



Column of gas and ash of the Puracé volcano. Colombian Geological Service

Appeal: MDRCO033	DREF Allocated: CHF 80,000	Hazard: Volcanic Eruption	Country: Colombia
Population at risk (if available): 40,000	Operation Start Date: 05-12-2025	Operation End Date: 31-01-2026	
Event Onset: Sudden	Forecasted day of event (or peak): -	Operation Timeframe: 45 days	

Targeted Regions: **Cauca**

Scenario analysis

When and where is the hazard expected to happen?

On November 29, 2025, the Colombian Geological Service (SGC) reported a change in the alert level of the Puracé Volcano—part of the Los Coconucos Volcanic Chain (CVLC)—from Yellow to Orange. This decision was based on significant changes in the monitored parameters, including an increase in the occurrence and energy of earthquakes associated with fluid dynamics inside the volcano, as well as gas and ash emissions from the crater exceeding 1,000 meters in height.

On December 2, 2025, Decree 062 was issued: “By which a State of Public Calamity is declared in the municipality of Puracé – Coconuco, Cauca, due to the volcanic threat posed by the Puracé Volcano – Los Coconucos Volcanic Chain, the ashfall, and the budgetary insufficiency to respond to the emergency; the change in the alert level from Yellow to Orange is adopted, and other provisions are established.” According to the most recent report from the SGC, the observed gas and ash columns have reached heights exceeding 1,000 meters, with dispersion toward the southeast. Due to adverse weather conditions, it has not been possible to estimate their total height. The impacts recorded to date include the contamination of water sources such as the San Francisco River and reports of ashfall in San Juan de Puracé.

Local authorities and emergency response agencies in Cauca began the first preventive evacuation processes on Tuesday, December 2, in the upper area of the Puracé Volcano. The evacuations are focused on rural sectors within the Indigenous Reservations of Puracé and Coconuco, which are considered at risk due to ground movement, gas emissions, and environmental alterations. The National Unit for Disaster Risk Management (UNGRD) requested mandatory immediate evacuation for 70 people located in the high-risk area due to the Puracé volcano. However, according to preliminary information from the National Unit for Disaster Risk Management (UNGRD) and local authorities in Cauca, it is estimated the displacement of more than 1,900 inhabitants from the Puracé Indigenous Reservation, along with more than 120 people from the Coconuco township, who are located between the risk zone. The situation becomes more complex, as the Puracé authorities would not have the resources to carry out the evacuation recommended by the UNGRD in the shortest possible time, nor would it have suitable places to receive families living in the risk zone.

The families already evacuated are being relocated to the "Campamento community" center and the "sports facility" in the Puracé populated center, which has an approximate capacity for 100 families. Due to this situation, local authorities and the institutions that make up the departmental disaster risk management system are assessing the safety of additional areas for the temporary accommodation of families undergoing evacuation.

The Puracé Volcano is located 52 km from the city of Popayán and sits on the border between the departments of Cauca and Huila, in Colombia's Central Mountain Range. The volcanic chain is part of the Puracé National Natural Park and consists of a group of more than 12 geographically aligned volcanoes; however, the only active one is Puracé, with an elevation of 4,646 meters above sea level. Several communities of the department of Cauca, including the municipality of Puracé-Coconuco, are located around it. The Cocuy, San Francisco, Vinagre, and Anambio rivers—tributaries of the Cauca River—originate on the slopes of the volcano.

The territories identified within the area of influence of the Puracé Volcano in the department of Cauca are: Puracé, Popayán, Sotará-Paisbamba, Timbío, Rosas, El Tambo, La Sierra, Patía, Bolívar, Sucre, La Vega, and Totoró; and in the department of Huila: San Agustín, Isnos, Saladoblanco, and La Argentina. Therefore, according to the Colombian Geological Service and the Cauca Section of the Colombian Red Cross, approximately 40,000 people live within the volcano's area of influence and could be affected in the event of a potential increase in volcanic activity and a change in the alert level from Orange to Red.

Some of the changes that may occur in the event of an imminent eruption include:

- An ongoing eruptive process whose climax may occur within a matter of hours.
- It is characterized by its multi-causal nature.
- It is associated with pyroclastic falls, lava flows, ballistic projectiles, torrential flooding, landslides, lahars, and wildfires.

Explain the underlying vulnerabilities and risks the hazard poses for at-risk communities?

Through the daily bulletins issued by the Colombian Geological Service regarding the activity of the Puracé Volcano, the change from Yellow Alert to Orange Alert was reported on November 29. The Orange Alert status indicates that the monitored parameters show considerable variations or fluctuations (which may increase or decrease) and increase the probability of one or more significant eruptions of substantial magnitude and height. Such eruptions could significantly affect human and animal life, the ecosystem, and the infrastructure of the municipalities near the volcano. Likewise, seismic activity increases considerably, both in earthquakes associated with the fracturing and cracking of rocks within the volcano and in those related to the movement of fluids (gases, ash, magma, and water



vapor) inside it.

An increase in gas emissions has been observed, characterized by strong odors and often accompanied by frequent volcanic ash emissions. Additionally, minor eruptions (of limited reach and impact), rock ejections, and small avalanches (lahars) have occurred in the rivers originating from the volcano. Some of the consequences for the nearby population due to the increased emission of ash and gases include health impacts such as irritation and nasal discharge, throat irritation and burning—sometimes accompanied by dry cough or difficulty breathing—eye or skin irritation, as well as stress, anxiety, and fear resulting from uncertainty and environmental changes caused by the volcanic activity. Contamination of water sources and the displacement of families to safe areas have also been identified, which in turn affects the continuity of economic activities.

The Colombian Red Cross, together with its Cauca and Huila Branches, have participated in National Crisis Rooms and in the Municipal Disaster Risk Management Councils on an ongoing basis to advance preparedness actions, as well as to coordinate with the communities located in high-risk areas. In this regard, staff and volunteer teams are engaged in readiness activities to prepare communities for a potential emergency and to ensure a timely response.

Source Name	Source Link
1. Special bulletin of November 29 – Change to orange alert	https://www.papayan.gov.co/NuestraAlcaldia/SaladePrensa/Paginas/El-Volc%C3%A1n-Purac%C3%A9-cambia-a-estado-de-Alerta-Naranja.aspx
2. Decree 062 of December 2, 2025, Declaration of a public disaster in the municipality of Purace	https://caracol.com.co/2025/12/02/declaran-calamidad-publica-en-purace-por-alerta-naranja-del-volcan/
3. Action Plan of the Colombian Red Cross due to alert change of Puracé volcano	https://ifrcorg-my.sharepoint.com/:w/g/personal/edwin_armenta_ifrc_org1/IQB_eQg380J2TQ7HLMPh7y1mzAcFzB-u6Goj6MD0_o6fnfuE?e=HPxCG7&wdLOR=cA4705CBC-1330-4B53-A6F6-39152E25C0E1

[Supporting Documentation](#)

Plan

Which of the expected severe humanitarian impacts of the hazard are your actions addressing? Why were these impacts chosen?

Through this DREF operation, the Colombian Red Cross aims to directly reach 880 people located in the high-risk area of the Puracé volcano. According to the following description: 450 people through CASH, 400 people through WASH and HEALTH, and 30 people through the refresher training. In addition, it's planned to support the habilitation of 5 recommended temporary shelters with provision of health and WASH supplies. The request for this DREF operation forms part of the Colombian Red Cross' existing Contingency Plan and Action Plan for increased activity of the Puracé volcano. Additionally, it is worth highlighting that in 2024, with IFRC support, the National Society conducted an assessment of collective shelters in the municipality of Puracé, Cauca. These documents, together with the preliminary assessment currently being conducted on the ground by the Cauca branch of the Colombian Red Cross, inform the operational strategy presented below.

Health:
The Orange Alert for volcanic activity increases the emission of gases and ash, severely affecting the health of families located in the affected area. Inhalation of these contaminants can cause respiratory problems, coughing, throat irritation, and difficulty breathing, and can exacerbate pre-existing conditions such as asthma, bronchitis, and COPD. Therefore, the Colombian Red Cross will begin distributing KN95 masks to communities at highest risk.

Other health risks include eye and skin irritation, and with prolonged exposure, an increased likelihood of more serious health problems. Ash can also contaminate water and food, causing gastrointestinal discomfort. Children, older adults, pregnant women, and people with chronic illnesses are particularly vulnerable. Additionally, the stress associated with volcanic activity, potential evacuations, and continuous exposure to risk can increase anxiety levels and create a significant emotional burden for the population. Given the risk to both physical and mental health, refresher training and simulation exercises in physical and psychological first aid will be conducted for first response teams (Colombian Red Cross, Civil Defense, Firefighters, and members of the Puracé Indigenous Council in Cauca). As part of this refresher trainings, four trauma kits will be provided to each team to support evacuations and enable rapid response if volcanic activity increases. Furthermore, temporary shelters will be supported with basic first aid kits to address emergencies.



Water, Sanitation and Hygiene:

There is a clear need to implement measures that prevent the population's exposure to contaminated water due to volcanic ashfall on water sources. This requires prioritizing community awareness activities to promote safe water management practices, taking into account the impact on the water sources supplying conventional aqueducts. Similarly, if evacuations occur for families near the high-risk zones, it is necessary to support the distribution of hygiene kits and water treatment filters in temporary shelters. According to the assessment of collective shelters conducted by the Colombian Red Cross and IFRC in 2024, these identified areas do not currently have the necessary conditions to provide access to water suitable for human consumption for the affected families.

Volcanic ash emissions can have a negative impact on water sources as well, particularly those near the Puracé Volcano, by altering water quality parameters. These changes include increased turbidity, shifts in pH (increased acidity), the release of heavy metals and toxic compounds such as arsenic, copper, and cadmium, as well as the presence of substances derived from volcanic gases such as sulfates, chlorides, and fluorides. These conditions pose health risks, alter the dynamics of aquatic and terrestrial ecosystems, affect soil properties, and complicate the operation of unit processes in water supply and sewage systems due to ash accumulation. The situation could become more critical if particle emissions increase and some tributaries of the Cauca River become contaminated.

Livelihoods and basic needs:

Due to the high risk posed by the increased activity of the Puracé Volcano, some families have already evacuated to safe areas. This displacement, combined with the broader impacts associated with increased volcanic activity, affects their livelihoods, assets, and access to essential services and supplies. These conditions may compromise food security and economic stability for evacuated families, as indigenous residents primarily developed agriculture as a means of subsistence, which is highly susceptible to loss due to ash accumulation and water contamination.

In this context, multipurpose cash assistance aims to support access for families evacuating according to the instructions of local authorities, allowing them to cover essential needs in a personalized manner, with dignity and freedom in decision-making, and to avoid adopting a passive stance in response to the urgent need to evacuate. In this way, families located in high-risk areas can obtain the necessary resources to carry out a dignified evacuation, access medicines and food, and compensate for the disruption of their livelihoods. The multipurpose cash transfer covers 60% of the households' needs gap, based on standards established in Colombia by the Cash Transfer Working Group (GTM). Accordingly, an amount of COP 600,000 is considered for families of three people who have evacuated their homes.

Consequently, it is planned to provide assistance to 100 families evacuating to the two temporary shelters mentioned previously—which have a combined capacity of 100 families—or to other locations, taking into account the imminent nature of the emergency and the capacities of the Cauca Branch to carry out the distribution of multipurpose cash transfers. For this operation, families residing within the prioritized volcanic risk zones, who have been evacuated and are staying in temporary shelters, will be prioritized. These households typically consist of 3 to 4 members, with special consideration given to vulnerable groups (older adults, children, persons with disabilities, and pregnant or lactating women), households that have suffered loss of income-generating activities, and households without functional support networks. To support this process on the ground, and based on the capacities of the Cauca branch, the deployment of a volunteer from the National Intervention Team (ENI), specialized in multipurpose cash transfers, is planned.

Shelter:

According to national regulations, the decision to evacuate is entirely the responsibility of the public authorities, in this case the mayor's office, which, with the support of the UNGRD, the entity in charge of coordinating the country's risk management system, must ensure the protection of the lives of people at risk. The Colombian Red Cross, as an auxiliary to the public authorities, works with the system to facilitate the development of humanitarian actions aimed at risk management. The sites designated as potential collective shelters consist mostly of community centers, followed by sports facilities and cultural establishments. According to the assessment of temporary shelters conducted by the Colombian Red Cross and IFRC, 10 recommended shelters were identified, located in the populated center of Puracé and nearby rural areas. For this operation, 5 of these shelters will be prioritized.

It should be noted that these shelters do not have sufficient supplies for the people who may evacuate due to exposure to the activity of the Puracé Volcano. Needs have been identified in their facilities to ensure the provision of water, hygiene and sanitation items, conditions that guarantee adequate rest, as well as spaces for the delivery of humanitarian services. Additionally, it is important to highlight that prioritization was carried out in accordance with the needs shared by the National Unit for Risk Management and OCHA with the Colombian Red Cross, where a request for support was established via coordination meetings of the departmental crisis room to cover water, sanitation, and hygiene needs and the provision of evacuation kits in prioritized shelters. Similarly, the Puracé municipal government has distributed 115 shelter kits (mattresses, blankets, and pillows), and OCHA has conducted a protection-focused assessment in the evacuated communities.

Disaster Risk Reduction:

The Colombian Geological Service (SGC) is responsible for early warning message, who is the technical and scientific institution, responsible for geoscientific research, monitoring geological hazards, among other responsibilities. The recent bulletin prepared by the SGC generated the activation of the Disaster Risk Management system to develop preventive measures to mitigate the effects of the



volcano activity. In the event of a volcanic eruption, radio communications may be affected by volcanic ash emissions, impacting HF and VHF systems near the area of influence of the Puracé Volcano. In HF systems, ash particles in clouds can interfere with the HF band, limiting communications at times. Similarly, VHF systems may be affected as ash obstructs antennas and transmission lines of equipment installed near the volcano, such as those of the Cauca Branch of the Colombian Red Cross, which operates a repeater on the volcano's slopes. Due to the proximity of the equipment to the volcano, some devices have already been impacted by ashfall. In the event of an eruption, they could also be damaged by rockfall, which may topple towers and antennas and affect solar panels. If ash particles enter electronic equipment, they can cause irreparable damage and system collapse.

Additionally, mobile phone and internet services may be disrupted due to power outages in affected areas, network overload from increased user demand, or direct damage to infrastructure such as towers, antennas, and power generation equipment. The exposure area is also in rural zones where signal access is limited, highlighting the need to expand telecommunications coverage through maintenance of radios and an HF system antenna. For these reasons, the activities of the Cauca Branch will be supported by the deployment of two volunteers from the National Intervention Team (ENI): one generalist and one with a focus on telematics.

National Society Development:

Due to the imminent risk posed by volcanic activity, it is necessary to strengthen the crisis response capacities of staff and volunteer teams, as well as provide refresher training. In this regard, it is important to update volunteers on evacuation plans, conduct awareness-raising activities with communities, and ensure the necessary equipment is available to respond to a potential emergency. Therefore, there is a need to reinforce the capacity of the Cauca Branch, as well as personnel from civil defense, firefighters, and the indigenous guard, to address the requirements arising from the change in the alert level of the Puracé Volcano. This includes supporting the local team with the deployment of volunteers and specialized personnel in the prioritized intervention areas.

Exit strategy

This intervention aims to further strengthen the capacities already established within the Cauca branch and local authorities, taking into account the discussions held in the Unified Command Posts and addressing the requests submitted by various actors of the National Disaster Risk Management System. It is also important to consider that the Colombian Red Cross has a series of regulatory documents, including the Contingency Plan and the Action Plan for changes in the alert level of the Puracé Volcano. These documents will be updated within the framework of this operation and will guide the National Society in managing a timely response should the event occur. In addition, the National Preparedness and Response Plan for Puracé Volcano activity, developed by the National Disaster Risk Management Unit, will be taken into account by the National Society in the event of an escalation of the situation.

Complementarily, the IFRC Delegation in Colombia will maintain constant monitoring of the operation and any changes in the alert level of the Puracé Volcano, considering the possibility of scaling up to a full response operation through an Operational Update. Considering the changes in the activity of the Puracé Volcano over the past two years, the IFRC has recommended that the National Society consider the development of an Early Action Protocol to address this threat.

[National Society developed contingency plans, or recently carried out PER assessment Document](#)



Proposed Actions

	Sector	Activities	Budget (CHF)
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Early Actions

Livelihoods and basic needs	<ul style="list-style-type: none"> • 110 multipurpose cash transfers for evacuated families (450 people), with a 1% PSF commission. • Deployment of 1 Cash ENI (National Intervention Team member) for 1 month. 	
WASH	<ul style="list-style-type: none"> • Dissemination of key messages on water safety during volcanic eruptions to 400 people. • Replenishment of 10 water treatment filters in shelters. • Replenishment of 10 hygiene kits for shelters (including plastic storage containers, trash bags, dish soap, sponges, detergent, sodium hypochlorite, disinfectant, broom, dustpan, mop). • Replenishment of 10 water storage tanks with a capacity of 500 liters each. 	
Health (public)	<ul style="list-style-type: none"> • Refresher training on first aid for volunteers of the Colombian Red Cross in Popayán, Civil Defense, firefighters, and the indigenous council for aprox. 30 people. • Replenishment of 5,000 KN95 masks delivered to communities located in risk zone to reach 400 people who were also reached through the WASH line. • Replenishment of 4 trauma kits (including personal protective and biosecurity supplies – gloves, goggles, masks, among others; biomedical equipment and instruments – stethoscope, headlamp, forceps, sphygmomanometer, thermometer, among others; devices – cannulas, splints and immobilizers, syringes, tourniquets; consumables – gauze dressings, blankets, bandages, patches, rehydration salts, saline solution, signaling items, among others). • Replenishment of 5 evacuation kits for shelters (first aid kit, rigid stretcher, megaphone, flashlight). 	<p>CHF 65,000</p>
DRR	<ul style="list-style-type: none"> • Maintenance of the telecommunications system at the Cauca Branch (purchase of radio batteries, HF system antenna, solar panel). • Deployment of 1 Telematics ENI (National Intervention Team member) for 15 days. • Satellite data recharge. 	
NS Strengthening	<ul style="list-style-type: none"> • NS staff salaries (4.5%) • Deployment of 1 general ENI (National Intervention Team member) for 1 month. • National Society monitoring. • Air, land, and cargo transportation. • Volunteer support. • Lessons learned workshop. • National Society indirect costs. 	
Shelter	<ul style="list-style-type: none"> • Support for the provision of necessary supplies for the habilitation of temporary accommodation. • Cash assistance to enable people to purchase materials, or pay rent and utilities, provided to affected families evacuated located in a temporary shelter. • Dotation to 5 recommended temporary shelters with health and WASH supplies. 	





Early Response

NS Strengthening

- Deployment of National Intervention Teams (ENI)

CHF 10,000

Sub-total

CHF 75,000

Indirect Cost

CHF 5,000

Total

CHF 80,000



Contact Information

For further information, specifically related to this operation please contact:

National Society contact: Juvenal Francisco Moreno, National Executive Director, francisco.moreno@cruzrojacolombiana.org

IFRC Appeal Manager: Melker Mabeck, Head of Country Delegation, melker.mabeck@ifrc.org

IFRC Project Manager: Edwin Armenta, Coordinator Programs and Operations, edwin.armenta@ifrc.org

IFRC focal point for the emergency: Edwin Armenta, Coordinator Programs and Operations, edwin.armenta@ifrc.org

Media Contact: Susana Arroyo, Regional Communications Manager, susana.arroyo@ifrc.org

[Click here for the reference](#)

