoods kits	Between 78% and 79% of respondents used the CBI to buy feed for their animals Over 98% of respondents used their livelihoods kit to build animal or crop shelters
	People: Mild effects to eyes and respiratory tract	More than 86% of respondents reported that their health and that of their family had been affected. Respiratory tract and eyes affected, coughs and headaches reported, among others.	Distribution of health kits	More than 98% of respondents reported that the health kit, especially the masks, was useful for protecting against ash and COVID-19

Source: ERC



Photo 7. CBI delivery in Capulispungo, ERC



Photo 8. Delivery of health protection kit, ERC



Photo 9. People reached in the community of Laimes San Carlos, ERC



Photo 10. Coordination for kit and CBI deliveries, ERC

Effectiveness of early actions and measures

Distributing health and livelihoods protection kits, as well as disseminating key messages on self-protection measures, contributes to strengthening communities in the face of dangerous events that occur in and affect these communities. During post-distribution monitoring and evaluation, families were observed using the supplies provided to protect against COVID-19 and using the tarps and tool kits to build shelters for animals and crops to protect them from the frequent frosts and droughts. As expressed by a community leader from Capulispungo, the tool kit and the tarp can be used to protect from volcanic ashfall not only from Sangay but also from the Tungurahua volcano.

Institutional activities and with other actors

The joint work of the International Federation Red Cross, Ecuadorian Red Cross, the Regional FbF Team from the German Red Cross and the IGEPN for the approval and activation of the Ash EAP - who helped with the analysis of the forecasts and potential scenarios in terms of the level of impact from the fall and dispersion of ash-; and the direct communications with the IGEPN and the network of volcano observers (made up of volunteers from provincial boards across the country) allowed the National Society to learn about the ashfall's impact in Chimborazo and Bolívar in real time, as well as in other areas such as Guayas and Manabi.

The National Risk Management Service was aware of the role performed by the National Society; however, institutions at the local level prioritized COVID-19-related actions carried out in the communities, allowing the Red Cross to implement actions in the communities affected by ash. Establishing coordination with the leaders of communities targeted by the EAP allowed access and acceptance, which facilitated the National Society's work in each action implemented for the activation in a COVID-19 context.

Challenges and lessons learned

Challenges

The process to monitor actions implemented during the Ash EAP's activation phase also includes documenting the challenges, experiences, knowledge and practices that were generated in communities in Guamate, Chimborazo during the reactivation of the Sangay volcano. The goal is to optimize humanitarian aid with support from geographic information systems (GIS) so as to generate criteria that are based on science. To document the challenges and lessons learned from each action and activity implemented, from the institutional to the community level, it was important to work while considering different levels and actors.

Main challenges:

- A limited budget did not allow the project to reach nearby communities that were similarly impacted by the ashfall, such as communities in Cebadas Canton.

- Social distancing measures, the use of masks, registration, etc. in the implementation of community actions in a COVID-19 context increased the work time of volunteers from 8 to between 10 to 13 hours a day. This required 40% more volunteers (from 7 to 10) helping with the project implementation and the time distribution of health kits was extended from 48 to 72 hours.
- The interpretation of scientific information and forecasts for decision making was a challenge. Analysing the information from the models and special reports required getting technical advice, through calls, from the IGEPN technical team for correct interpretation and use of said information, as well as listening to scientific criteria from the volcanic explosivity index that they used to develop the model on 20 September 2020.
- Transport of health and livelihoods protection kits to the communities as a result of COVID-19 measures adopted by each community, needed an extra step of coordination made by the Chimborazo provincial board and community leaders who facilitated access to and working with the communities.
- According to assessment results, the sensitization process helped communities to strengthen their knowledge regarding volcanic activity and its impact. However, most of the communities are composed of Kichwa speakers, and the information was only available in Spanish. As a result, community leaders helped with the translation/interpretation of the messages, which make the process slower.

Lessons Learned

This section presents the main results obtained from the identification, systematization and socialization of lessons learned from the achievements, good practices and key recommendations, as well as aspects to improve.

The following phases were worked on to analyse and gather information on the lessons learned:

- Phase 1: Identification of challenges, weaknesses, issues.
- Phase 2. Strengths, good practices and main positive actions.
- Phase 3. Identification of lessons learned
- Phase 4. Recommendations

The overall methodological approach to identify lessons learned was carried out through surveys with open and closed questions for volunteers, representatives and technical staff from the IFRC, ERC and IGEPN, using the Google form online survey system, as well as four work sessions over the Zoom platform and Google's virtual whiteboard Jamboard. A total of 59 people participated in these sessions.

Considering the COVID-19 context, the process was done virtually. Only community leaders were interviewed face to face, always observing biosafety standards and protocols. The virtual sessions and interviews with eight community leaders were conducted in November 2020. The lessons learned by the group were:

➤ Regional

- It is defined that activating the EAP only requires: Type C report issued by the IGEPN, an ashfall forecast and dispersion map, a situation report, and an EAP activation request form for the IFRC.
- When preparing the EAP, permanent communications with and have support from the institute responsible for monitoring volcanoes in each country are required from the very beginning to have the same technical criteria and be able to properly interpret the scientific information bulletins.
- The National Society should establish and maintain permanent communication with the institutes responsible for monitoring volcanoes in order to have similar technical criteria.

➤ Institutional

- The EAP must differentiate and be clear about the volcanoes that are erupting and those that are not. A mechanism with type A, B and C reports will more likely be used with a volcano that is NOT erupting. Unlike a volcano that is erupting, there are no clear foreshocks and there can be a direct activation with a type C report.
- In addition to the stop mechanism, it is important to include an adjustment mechanism that incorporates post-activation information so as to have an adjustment map that allows a more solid forecast.

- While the concept of the EAP is to use a mechanism that allows for action, as much as possible, before the impact, in the case of the Sangay volcano activation, the lead time established by Report C was 24 hours, which could be modified to one with a range of 3 to 24 hours.
- CBI delivery should be improved by having the target population complete information and card numbers if the distribution mechanism requires so. The preferred mechanism, when linked to local providers such as Banco Pichincha or Produbanco, reduces costs and is more widely accepted by the target population.
- Having ERC territorial network personnel trained in CBI so that they can implement it and not have to depend on a small group that may be busy with other interventions.
- Improve arrangements with suppliers by having a database of identified suppliers for the kits who carry and are able to replenish stocks.
- Each eruption adds to the knowledge regarding eruptive processes and ash dispersion; the ERC must keep up to date on their impacts.
- Improve inter-institutional work with other key partners besides the IGEPN EPN, such as the Risk Management Service, INHAMI, etc.

➤ Community

- Prior to delivering kits or CBI, carry out training or awareness-raising processes in communities regarding the criteria and parameters that will be used to allocate the humanitarian aid, emphasizing vulnerability criteria.
- Very few people in rural areas use masks, so a brief training could be provided on how to use the materials included in the health and the livelihoods protection kits. Consider delivering health kits to other areas that, while expected to experience less ashfall according to the forecast, will still experience negative health impacts.
- One-hour notice to community leaders through the area the provincial board with the zone coordinator to identify affected sectors and respective leaders.
- The work carried out during the awareness-raising phase in communities allowed building a database of contacts, as well as providing psychological relief to people prior to an adverse event.
- It is necessary to work on positioning ERC as an independent humanitarian organization that performs an auxiliary role with authorities, as some community members believe that ERC is a state institution.
- Educational efforts with a community-based focus should be conducted at the community level to avoid myths, as earth sciences are addressed and taught very little in basic education. Myths include, for example, that the instruments used to monitor the volcano cause infertility, cancer or kill livestock.



Photos 11 and 12. Information gathering with community leaders (lessons learned), ERC

Photo 13. Using tarps to protect small livestock, ERC

EAP Model

The EAP was designed under the assumption that previous geophysical forecasts would indicate the appropriate signals to preposition humanitarian assistance; that there would be an accurate numerical model in terms of direction and amount for ash emissions, and that roads would allow easy access to the communities. The sequence of the triggers (Special Reports A and B) was partially issued because the volcano generates eruptive processes with an open conduit (decreases the probability of foreshocks or a sudden increase in activity).

The models for defined impact thresholds (millimetres of ash deposit) to implement early actions, however, are subject to uncertainties. In this case, in September, the numerical model had over-estimated ash thickness. Therefore, one of the most important findings from the assessment process and lessons learned for future updates to the EAP regarding forecasts is that it is necessary to have greater flexibility in Volcanic Explosivity Index (VEI) criteria to activate an EAP and complement them with scenarios of impact to the population, for example, to health, livelihoods, agriculture, etc., as well as consider not only the load and thickness but also the characteristics of the ash, such as granulometry or other evidence.

Table 3: Assessment of triggers and of actions to implement the EAP

Trigger	Report content according to EAP	Report content	Early action proposed	Early action implemented
Special Report A (volcanic disturbance)	Probabilistic analysis VEI 3 (50%)	Reports issued in June announcing a significant change in the volcano	Deploy provincial board volunteers previously trained to implement the Awareness Plan and report the threat to communities exposed to ashfall and discuss self-protection measures.	Community awareness actions were carried out in June 2020 in communities in Cebadas canton. Key messages and others on proper use of kit implements and supplies were disseminated as part of the activation process in September 2020.
Special Report B (increased activity)	Forecasting a VEI 3 report with Ash3D / Fall3D	No report was generated	Volunteers and vehicles on standby (lead time +/- 7 days)	Awareness plan actions carried out were socialized.
Special Report C (height of ash column)	Ash3D / Fall3D forecast of ashfall dispersion in VEI 3 or higher	Generated on 20 September 2020, the eruption VEI was 2	Deployment and distribution in the field (3 days, between 48 and 71 hours)	All operational actions planned as part of the EAP's activation were carried out as of the release of the 20 September report approving the activation. The early actions planned to be carried out in the field were carried out in response to this trigger.

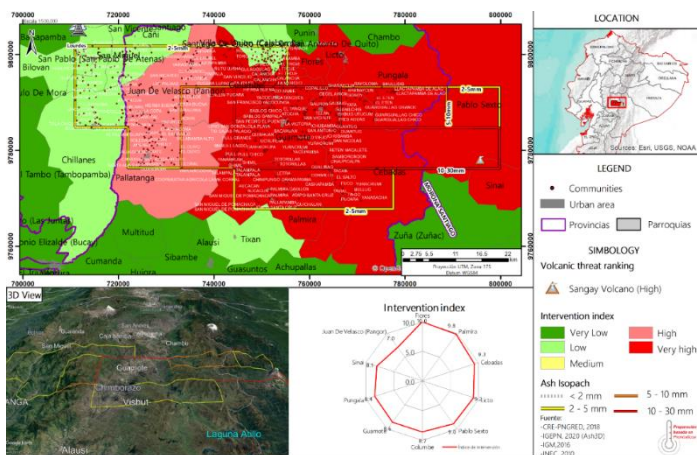
Source: ERC - Ash EAP Assessment 2020

Monitoring from the moment the trigger was reached until the completion of early actions

The monitoring of the EAP's implementation was carried out based on the following process:

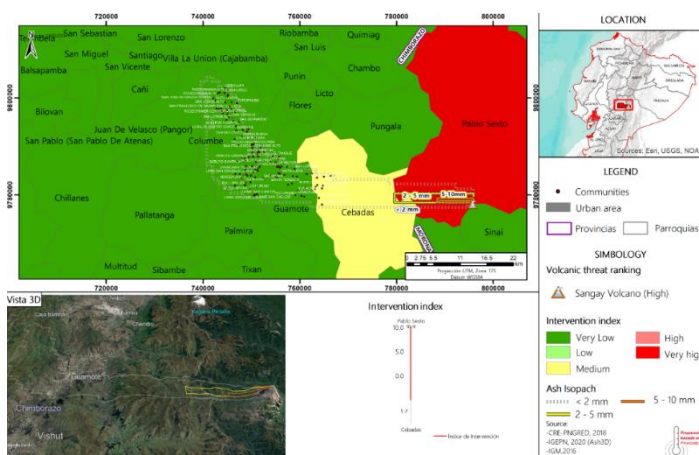
- As of the EAP's activation on 20 September 2020, the National Risk Management Programme, with IFRC and the regional FbF team's support and advice, assisted with the implementation, tracking and monitoring of the actions, especially those carried out in the field.
- The technical information received was analysed and interpreted for decision-making and technical support to the implementation of early actions. As for threat monitoring, the IGEPN sends daily ash dispersion models to the ERC. On 20 September, the ERC received special report N04 -2020 regarding the Sangay Volcano corresponding to the EAP's trigger C. On the following days the ERC received updated models with a marked difference in estimations. The intervention maps were monitored and updated accordingly (Figures 5, 6,7 y 8).

Figure 5. Intervention Map with the ASH3D (IGEPN) model dated 20 September 2020, ERC



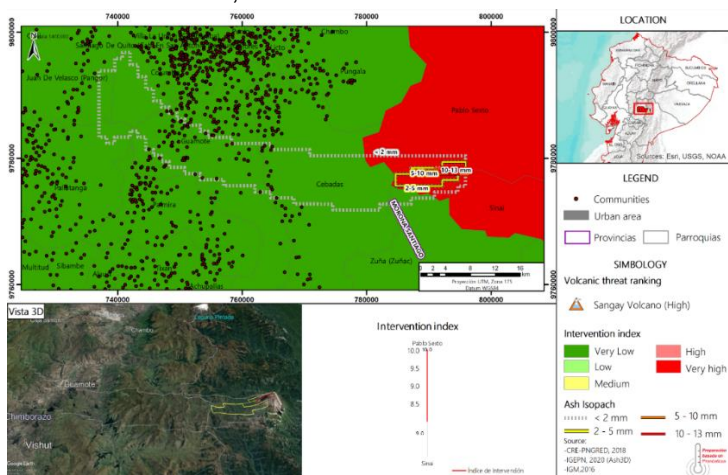
Source: ERC

Figure 6. Intervention Map with the ASH3D (IGEPN) model dated 21 September 2020



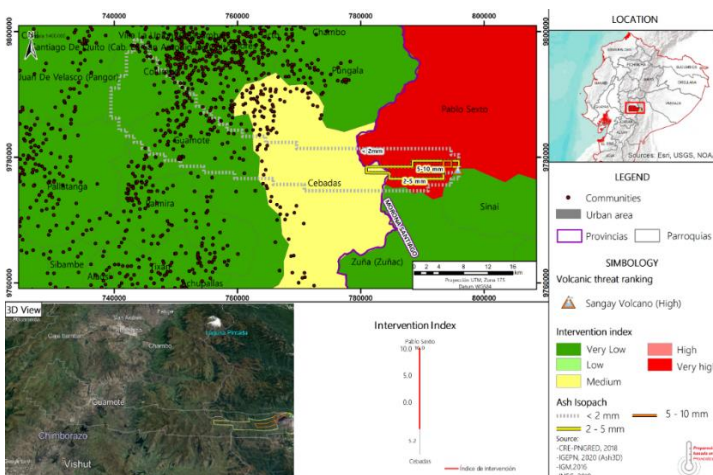
Source: ERC

Figure 7. Intervention Map with the ASH3D (IGEPN) model dated 22/09/2020, ERC



Source: ERC

Figure 8. Intervention Map with the ASH3D (IGEPN) model dated 23/09/2020, ERC



Source: ERC

- Monitoring of humanitarian aid distributed and aid impact survey to the target population. As part of the information gathering process for the identification and systematization of lessons learned, the use of health and livelihoods protection kits was verified per the information provided by community leaders. These leaders expressed that the tool kit and tarps were helpful for dealing with the ashfall and would come in handy for other events that affect these areas (frosts, droughts).
- Narrative report. During the implementation of the EAP, two technical reports were generated in which the actions carried out to implement both the awareness plan and the Ash EAP activation are systematized.
- Lessons learned. Through various experiences and reflection and critical analysis of actions at the community, institutional and regional level that are part of the process of gathering and documenting the knowledge generated during the activation process, it was possible to identify at each stage the improvements and considerations for updating the EAP. This process was supported by the National Society's planning and innovation areas.
- EAP review and updating. To update the EAP, the National Risk Management Programme identified the key elements to establish a roadmap that allowed adequate work to be carried out in the update phase, considering scientific, technical, operational and community factors.

C. DETAILED OPERATIONAL PLAN



Livelihoods and basic needs

People reached: 5,000 people

Male: 2,400

Female: 2,600

Livelihoods and basic needs Outcome 1: Communities, especially in areas at risk of falling ash, protect their livelihoods

Indicators:		Target	Actual
Families ensure their livelihoods in the event of potential impact from ashfall through the delivery of shelter kits to protect their livelihoods.		1,000	1,000
Families in communities affected by ashfall receive financial assistance to help meet priority needs (CBI)		378	378
Output 1.1: Basic needs assistance for livelihoods security, including food, is provided to the most affected communities.			
Indicators:		Target	Actual
The most affected communities receive basic needs assistance for livelihoods security, including food			
1,000 families receive materials to protect agricultural activities		1,000	1,000
378 families receive financial assistance to help meet priority needs (based on selection criteria, priority care)		378	378
P&B Output Code	Activities planned	Completed activities	
AP005	Beneficiary selection based on vulnerability and impact criteria related to ashfall greater than 10mm (first 4 days after activation)	Beneficiary selection based on vulnerability and impact criteria related to ashfall greater than 10mm according to model issued by Ecuador's IGEPN (Day 3 of activation). The selected population was validated in conjunction with community leaders, to confirm the impact and vulnerability of each.	

AP005	Distribution of materials and tools to protect agricultural activities (toolkit, tarp) (First 4 days after activation)	<p>Materials and tools to protect agricultural activities (toolkit, tarp) were distributed as of Day 2 of activation. Distribution occurred within 4 days of the triggering event. (In September 2020, the kits were delivered after the ashfall, exceeding 72 hours).</p> <table border="1" data-bbox="1227 236 2063 580"> <thead> <tr> <th>Community</th> <th>Families</th> <th>Livelihoods Kit</th> </tr> </thead> <tbody> <tr> <td>Totorillas</td> <td>236</td> <td>236</td> </tr> <tr> <td>Laines Capulispungo</td> <td>148</td> <td>148</td> </tr> <tr> <td>Laines San Carlos</td> <td>311</td> <td>311</td> </tr> <tr> <td>Palacios</td> <td>103</td> <td>103</td> </tr> <tr> <td>San Alfonso</td> <td>100</td> <td>100</td> </tr> <tr> <td>Tomaloma</td> <td>49</td> <td>49</td> </tr> <tr> <td>Lirios</td> <td>53</td> <td>53</td> </tr> <tr> <td>TOTAL</td> <td>1,000</td> <td>1,000</td> </tr> </tbody> </table>	Community	Families	Livelihoods Kit	Totorillas	236	236	Laines Capulispungo	148	148	Laines San Carlos	311	311	Palacios	103	103	San Alfonso	100	100	Tomaloma	49	49	Lirios	53	53	TOTAL	1,000	1,000
Community	Families	Livelihoods Kit																											
Totorillas	236	236																											
Laines Capulispungo	148	148																											
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Palacios	103	103																											
San Alfonso	100	100																											
Tomaloma	49	49																											
Lirios	53	53																											
TOTAL	1,000	1,000																											
AP081	Prepositioning of IFRC Visa debit cards (first three days after activation)	The VISA cards IFRC prepositioned at the National Society were used for the EAP's activation.																											
AP081	CBI distribution to 378 affected families/households, a multipurpose unconditional cash grant (200 USD) (first 4 days after activation)	<p>The CBI distribution to 378 families from two communities was carried out as of Day 3 of activation. Provincial board volunteers assisted the residents who did not know how to use the ATMs from 30 September to 1 October.</p> <table border="1" data-bbox="1216 799 2078 1094"> <thead> <tr> <th colspan="4">Summary of cash distribution</th> </tr> <tr> <th>Community</th> <th>Date of distribution</th> <th>Number</th> <th>Amount (USD)</th> </tr> </thead> <tbody> <tr> <td>Laime Capulispungo</td> <td>23 September 2020</td> <td>138</td> <td>27,600</td> </tr> <tr> <td rowspan="2">Totorillas</td> <td>23 September 2020</td> <td>164</td> <td>32,800</td> </tr> <tr> <td>24 September 2020</td> <td>76</td> <td>15,200</td> </tr> <tr> <td colspan="2">TOTAL</td> <td>378</td> <td>75,600</td> </tr> </tbody> </table>	Summary of cash distribution				Community	Date of distribution	Number	Amount (USD)	Laime Capulispungo	23 September 2020	138	27,600	Totorillas	23 September 2020	164	32,800	24 September 2020	76	15,200	TOTAL		378	75,600				
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Narrative description of achievements																													
<p>Measuring fulfilment of and satisfaction with the implementation of the early actions, as well as of achievements against what was proposed, required having the information collected during the implementation of the lessons learned workshops and evaluation of the EAP's implementation. The goal was to provide care at the canton level, during which 1,000 at-risk families (from 5 mm) were reached. The livelihood protection kit, the health kit and the CBI were delivered after 72 hours.</p>																													

Target fulfilment / EAP early action assumption		
Ash EAP proposal (trigger special report C)	Results achieved	Target fulfilment
Distribution of livelihoods protection kit (4 x 6-m plastic tarp and a tool kit)	1,000 livelihoods protection kits were delivered in seven communities in Guamote canton. The kits contained one 4 x 6-m tarp and a tool kit (shovel, hoe, hammer, nails, pickaxe, machete, rope, etc.). The kits were delivered from 22-26 September 2020 (tarps were delivered in Capulispongo on 26 September 2020) The delivery was accompanied by a socialization process on use and importance of the kit.	<p>In terms of space and number: 100% (1.000) of kits were delivered in seven communities in Guamote canton.</p> <p>In terms of kit elements: 100% of materials and tools delivered to the target population, indicating their use to address the ashfall.</p> <p>In terms of time: The livelihoods protection kits were distributed between Day 2 and Day 4, as distribution requires support from community leaders and a prior evaluation to carry out the distribution in a COVID-19 context, observing basic safety protocols for communities and technical staff.</p> <p>In terms of amount of ash expected: 100%, as the eruptive process in September 2020 produced 2 - 5 mm of ash.</p>

According to evaluations in targeted communities, more than 98 per cent of people used the tools to build shelters for their livestock or crops; therefore, the goal of caring for and preserving their livelihoods was met (small livestock, animal feed, crops and seeds).



Photos 18 and 19. Distribution of tool kits in the communities of Capulispongo and Lames San Carlos

A video of the distribution of livelihoods and health kits in targeted communities can be viewed at <https://www.youtube.com/watch?v=ANJp0yikOA4>

Target fulfilment / EAP early action assumption

Ash EAP proposal (trigger special report C)	Results achieved	Target fulfilment																														
<p>Delivery of CBI</p>	<p>378 cards, as part of the cash-based interventions, were delivered:</p> <table border="1" data-bbox="560 414 1079 598"> <thead> <tr> <th>Sex</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Female</td> <td>152</td> </tr> <tr> <td>Male</td> <td>226</td> </tr> <tr> <td>TOTAL</td> <td>378</td> </tr> </tbody> </table> <p>Three local volunteers, one technician from national headquarters and two PM specialists (one at national headquarters and one in the field) helped with programme implementation.</p> <p>Per recommendation of the IFRC, the VISA cards already prepositioned at the National Society were used.</p>	Sex	Number	Female	152	Male	226	TOTAL	378	<p>According to the census, 230 families were identified in the community of Totorillas and 148 families in Laime Capulispungo. 378 cards with a debit amount of 200 US dollars were distributed. Each card entailed 10 US dollars surcharge for administration and activation fees. Distributions were carried out in groups of 15 people so as to observe physical distancing protocols. People also received information on how to use ATMs and suggestions on what they should invest the money (transport, feed for livestock and to meet basic needs). 8 volunteers helped the people to activate the cards and to obtain money from the ATM. Community leaders also helped to organize transportation of selected families from their communities to Riobamba.</p> <table border="1" data-bbox="1124 699 2116 957"> <thead> <tr> <th colspan="4">Summary of cash distribution</th> </tr> <tr> <th>Community</th> <th>Date of distribution</th> <th>Number</th> <th>Amount (USD)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Laime Capulispungo</td> <td>23 September 2020</td> <td>138</td> <td>27,600</td> </tr> <tr> <td>23 September 2020</td> <td>164</td> <td>32,800</td> </tr> <tr> <td rowspan="2">Totorillas</td> <td>24 September 2020</td> <td>76</td> <td>15,200</td> </tr> <tr> <td>TOTAL</td> <td>378</td> <td>75,600</td> </tr> </tbody> </table> <p>Tests had to be carried out at different ATMs to verify activation because of the change in VISA card providers as the new provider requested different actions to be taken in order to activate the cards. The test was conducted with 20 families selected randomly who were asked to go Riobamba (closest large city with ATM access). The test lasted 2 days, as there were some issues with activating the cards and obtaining the money from the ATMs. These issues were resolved with support from community leaders and the Chimborazo provincial board.</p> <p>In terms of time - The CBI (IFRC cards) delivery was carried out on 23 ad 24 September, and Chimborazo provincial board volunteers helped the target population to use their cards on 30 September and 1 October.</p>	Summary of cash distribution				Community	Date of distribution	Number	Amount (USD)	Laime Capulispungo	23 September 2020	138	27,600	23 September 2020	164	32,800	Totorillas	24 September 2020	76	15,200	TOTAL	378	75,600
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Photos 20, 21 and 22. CBI delivery in Capulispungo and Totorillas.

A video of the CBI delivery in Capulispungo and Totorillas can be viewed at <https://youtu.be/dpJUOTfoTUU>



Health

People reached: 5,000

Male: 2,400

Female: 2,600

Health Outcome 1: The immediate risks to the health of affected populations are reduced		
Indicators:	Target	Actual
Families reached through health actions	1,000	1,000
Output 1.1: Personal protection supplies are provided to the at-risk population to reduce the effects of injuries and illnesses from volcanic ashfall.		
Indicators:	Target	Actual
Families who receive health protection supplies	1,000	1,000

P&B Output Code	Activities planned	Completed activities
AP011	Purchase of saline solution. (first four days after the trigger)	The physiological saline solution was not purchased because suppliers did not have enough stock available to ensure that it could be purchased and distributed within the timeframe established by the EAP. This product has been in high demand due to the COVID-19 context.
AP022	Distribution of saline solution (first four days after the trigger)	

Narrative description of achievements

Target fulfilment / EAP early action assumption

Ash EAP proposal (trigger special report C)	Results achieved	Target fulfilment																																							
Distribution of health kit: 5 N95 masks (2 for adults and 3 for children), protective goggles (2 for adults and 3 for children), saline solution, jute bag and sensitization on the use of the materials delivered and self-protection measures.	<p>1000 health kits were delivered in seven communities in La Matriz canton, Guamate. The health kits contained 5 N95 masks and 5 protective goggles and a waterproof bag.</p> <p>The delivery was accompanied by socialization on the use and importance of the kit.</p> <p>The saline solution was not included because suppliers did not have enough stock and due to budget constraints</p> <p>The kits were delivered on 22 to 24 September 2020.</p>	<p>In terms of space and number: 100% of kits (1000) were delivered in seven communities in La Matriz canton</p> <table border="1"> <thead> <tr> <th rowspan="2">Community</th> <th colspan="2">Families</th> <th>Kits</th> </tr> <tr> <th>M</th> <th>F</th> <th>Health kits</th> </tr> </thead> <tbody> <tr> <td>Totorillas</td> <td>95</td> <td>141</td> <td>236</td> </tr> <tr> <td>Laines Capulispungo</td> <td>60</td> <td>88</td> <td>148</td> </tr> <tr> <td>Laines San Carlos</td> <td>124</td> <td>187</td> <td>311</td> </tr> <tr> <td>Palacios</td> <td>41</td> <td>62</td> <td>103</td> </tr> <tr> <td>San Alfonso</td> <td>39</td> <td>61</td> <td>100</td> </tr> <tr> <td>Tomaloma</td> <td>20</td> <td>29</td> <td>49</td> </tr> <tr> <td>Lirio</td> <td>21</td> <td>32</td> <td>53</td> </tr> <tr> <td>TOTAL</td> <td>400</td> <td>600</td> <td>1000</td> </tr> </tbody> </table> <p>In terms of kit elements: Partial fulfilment (60 per cent) as saline solution was not delivered. The waterproof bag was delivered and the sensitization process was carried out.</p> <p>In terms of time: The health kits were distributed between Day 2 (48 hours) and Day 4, as distribution requires</p>	Community	Families		Kits	M	F	Health kits	Totorillas	95	141	236	Laines Capulispungo	60	88	148	Laines San Carlos	124	187	311	Palacios	41	62	103	San Alfonso	39	61	100	Tomaloma	20	29	49	Lirio	21	32	53	TOTAL	400	600	1000
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support from community leaders and a prior evaluation to carry out the distribution in a COVID-19 context, observing basic safety protocols for communities and technical staff. **In terms of amount of ash expected** 100%, as the eruptive process in September 2020 produced 2 - 5 mm of ash.

A video of the distribution of livelihoods and health kits in targeted communities can be viewed at <https://www.youtube.com/watch?v=ANJp0yikOA4>



Photo 23. Health kit distribution in Laimes San Carlos- Chimborazo



Photo 24. Socialization on use of kit in Laimes Capulispungo- Chimborazo



Photo 25. Community member who received health kit supplies in Laimes Capulispungo- Chimborazo

Strategies for Implementation

Strategies for Implementation

S1.1: National Society capacity building and organizational development objectives are facilitated to ensure that National Societies have the necessary legal, ethical and financial foundations, systems and structures, competences and capacities to plan and perform.

Output 1.1: National Society has the necessary corporate infrastructure and systems in place

P&B Output Code	Activities planned (specify timeframe)	Completed activities (specify timeframe)
AP039	<i>Evaluation of the intervention during activation</i>	The process to evaluate the EAP's implementation was carried out from November 2020 to January 2021, identifying the impact of providing health and livelihoods protection kits at the community

		level, as well as supplies, implements and tools used for other events such as to protect against COVID-19 and the droughts and frosts that occur in targeted communities every year
AP039	<i>Lessons learned workshop</i>	Planning and implementation of lessons learned was carried out in November, considering learning and aspects to be improved based on three approaches at the regional, institutional and community levels.

Output 1.2: National Society has effective and motivated volunteers who are protected

AP040	<i>Monitoring of activities during activation</i>	The monitoring actions were carried out by the operational team, including missions to the field (transport, food and accommodation), with support from IFRC technical staff. The evaluation of the operation was carried out once implementation had been completed. Results have been incorporated into development and implementation.
AP040	<i>Evaluation of the intervention during activation</i>	

Narrative description of achievements

The following was identified based on analysis and information established in the EAP for ashfall as well as data collected during the evaluation.

Action proposed in EAP	Implementation result
The EAP is structured in such a way that early actions are adapted to different ash emission scenarios.	<p>A sensitization process and supplies were delivered to communities in Cebadas canton in June 2020, which could be considered preparation for the subsequent implementation of the EAP in September in communities in La Matriz canton.</p> <p>The implementation of the EAP in September 2020, for which the established early actions were fulfilled, and the related processes (awareness-raising and delivery of supplies) are valid to safeguard the community's livelihoods against future ashfalls and address other types of dangerous events or emergencies.</p>
Previous geophysical forecasts have given the adequate signals to preposition the supplies, that there will be an accurate numerical model for the next ash emission in terms of direction and amount, and that the roads are accessible and make it easy to reach communities.	The supplies to address the eruptive process in September 2020 were prepositioned in the Quito warehouse and in the Ambato regional warehouse, which made it possible to deliver the kits to communities between Days 2 and 4 of activation.

<p>EAP activation mechanism Intervention map (determined crossing of variables that facilitate making optimal decisions regarding humanitarian aid): vulnerability map, ashfall modelling for each determined scenario, map of at-risk elements. Determination of the vulnerability index, which is crossed with information from wind forecasts.</p>	<p>The base information for the EAP's activation country level, and decision-making is carried out at the local level. Communication processes exist between the Ecuadorian Red Cross and the IGEPN, which allows information analysis and decision-making for the implementation of early actions. A communication flow and interpretation of information must be established between the ERC monitoring room and IGEPN during the update phase.</p>
<p>In the event the ash deposit is less than estimated, the distributions made have a positive effect regardless, as eruptive processes are often long-lasting and the kits can be used for future activations. In addition, all these actions contribute to a culture of preparedness because they allow the population to become familiar with some of the self-protection elements.</p>	<p>The delivery of the livelihood protection kits and CBI helped to prevent some ash-affected communities from losing their livelihoods, and to strengthen them. The delivery of the health kits allowed communities to have the necessary supplies (masks) to protect themselves against falling ash and potential COVID-19 infections.</p>
<p>The selection of the communities to be targeted by the EAP stems from a consensus with local authorities from GAD, SNGRE and the GRED Coordinator. The definition of the beneficiary communities will depend significantly on the judgement of the community representatives and their on-site analyses.</p>	<p>Working with community leaders allows ERC to identify residents' situation quicker, organize the community for efficient deliveries, and to have a partner in the territory for monitoring.</p>
<p>The amount must cover livestock transport, a one-month supply of food and the cost of temporarily leasing land in other local communities, which will be identified by the residents themselves. An unconditional CBI is recommended, and families are expected to secure food and the safety of their livestock, especially their cattle.</p>	<p>Communities affected by ashfall use financial assistance to buy food for their families and livestock. If the community engages in the production of small (guinea pigs and chickens) and medium-sized livestock (pigs and sheep), the animals do not need to be evacuated, as residents can easily sell them without significant financial loss.</p>
<p>The \$ 200 should be an incentive to evacuate, to not sell their livestock and to meet basic needs.</p>	<p>The 200 US dollars provided allowed some of the target population to buy more animals, food for their family and livestock, seed and fertilizer.</p>
<p>The health kit will be delivered 48 hours after the EAP's activation and the livelihoods protection kit as well as the CBI will be delivered 72 hours after activation.</p>	<p>The kits and CBI were delivered between Day 2 and Day 4 of the EAP's activation. During the update phase, other elements that allow establishing distribution times should be analysed. Since these depend on the community context, it can delay the delivery and distribution of humanitarian assistance by hours.</p>
<p>The feasibility of the EAP is guaranteed by the commitment and engagement of the provincial boards that have participated in the different activities carried out. NITs will be required when the capacities of provincial boards and their volunteers are</p>	<p>The support and dedication of the Chimborazo provincial board volunteers made it possible to implement the EAP in less than a week. The EAP should include advice and support from local staff during the implementation process to prevent any</p>

exceeded.	potential communication or cultural issues.
The physiological saline solution will be acquired at the time of activation since it has a short shelf life and buying it to then store it is not recommended.	Procuring the physiological saline solution was difficult, as it is currently in high demand in Ecuador because of the pandemic and the suppliers did not have enough stock for distribution.

D. BUDGET IMPLEMENTATION

Annex 1: Financial Report

Contact Information

Reference documents

Annex 2:

- Early Action Plan (EAP) for volcanic ash dispersion

For further information specifically related to this operation please contact:

In the National Society

- **Secretary General:** Juan Carlos Vizcarra, jvizcarra@cuzroja.org.ec
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- **EAP Coordination:** Sabina Ortiz, sortiz@cuzroja.org.ec, +593 98 455 0236.
- **GIS Specialist:** Fernanda Ayala, mayala@cuzroja.org.ec, +593 99 280 2474

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In IFRC Geneva

- **Programme and Operation Focal Point:** Nazira Lacayo, nazira.lacayo@ifrc.org, +41 (0)22 730 4644

For Resource Mobilization support:

- **Head of Partnership and Resource Development (PRD) unit- Americas:** Sandra Romero, sandra.romero@ifrc.org

For Performance and Accountability support (planning, monitoring, evaluation and reporting enquiries)

- **Planning, Monitoring, Evaluation and Reporting Manager:** María Larios, maria.larios@ifrc.org

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.

www.ifrc.org
Saving lives, changing minds.



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

1. Save lives, protect livelihoods, and strengthen recovery from disaster and crises.
2. Enable healthy and safe living.
3. Promote social inclusion and a culture of non-violence and peace

FBAF Early Actions

FINAL FINANCIAL REPORT

Selected Parameters			
Reporting Timeframe	2020/09-2021/03	Operation	PEC052
Budget Timeframe	2020/09-2020/11	Budget	APPROVED

Prepared on 19/Apr/2021

All figures are in Swiss Francs (CHF)

MDREC015 - Ecuador - Volcanic Ash / EAP2019EC001

Early Actions Timeframe: 21 Sep 2020 to 21 Nov 2020

I. Summary

Opening Balance	0
Funds & Other Income	105,926
FBAF Allocations	105,926
Expenditure	-84,672
Closing Balance	21,254

II. Expenditure by area of focus / strategies for implementation

Description	Budget	Expenditure	Variance
AOF1 - Disaster risk reduction			0
AOF2 - Shelter			0
AOF3 - Livelihoods and basic needs	90,052	78,895	11,157
AOF4 - Health	2,450		2,450
AOF5 - Water, sanitation and hygiene			0
AOF6 - Protection, Gender & Inclusion			0
AOF7 - Migration			0
Area of focus Total	92,502	78,895	13,607
SFI1 - Strengthen National Societies	13,424	5,777	7,647
SFI2 - Effective international disaster management			0
SFI3 - Influence others as leading strategic partners			0
SFI4 - Ensure a strong IFRC			0
Strategy for implementation Total	13,424	5,777	7,647
Grand Total	105,926	84,672	21,254

FBAF Early Actions

FINAL FINANCIAL REPORT

Selected Parameters			
Reporting Timeframe	2020/09-2021/03	Operation	PEC052
Budget Timeframe	2020/09-2020/11	Budget	APPROVED

Prepared on 19/Apr/2021

All figures are in Swiss Francs (CHF)

MDREC015 - Ecuador - Volcanic Ash / EAP2019EC001

Early Actions Timeframe: 21 Sep 2020 to 21 Nov 2020

III. Expenditure by budget category & group

Description	Budget	Expenditure	Variance
Relief items, Construction, Supplies	78,150	69,522	8,628
Medical & First Aid	1,800		1,800
Teaching Materials	750		750
Cash Disbursement	75,600	69,522	6,078
Logistics, Transport & Storage	6,856	693	6,163
Distribution & Monitoring	1,636		1,636
Transport & Vehicles Costs	5,220	193	5,027
Logistics Services		500	-500
Personnel	6,385	5,219	1,166
National Staff		645	-645
National Society Staff	1,800	4,175	-2,375
Volunteers	4,585	126	4,459
Other Staff Benefits		273	-273
Workshops & Training	1,250		1,250
Workshops & Training	1,250		1,250
General Expenditure	6,820	4,071	2,749
Communications	250	4	246
Financial Charges	6,570	4,067	2,503
Indirect Costs	6,465	5,168	1,297
Programme & Services Support Recover	6,465	5,168	1,297
Grand Total	105,926	84,672	21,254