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Task force of professional geologists presents action plan for economic recovery after La Palma volcanic eruption

Press release I Brussels I January 2022. Spanish and Italian geologists gathered on the island of La Palma to analyse the effects of the eruption of the Cumbre Vieja volcano, share best practices on the management of geological risks to improve civil protection at a European level and put forward an action plan for the economic recovery of the Canary Island.

The eruption of the Cumbre Vieja volcano on the island of La Palma, which started in September 2021, destroyed nearly 3,000 buildings, displaced 7,000 persons, and covered 1,241 hectares by lava. The volcanic eruption has officially been declared over on 25 December 2021 following a monitoring period of 10 days where no seismic activity was observed. The island is now facing the challenges of its **reconstruction and economic recovery**: Banana plantations, which are one of La Palma's main economic sectors, their irrigation systems, as well as critical infrastructures such as roads, power, and communication lines, have been massively destroyed by the lava flows.

In November 2021, a task force composed of geologists from the Italian National Council of Geologists (CNG) and the Spanish Illustrious Official College of Geologists (ICOG) gathered on the Canary Island to study the activity of Cumbre Vieja, where the eruption was unrelentingly underway for 85 days, starting from the 19th of September 2021. The objectives of this joint mission were to evaluate the **consequences of the eruption on the island's anthropic and environmental system**, to share best practices for the management of geological risks and to **develop a joint action plan for economic recovery** to be carried out in collaboration with the European Federation of Geologists (EFG), a professional body representing geoscientists from across Europe, of which both CNG and ICOG are members.



Lava flows affecting banana plantations in La Palma, Spain. Photo: C. García Royo.

"We greatly appreciate the precious help of our Italian colleagues in this situation that requires humanitarian aid combined with qualified technical assistance to carry out the reconstruction work", declares Carlos García Royo, Vice-President of the ICOG and President of the not-for-profit organisation, Geólogos del Mundo. *"The CNG delegation has demonstrated their great experience gained in the daily management of seismic and volcanic risks in Italy."*

Together with the Spanish civil protection authority, the task force visited the area affected by the volcanic activity, including lava flows, Strombolian activity, and lava fountains. This concerned, in particular, four sites located along the right flank of the lava flow, starting from the summit area and continuing towards the valley to the end of the lobe of the lava flow, close to the sea. The task force met representatives of the various technical-scientific committees involved in the emergency management and, at this occasion, the Italian geologists presented **civil protection procedures developed around Etna**, a volcanic system very similar to Cumbre Vieja in terms of its eruptive products although located in a completely different geodynamic context. Participating in emergency management activities represented a starting point for the cooperation with the Canary authorities, which assessed positively the **multidisciplinary approach** presented by the Italian delegation. In addition, meetings were held with the municipality of Tazacorte, the Gesplan company, which oversees the reconstruction of the autonomous community of the Canary Islands, and the La Palma Business Federation.

Accordingly, the task force identified three main areas where professional geologists can help mitigate the impact on the local population of La Palma and subsequently contribute to the island's economic recovery:

- **Mapping and preventing risks:** The need for accurate risk mapping and an improved risk scenario development was one of the key themes of the technical meetings the delegation held with the Spanish civil protection and government authorities.

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- **Ensuring safe water and power supply:** Hydrogeological studies mitigate water supply problems caused by the destruction of pipelines and geological knowledge can facilitate access to alternative energy resources such as geothermal, an untapped energy resource which is available 24 hours per day as heat stored within the Earth's crust.
- **Analysing soils to boost the recovery of the agricultural sector:** Finally, geologists are analysing the composition of the new slopes created from volcanic ash and lapilli which will offer a fertile ground for the reconstruction of the heavily affected banana plantations.



Lava flows on the beach, La Palma. Photo: C. García Royo.

Geologists study the Earth as one system, including its oceans, atmosphere, rivers and lakes, ice sheets and glaciers, soils, its complex surface, rocky interior, and metallic core. Geological knowledge is for instance essential to **better understand natural disasters** such as earthquakes or volcanic eruptions and **improve preparedness and mitigation** of their effects. In this respect, Carlos García Royo also underlined the need to enhance societal awareness of geological topics in the long run to improve civil protection during natural disasters: *"Geology should be a compulsory subject at school, starting from the earliest childhood, to improve the general awareness of how important geology is for our life on Earth."*

According to Gabriele Ponzoni, the Secretary-General of the European Federation of Geologists (EFG), the joint mission is already bearing fruits: *"Bringing together Spanish and Italian geologists allowed us to combine our expertise in the fields of the prevention, assessment and management of natural disasters and related risks. This knowledge exchange contributed to enhancing geological skills in both countries, intending to increase the safety of the civil society."*

Besides the **advice and practical support for the island's economic recovery** offered, for instance, by the newly established NGO Geosolidarioslapalma (website in Spanish), the task force calls for the **active involvement of professional geologists in civil protection mechanisms at a European level**, geologists having both historical experience in the mitigation of natural disasters and the technical skills needed to assess emergency and post-emergency phases. In particular, geologists can provide advice on potential natural hazards and improve citizens' preparedness from an anthropocentric perspective, bridging thus the gap between the technological improvements of early warning systems and the lack of societal information and paving the path for the **creation of citizen observatories** which can act as a block of resilience in case of an emergency.

The **European Federation of Geologists** (EFG) is a professional organisation representing geoscientists from 27 national member associations across Europe. It confers the internationally-recognised European Geologist ("EurGeol") professional title to suitably qualified candidates. For more information see: www.eurogeologists.eu

The **Italian National Council of Geologists** (Consiglio Nazionale dei Geologi, CNG) is the national organisation in Italy which has the legislated authority to register professional geoscientists and regulate geosciences practice in Italy. For more information see: www.cngeologi.it

The **Official Spanish Association of Professional Geologists** (Ilustre Colegio Oficial de Geologos, ICOG) aims at the management, within its competence, of the activity or practice of the profession of geology and exclusive representation and advocacy of professional geologists in Spain. For more information see: www.icog.es

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