



# CLIMATE DETECTIVES 2021 – 2022



Spaniards in The Netherlands  
Van Voorschotenlaan 26

## RESEARCH QUESTION

How does the eruption affect climate change?

## SUMMARY OF PROJECT

Cumbre Vieja is a volcano in La Palma, Islas Canarias (in Spain). Cumbre Vieja erupted the 19th September 2021. The lava touched the water and created a gas that is toxic.

## MAIN RESULTS

The gases produced by the volcano are: SO<sub>2</sub>, frequently appear to increase the oxidizing capacity of the atmosphere resulting in very fast warming. Some rain becomes extreme when millions of cubic kilometers of basalt are erupted in much less than one million years. CO<sub>2</sub> is also produced by a volcanic eruption.

Gases are produced when lava touches the water. The effect of these gases are:

- CO<sub>2</sub>: Increases in atmospheric carbon dioxide are responsible for about two-thirds of the total energy imbalance that is causing Earth's temperature to rise. A volcano can release 10 million tonnes of CO<sub>2</sub> in 9 hours.
- HCl: It thus forms a component of acid rain. It also contributes to the processes that cause photochemical smog.
- SO<sub>2</sub>: SO<sub>2</sub> and other sulfur oxides can contribute to acid rain which can harm sensitive ecosystems.

CONCLUSION: Our conclusion is that it clearly affects climate change because the gases produced by the eruption are raised up in the sky and they are bad for people's and animal's health.

Figure 2: Satellite images - before and after the eruption

## ACTIONS TO HELP LESSEN TO THE PROBLEM

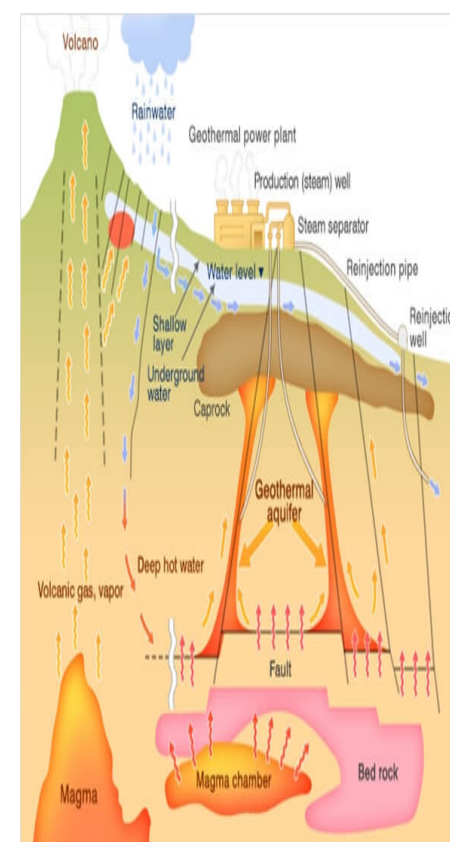


Figure 3: Are going to be the volcanoes a source of Renewable Geothermal Energy?

Right now we can't fix the problem completely. But we can balance it by reducing gases we make with this tricks:

- Use more electric alternatives (electric cars...).
- Switch to renewable energy.
- Plant more trees.
- Be more conservative with energy usage

Figure 1: Risk from toxic gas 'low' after Canaries volcano lava reaches sea