

After 3 months, La Palma eruption ended, Canaries

Sentinel-2 MSI acquired on 26 August 2021 at 12:03:19 UTC
Sentinel-1 CSAR IW acquired on 10 September 2021 at 07:11:03 UTC
Sentinel-5P TROPOMI SO2 acquired on 13 December 2021 at 14:37:40 UTC
Sentinel-1 CSAR IW acquired on 15 December 2021 at 07:11:02 UTC
Sentinel-2 MSI acquired on 03 January 2022 at 12:03:19 UTC

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[2D Layerstack](#)

Fig. 1 - S1 (29.08.2021; 04 & 10.09.2021) - La Palma is a part of the Canaries Archipelago, west of Southern Morocco.

[2D view](#)



Fig. 2 - S1 (29.08.2021; 04 & 10.09.2021) - It is a volcanic island built around its large northern volcano, Cumbre Vieja.

[3D view](#)

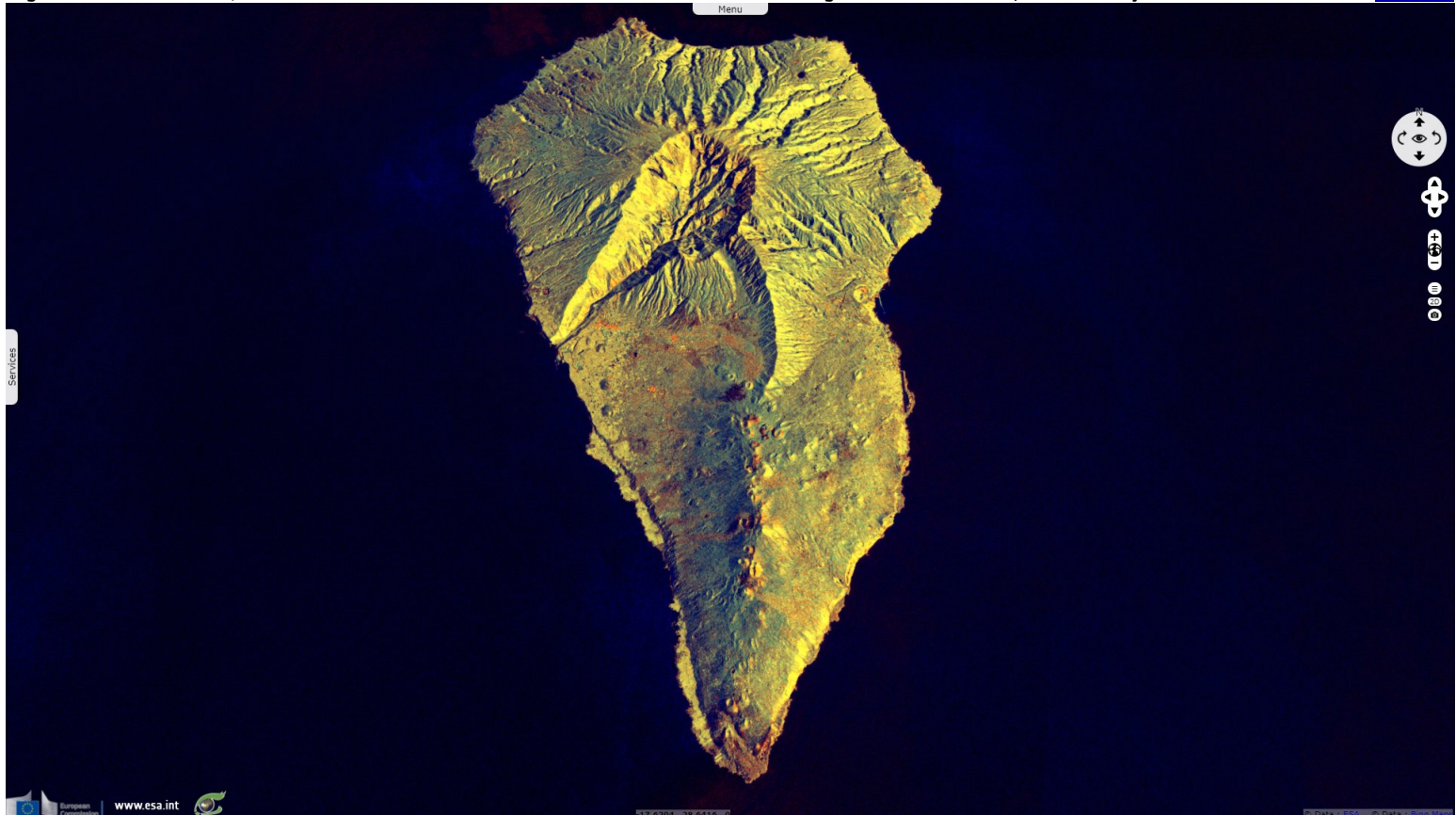
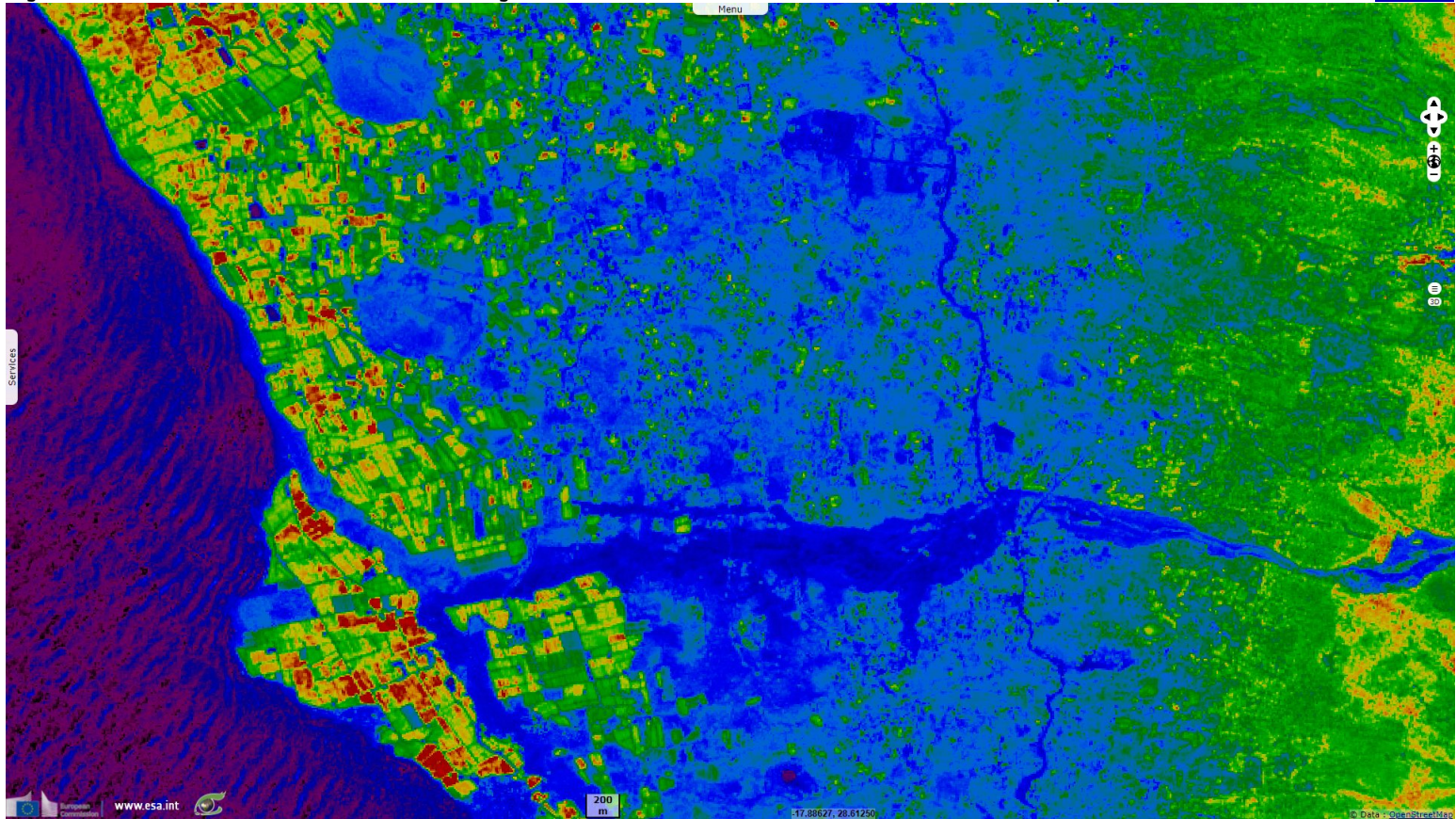


Fig. 3 - S2 (26.08.2021) - Normalized Difference Vegetation Index (NDVI) on the affected area before the eruption.

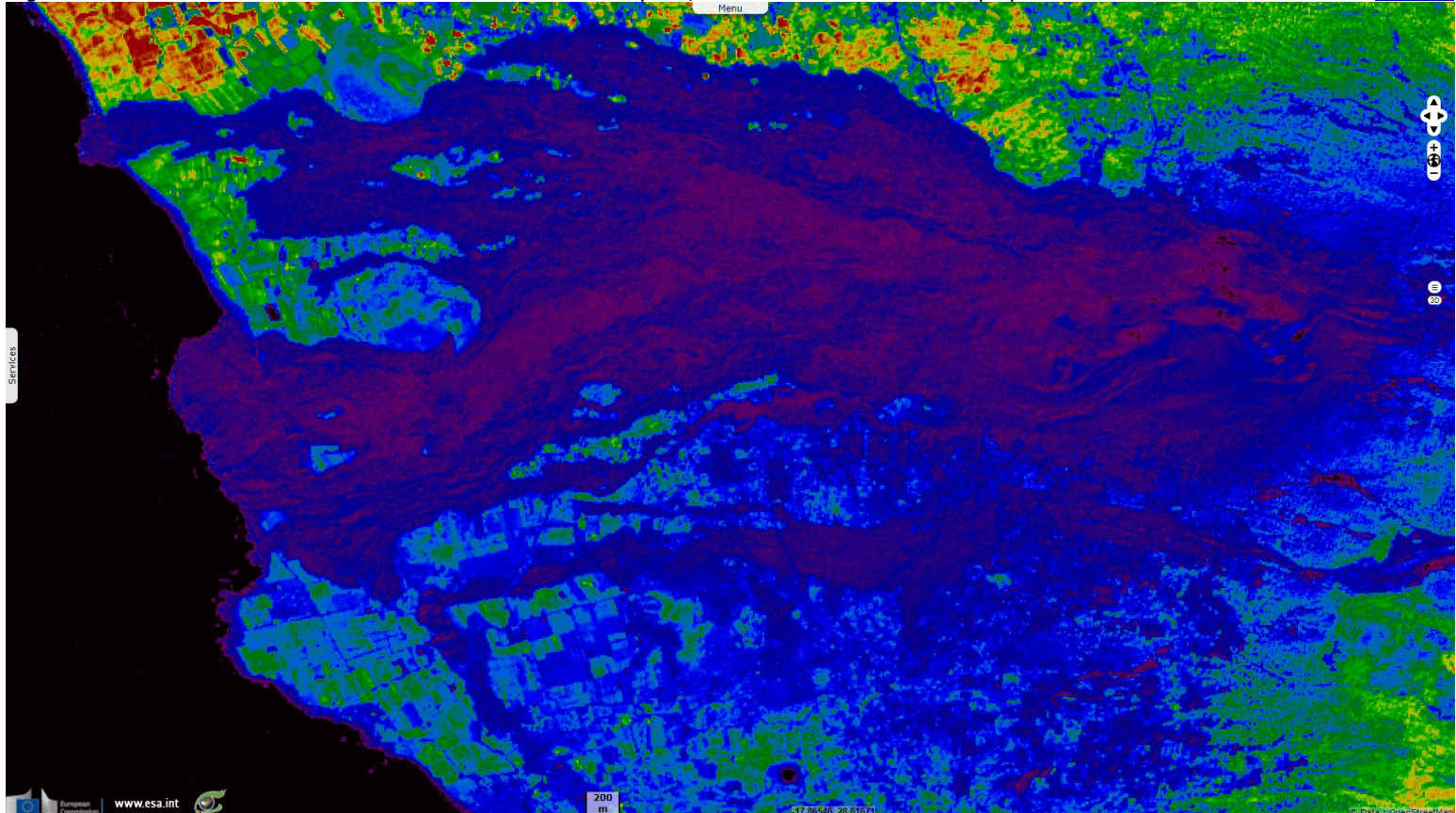
[2D view](#)



On 15 December 2021, Guillermo Vega [wrote](#) for the English version of El Pais: "The activity of the volcano on the Canary Island of La Palma stopped completely on Tuesday, nearly three months after it first began to erupt. "It is not emitting lava, nor sulfur dioxide, nor is it registering any tremors or seismic activity," sources from the National Geographic Institute (IGN) confirmed."

Fig. 4 - S2 (03.01.2022) - NDVI on the affected area after the eruption, lava flows show in blue and purple.

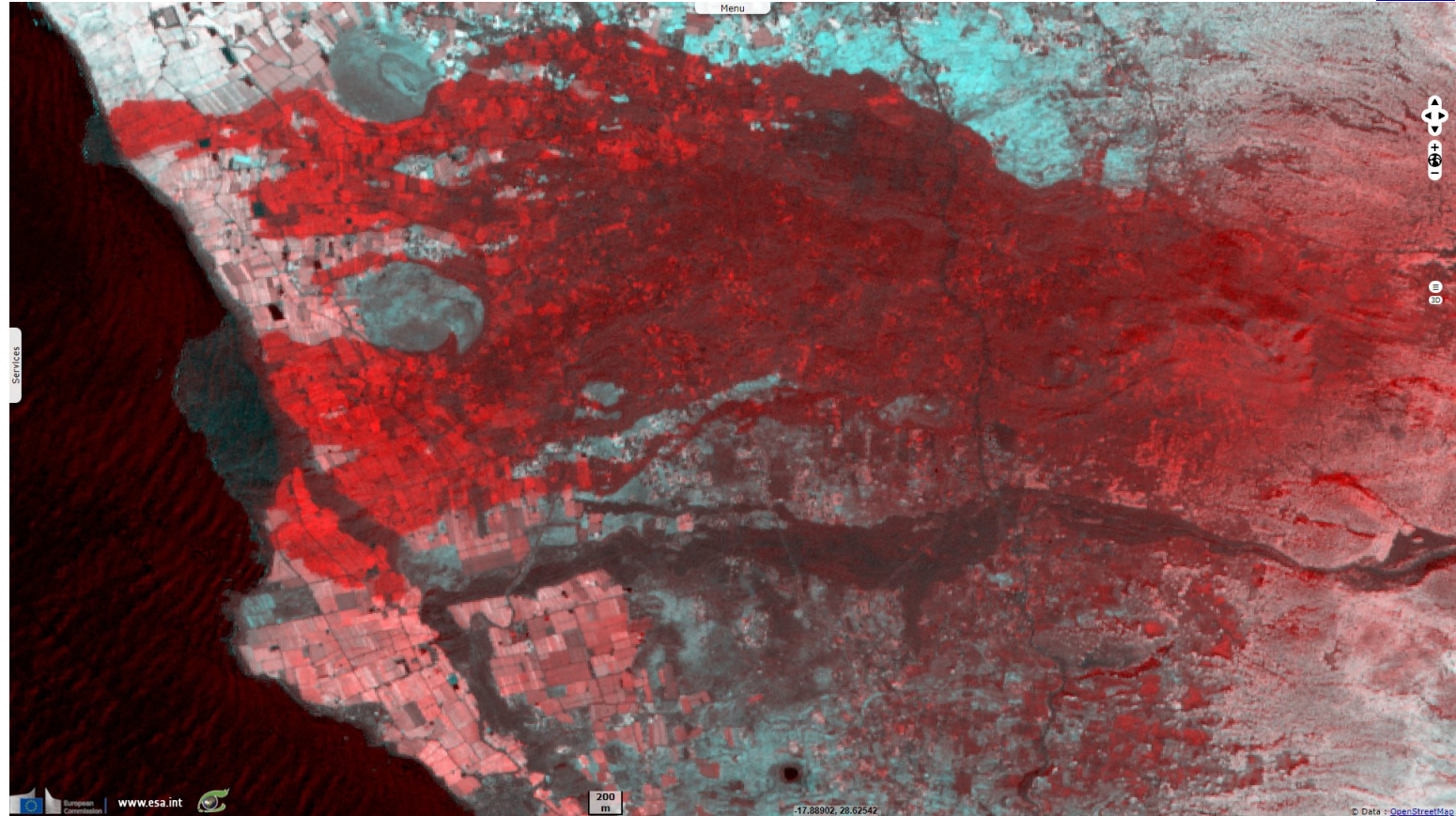
[2D view](#)



"The new – and still unnamed – volcano on La Palma began to erupt on September 19. Its 86 days of life have made it the longest eruption in the history of the Canary Island, after exceeding the length of activity of Tehuya in 1585."

Fig. 5 - S2 (26.08.2021, 03.01.2022) - NDVI1, NDVI2, NDVI2 - The loss of vegetation cover (and deeper winter shadows), show in red, highlighting the lava flows.

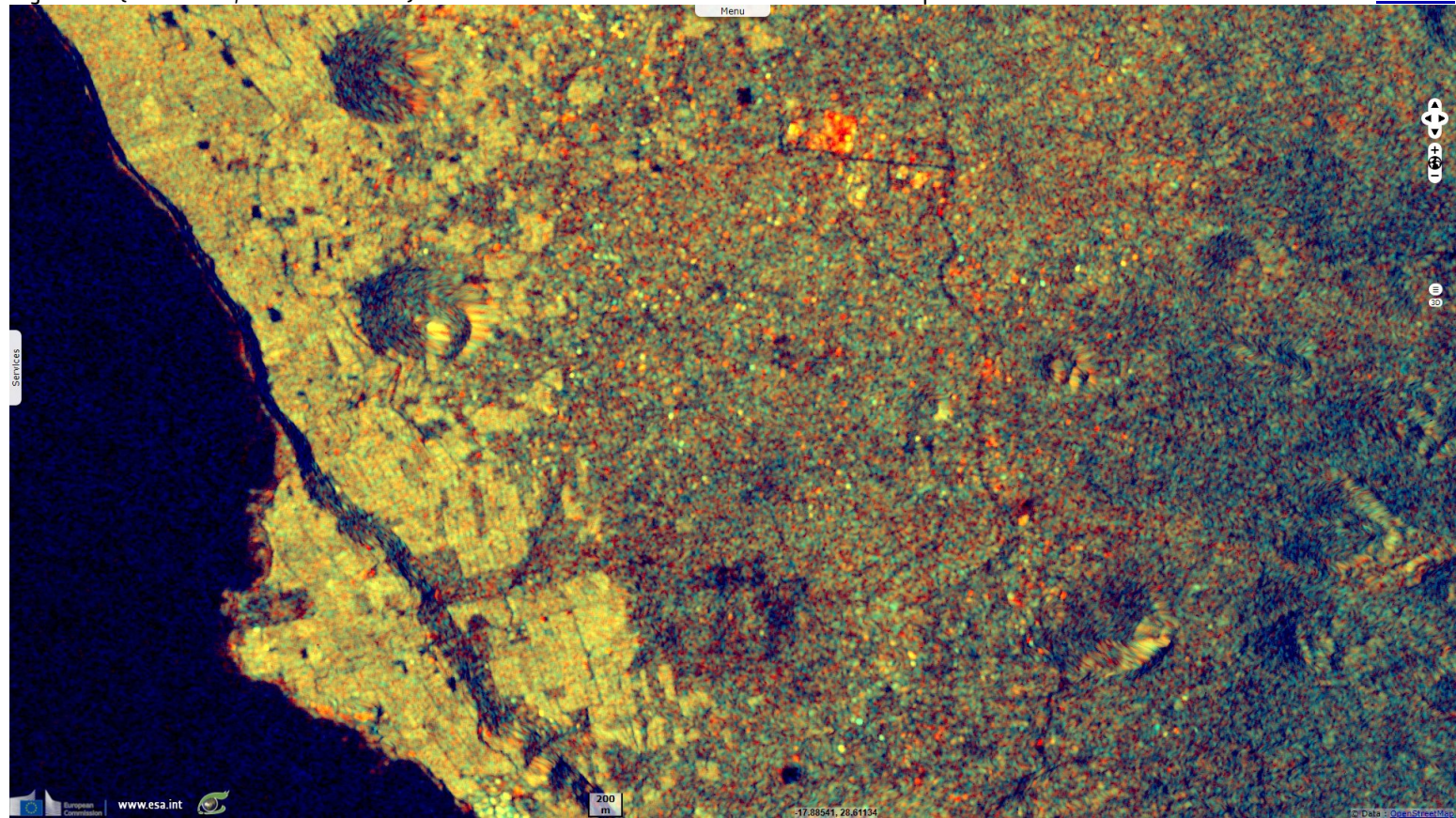
[2D view](#)



With flows up to 70 metres thick in places, a total of about 200 million cubic metres of lava and ash was expelled from six different craters, all newly formed during the eruption.

Fig. 6 - S1 (29.08.2021; 04 & 10.09.2021) - Radar view of south-west La Palma before the eruption.

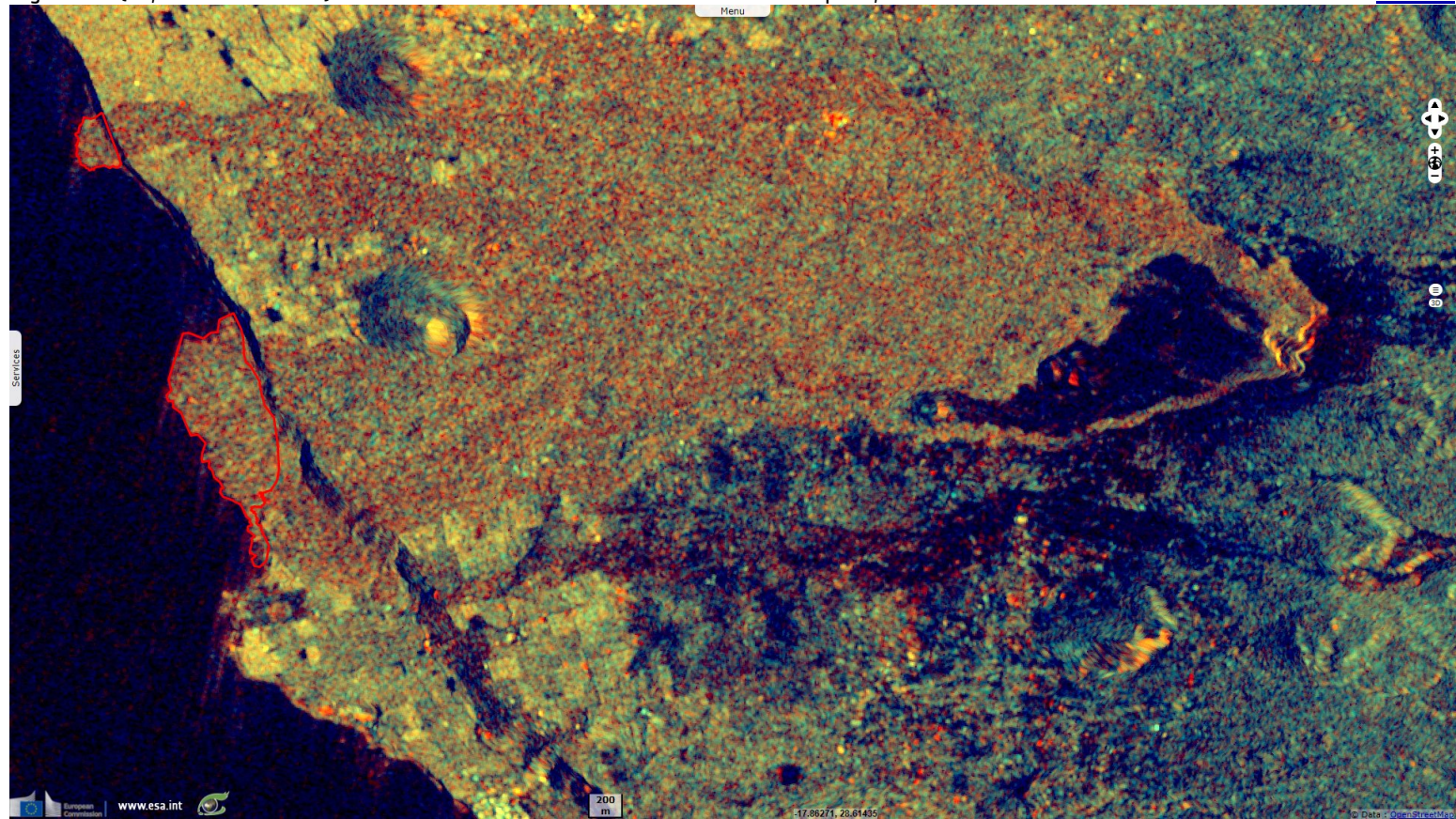
[2D view](#)



The La Palma volcano has a volcanic building about 200 m high on its base, with a total altitude of approximately 1100 m above sea level, around an eruptive fissure visible from the sky, with at least 6 craters

Fig. 7 - S1 (15, 21 & 27.12.2021) - Radar view of south-west La Palma after the eruption, the flows show in reddish.

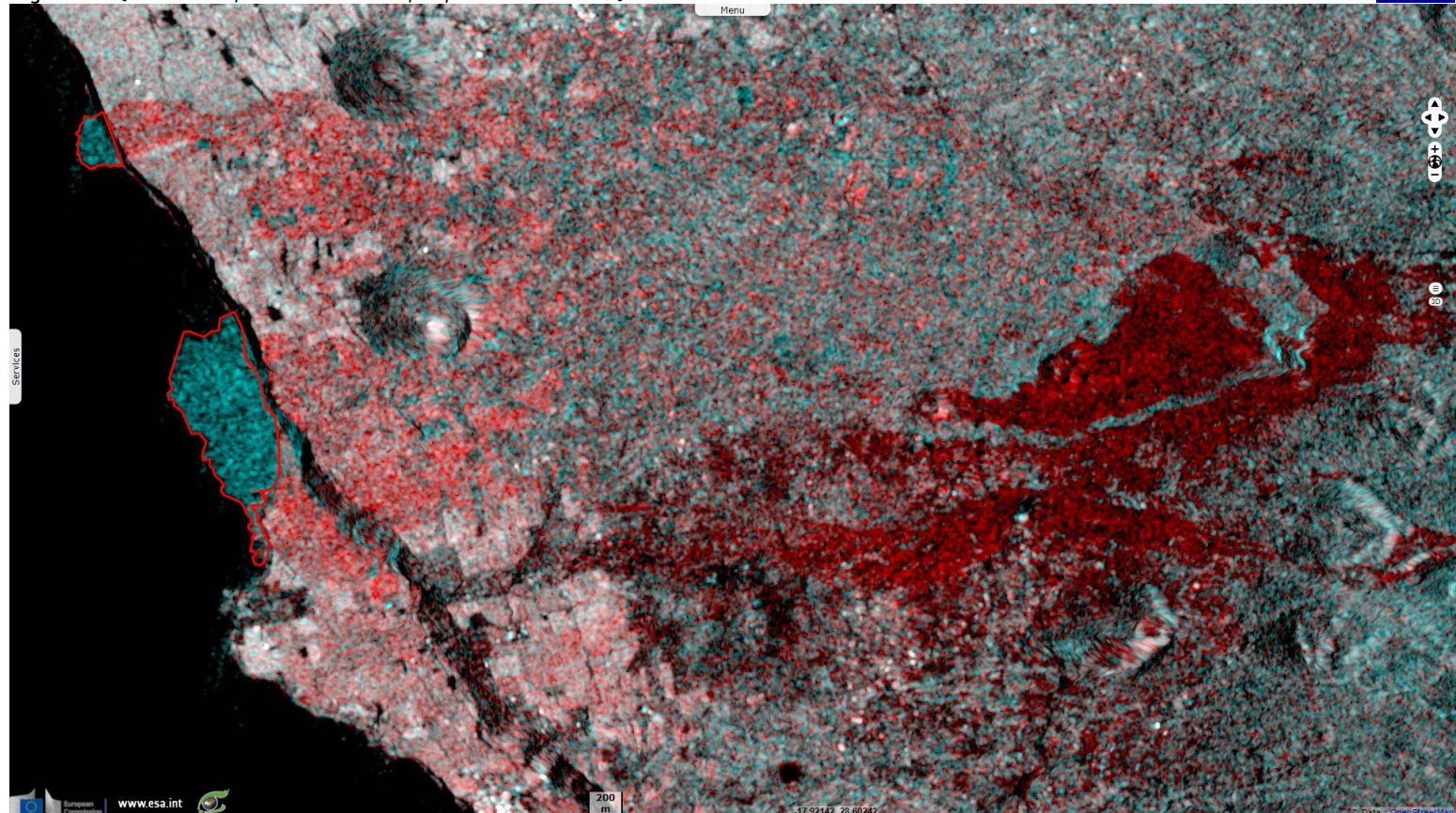
[2D view](#)



But if the volcano seems to be well and truly asleep, all is not over and the area remained very dangerous for several weeks. The lava, although solidified on the surface, is still incandescent at the base of the flows, as shown in several videos made by Involcan scientists. In some places, the heat released is still 1000°C several days after the end of activity.

Fig. 8 - S1 (29.08.2021; 04 & 10.09.2021; 15, 21 & 27.12.2021) - The area covered in radar-absorbant cinders shows in red.

[2D view](#)



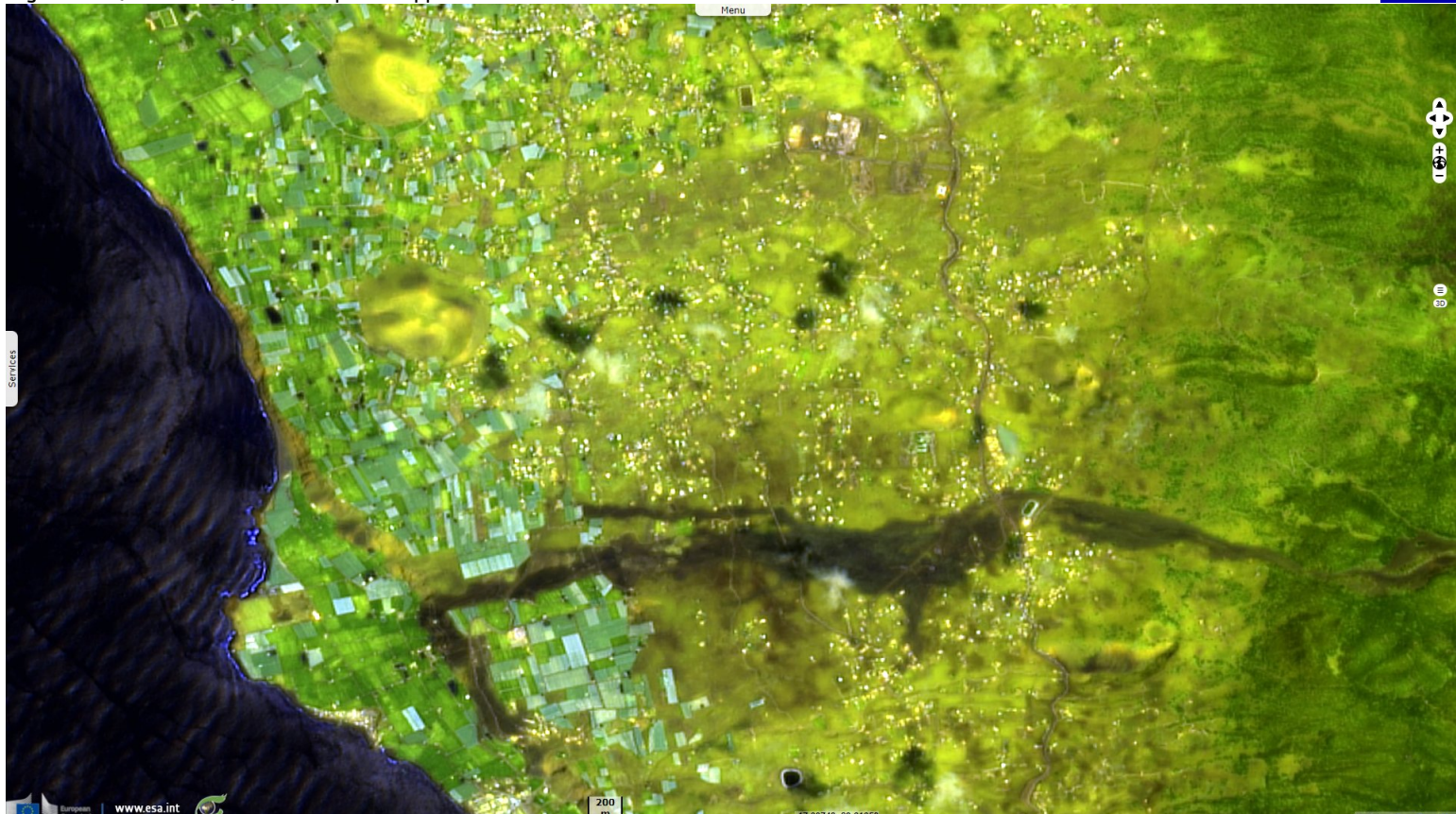
Created by solidified lava, two new deltas are visible in the sea. They show in cyan, delimited by a red polygon.



From October, two new vents caused further eruptions from the Cumbre Vieja volcano - Source: [BBC](#)

Fig. 9 - S2 (26.08.2021) - The eruption happened in one of the areas of La Palma where the habitat is the most dense.

[2D view](#)

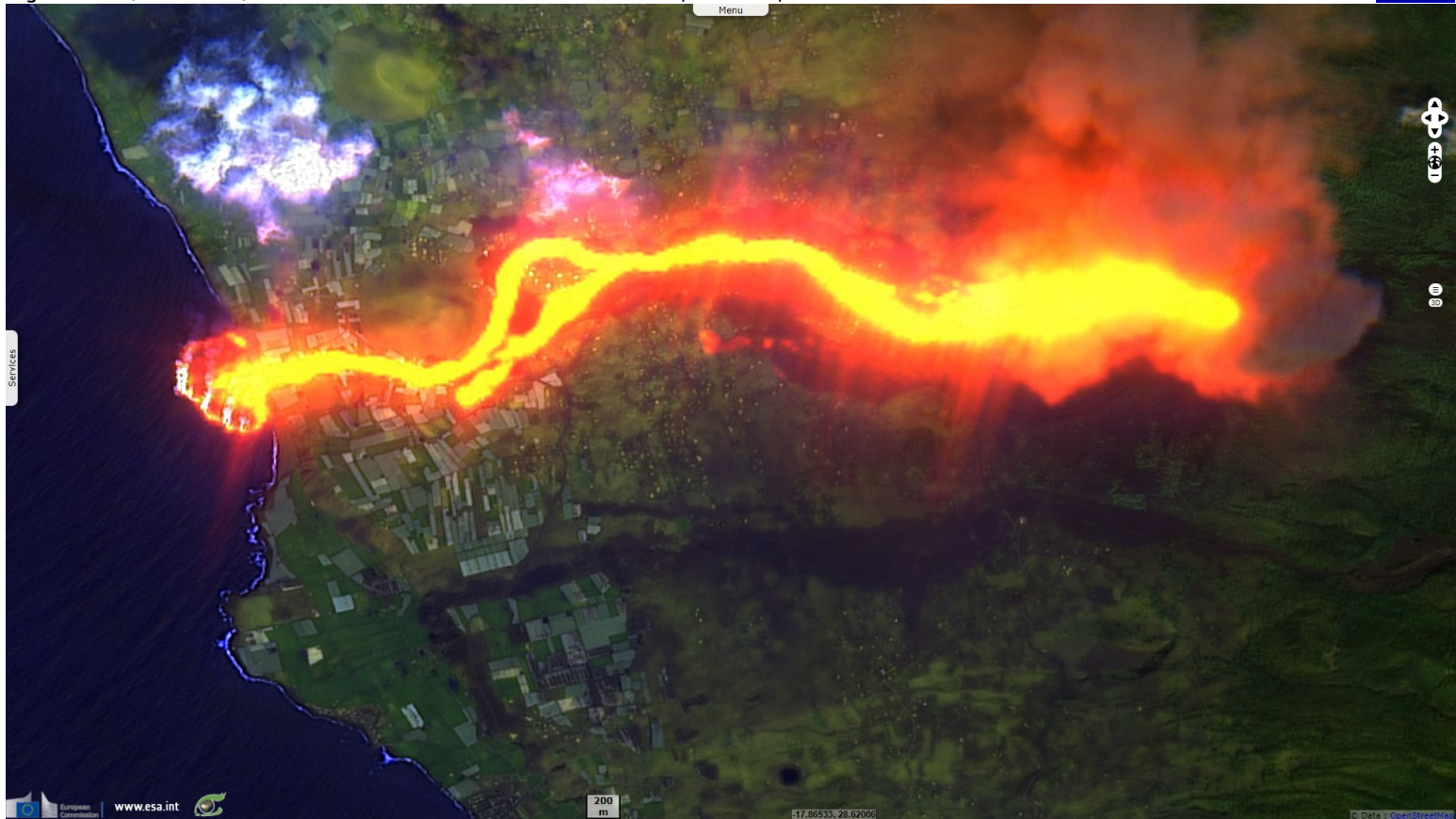


Also on 15 December 2021, Aritz Parra [published](#) in Associated Press: "The eruption, which began on Sept. 19, is the longest on record on La Palma and has been a milestone for islanders, many of whom live from farming and tourism. The volcanic Canary Islands are a popular European vacation

destination due to their mild climate."

Fig. 10 - S2 (30.09.2021) - View of the lava flow that formed the first, southern, new delta.

[2D view](#)



"No injuries or deaths have been directly linked to the La Palma eruption, and life has continued largely as normal on most of the island of 83 000 residents. However, 7000 people were forced to abandon their homes and farms as they were engulfed by lava and a section of La Palma's southwestern side is severely damaged." 33 000 people have been confined on La Palma due to bad air quality from volcano.

Fig. 11 - S2 (10.10.2021) - A second delta formed further north when another branch of the lava river reached the sea.

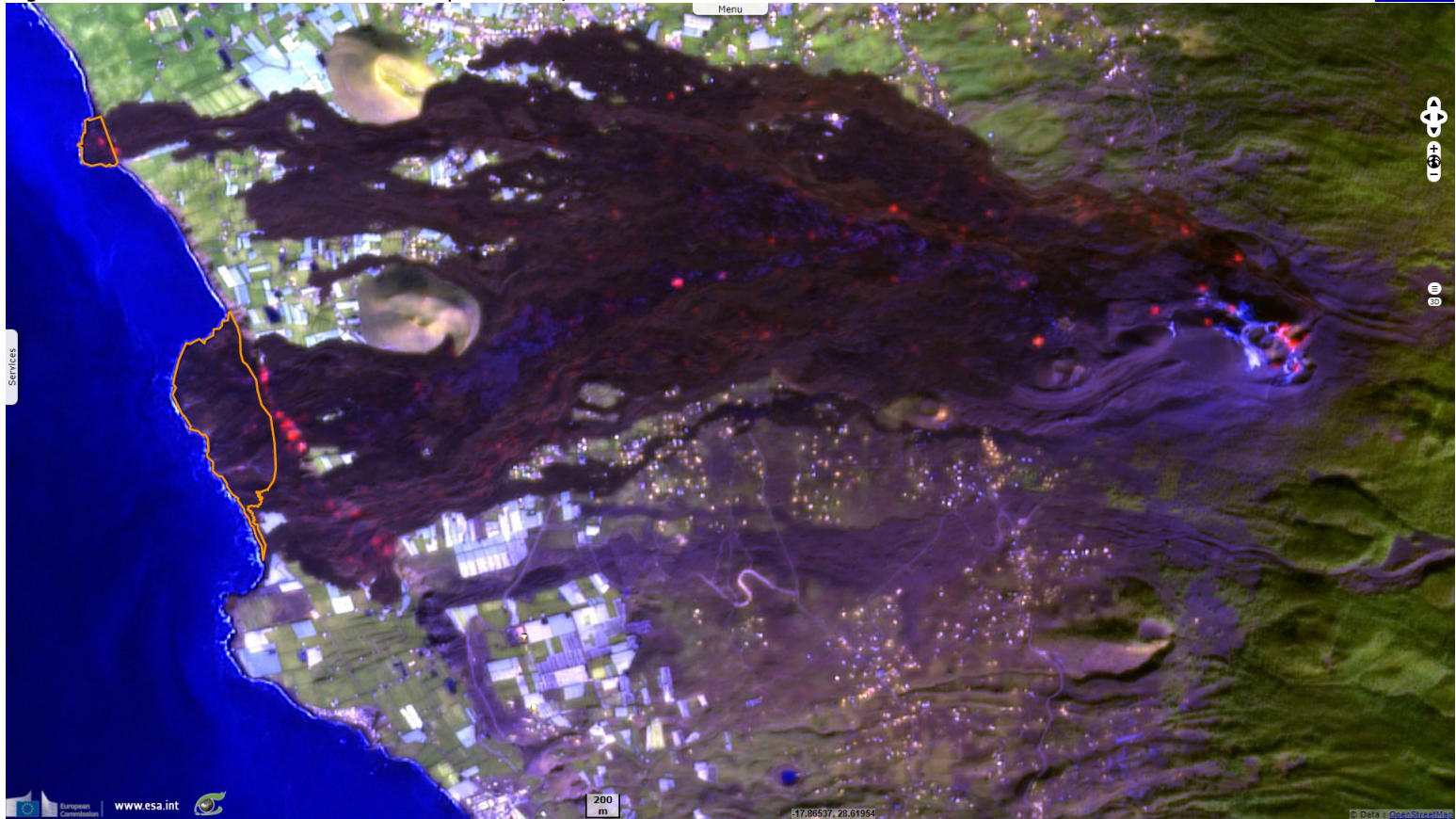
[2D view](#)



"Fiery molten rock flowing from Cumbre Vieja down toward the sea has destroyed around 3000 buildings. The fields of thick, black hardened lava have entombed banana plantations, ruined irrigation systems and cut off roads. The hardened lava covers 1219 hectares, according to the Canary Islands volcanic emergency unit, Pevolcan. Where the molten rock has poured into the Atlantic Ocean, rocky deltas have formed over 48 hectares, Pevolcan said."

Fig. 12 - S2 (03.01.2022) - View after the eruption ended, hot material is still visible.

[2D view](#)



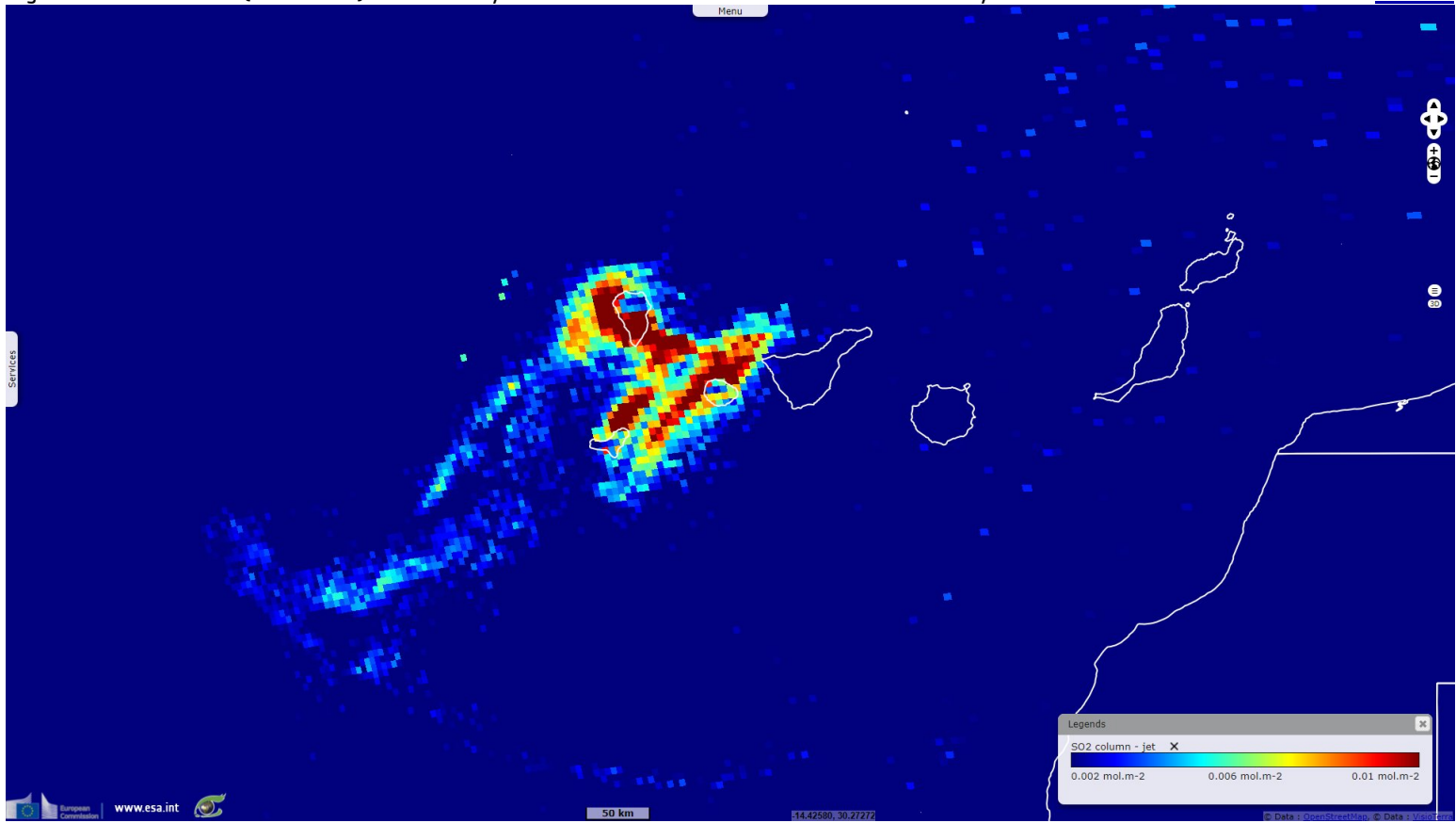
Compared to the area delimited in the red polygon above, the extension of the island several days later, delimited in orange, is smaller. It is likely due to the sea erosion of this unconsolidated material.



"A fissure is seen next to a house covered with ash on the Canary of La Palma, Spain, Dec. 1 2021" - Source: [Emilio Morenatti for Associated Press](#).

Fig. 13 - S5P TROPOMI (13.12.2021) - Sulfur Dioxide total column - The final emission before activity ended.

2D view



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