

Vulcano 2022 exercise. A focus on risk and emergency communication activities for the population

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In April 2022 took place “Vulcano 2022”, a full-scale exercise on Vulcano island. The exercise was carried out by the National Civil Protection Department (NCPD), the Regional Civil Protection Department of Sicily Region, Messina prefecture, and Lipari municipality. The aim of the exercise was to test the “Civil Protection National Plan for the volcanic risk on the Vulcano Island” and the local civil protection planning.

The exercise simulated the triggering of increasing alert levels up to the red alert, corresponding to the operational phase of the alarm. This stage calls for the activation of the procedures for the evacuation of the population on the island.

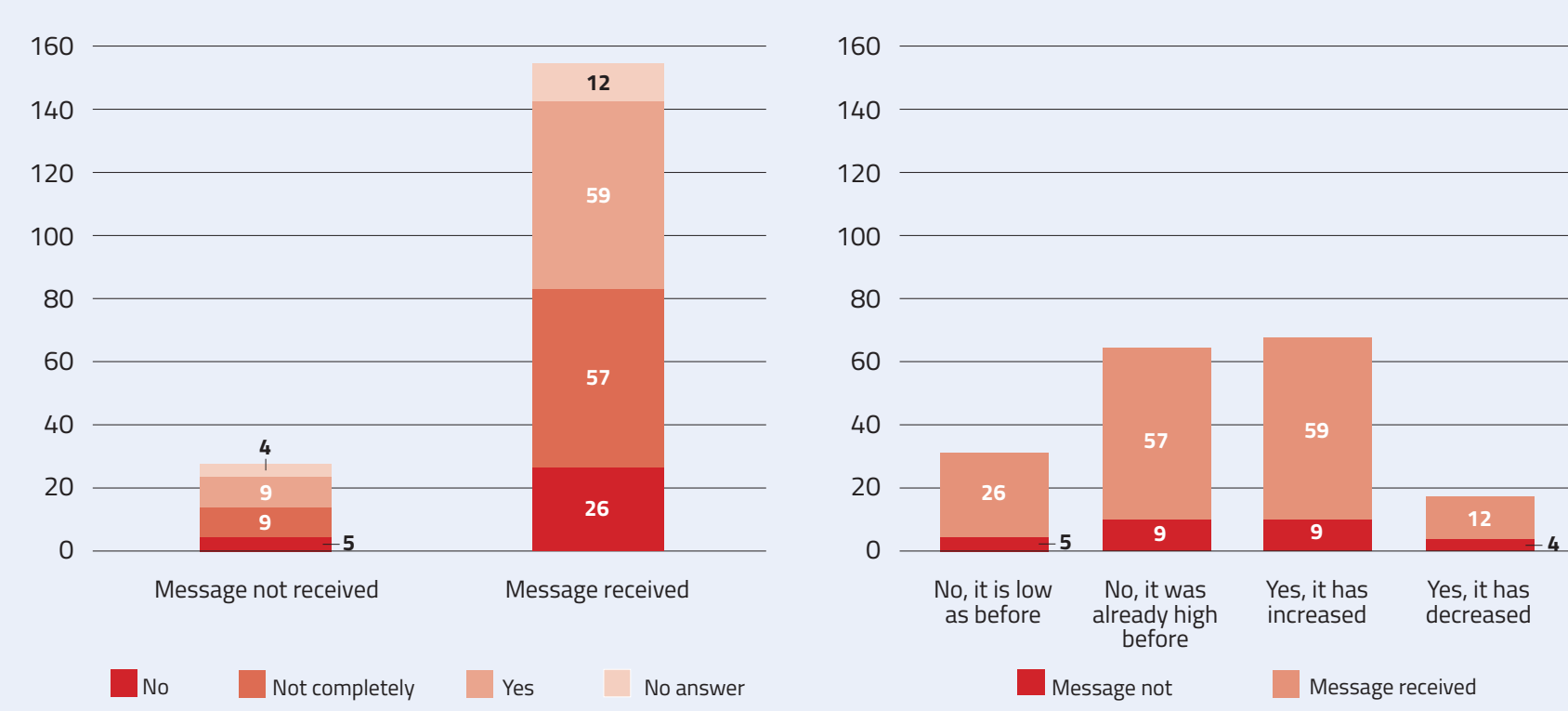
The National Civil Protection Plan includes a series of measures related to communication activities for the population both in ordinary, and in the stages preceding a possible volcanic eruption. The exercise was an opportunity to test information and communication tools.

From August 2021, monitoring systems have been measuring significant variations in geochemical and geophysical signals. In October 2021, a diffuse degassing activity from the ground started increasing reaching an all-time high average values in gas concentration in inhabited areas.

The National Civil Protection Department supported by the National High Risks Commission raised the volcanic alert level from “Green - Quiescence” to “Yellow - Minor Surface Hydrothermal Crisis”. On December 29th, 2021, the high concentrations of volcanic gases on the island led the Council of Ministers to declare the “State of emergency”.

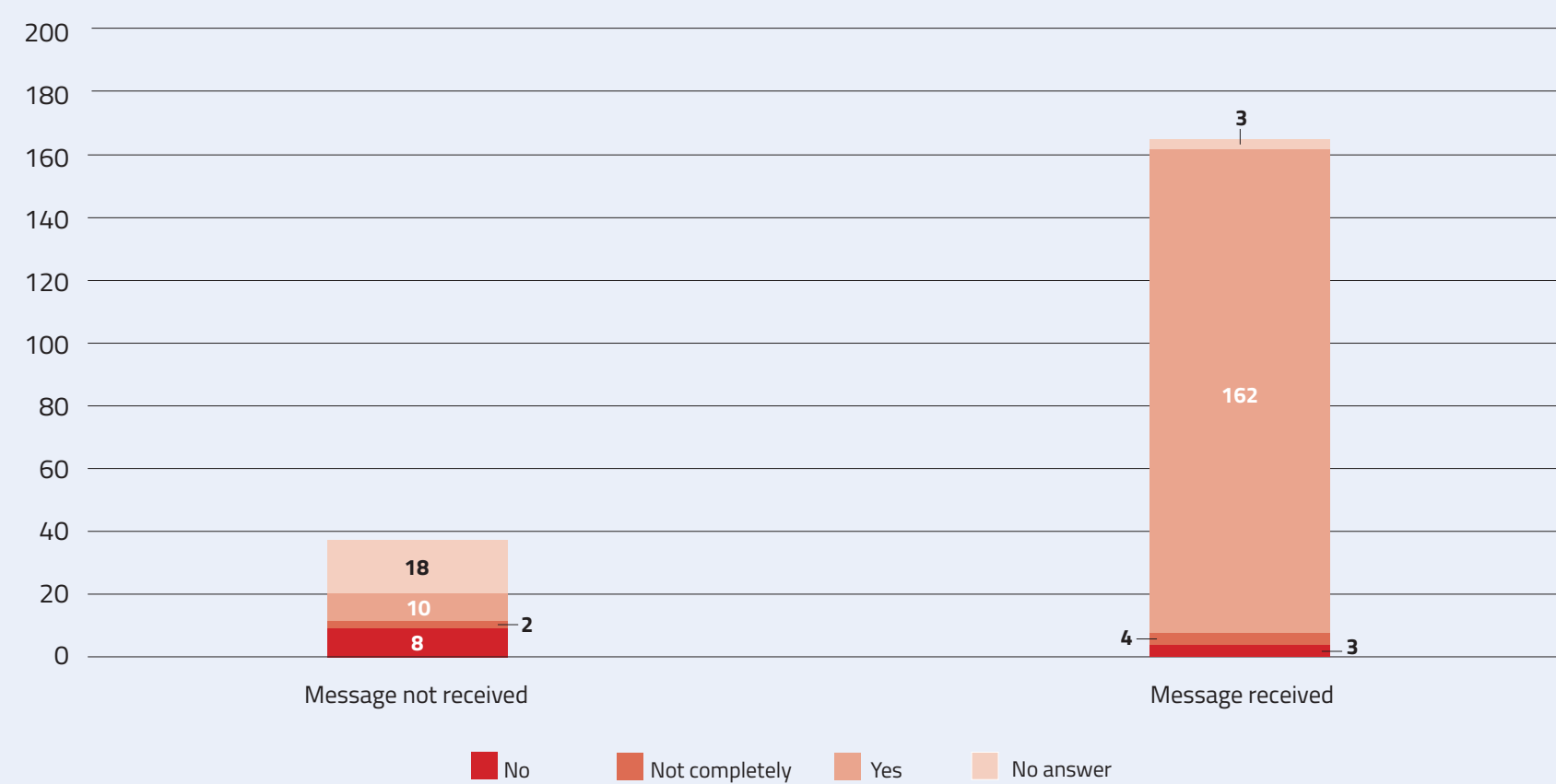
Questions about IT- Alert message messaging

THE MESSAGE PURPOSE WAS TO INFORM YOU OF THE EVACUATION ORDER FROM THE ISLAND. DID YOU UNDERSTAND THE INSTRUCTIONS PROVIDED IN THE MESSAGE?



Questions about IT- Alert message messaging

HAS YOUR TRUST IN THE INSTITUTIONS CHANGED AFTER THIS EXERCISE?



IT-ALERT system

- The exercise provided an occasion to test for the first time IT Alert: the public warning system that informs the population in real time about major upcoming emergencies. The system is established by Art. No. 28 of the Law Decree No. 32 issued on April 18, 2019. The system is currently in the experimental phase.
- IT Alert is based on cell broadcast technology and consists of a dedicated cell phone message with a distinctive ringtone, which alerts the population of a selected area about a specific risk. In the course of the exercise two messages have been sent.
- The first message was sent at the beginning of the exercise during the activation of the alarm phase stating the evacuation order: “exercise- civil protection alarm for imminent volcanic eruption on Vulcano island. Reach emergency areas to evacuate the island from Porto di Levante or from Molo di Gelso”. The second was sent at the end of the exercise, with the following text: “exercise- civil protection- Vulcano island- end of exercise”.
- To organise the sending of messages through the IT alert system, different meetings with mobile providers took place, and 10,000 potential users were estimated to be reached. These numbers are considerably higher than the people actually present on the island, because to cover the entire island, cells in Lipari and on the Messina coast were hooked up.
- The effectiveness of IT-ALERT was evaluated by sending questionnaires and semi-structured interviews to participants in the exercise, people who not attended the exercises, and local stakeholders identified by the municipality of Lipari.
- The result of the trial was generally very positive, although some problems were encountered, mainly related to the presence of obsolete mobile devices and the lack of signal coverage in part of the island.

Questionnaires and interviews

- The overall effectiveness of the exercise, particularly It Alert, was evaluated through the submission of a questionnaire and semi-structured interviews carried out with the support of the CIMA Foundation:
 - To the island’s residents and civil protection operators involved in the evacuation procedures
 - Lipari residents who not attended the exercise
 - Local stakeholders identified by Lipari municipality
- The elements assessed in the questionnaires were: the IT Alert message reception, the clarity of the message, the consistency between the IT Alert message and the communication envisaged by the Municipal plan, and the potential criticalities in case of evacuation from the island.
- With regard to the questionnaires submitted to citizens involved in the exercise, a total of 210 people received the questionnaires. Despite the notification of some criticalities, more than 80% of the people reached validated the positive outcome of the test with regard to the reception of the IT-Alert message. Almost everyone affirmed the comprehensibility of the IT Alert message, being aware of the correct behavior to adopt.
- Within the questionnaire, a section was dedicated to the criticalities emerged during the exercise. Among which, confusion and poor coordination, congestion and long waits, difficulties on roads and in reaching meeting points, lack of law enforcement officers, and limited detailed information.
- The questionnaire was submitted also to the operators of the National Civil Protection Service taking part in the exercise. A total of 76% of the operators received the message finding the information clear and understandable both from a personal standpoint and with regard to the population’s behavior.
- Semi structured interviews provided more involvement of the local stakeholders. The interviews were aimed to assess the consistency between the information provided by the municipality and the information provided by IT- Alert, but also to evaluate other sources of information.

Training sessions with the local population and schools



- Before the exercise was organized an informative meeting by the Civil Protection Department, INGV, the Sicilian region, and the municipality of Lipari, in cooperation with CIMA Foundation, to raise awareness on civil protection themes, national and local planning for volcanic risk. The meeting was also aimed at introducing the IT Alert system test.
- The meeting was attended by approximately 100 people out of a total of 400/500 present on the island during the period of the exercise.
- The exercise was an occasion to revise the rules of conduct for residents and tourists on the island, that will be disseminated during the days of the national communication campaign “I don’t take risks Vulcano island” that will be tested for the first time in October 2022.
- The exercise days included a meeting with the only primary and secondary school on the island. The Civil Protection Department, INGV, the Sicilian region, the Municipality of Lipari and CIMA Foundation attended the event.



During the meeting, a map of the island was distributed to the people, with indications about the key elements for planning and a QR code linking to the Civil Protection website page showing the rules of conduct for Vulcano island.

Civil protection signage



- The exercise was an opportunity to update the old signage on the island by installing new civil protection signage to help guide people away from the area at risk and toward the waiting areas provided by municipal planning.
- The aim of the signage is to increase people’s awareness on the risk and summarize the main rules of conduct and self-protection to adopt in case of an alert declaration.
- The signage provide information and rules of conduct for the volcanic risk, indicate the direction to follow to reach the waiting and meeting areas, and where they are located.
- A total of about 150 signage installation was provided in many sites throughout the island and in critical point individuated by the Lipari municipality.
- The realization of the signage is compliant with the national and international regulations, and takes into account relevant national experiences and international studies on volcanic risk signage.
- The graphic elements are consistent with the visual identity of the Civil Protection Department and the national communication campaign on good civil protection practices “I don’t take risks”.
- The messages are written in Italian and translated into English to ensure complete understandability for the tourists.

The civil protection signage for Vulcano island, attached at the National Civil Protection Plan, is downloadable at the following link in the section dedicated to Vulcano <https://rischi.protezionecivile.gov.it/>



In conclusion, Exercise Vulcano 2022 was a valuable opportunity to test communication tools to be deployed in the event of a volcanic eruption, particularly the first field trial of the It-alert public warning system and civil defense signage. Information and involvement activities with the population and schools have resulted in excellent citizen engagement, contributing to increasing the resilience of communities and the level of trust in institutions.