

Aftermath of Cyclone Eloise in South-East Africa

Sentinel-5P TROPOMI CLOUD acquired on 19 January 2021 at 10:09:30 UTC
Sentinel-3 SLSTR RBT acquired on 20 January 2021 from 06:41:40 to 06:44:40 UTC
Sentinel-3 OLCI FR acquired on 22 January 2021 at 06:31:46 UTC
Sentinel-1 CSAR IW acquired on 26 January 2021 from 03:08:53 to 03:10:33 UTC
Sentinel-2 MSI acquired on 28 January 2021 at 07:42:01 UTC

Author(s): Sentinel Vision team, VisioTerra, France - svp@visioterra.fr

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[2D Layerstack](#)

Fig. 1 - S5P TROPOMI (19.01.2021) - Cyclone Eloise formed on 17 January 2021 west of Madagascar.

[2D view](#)

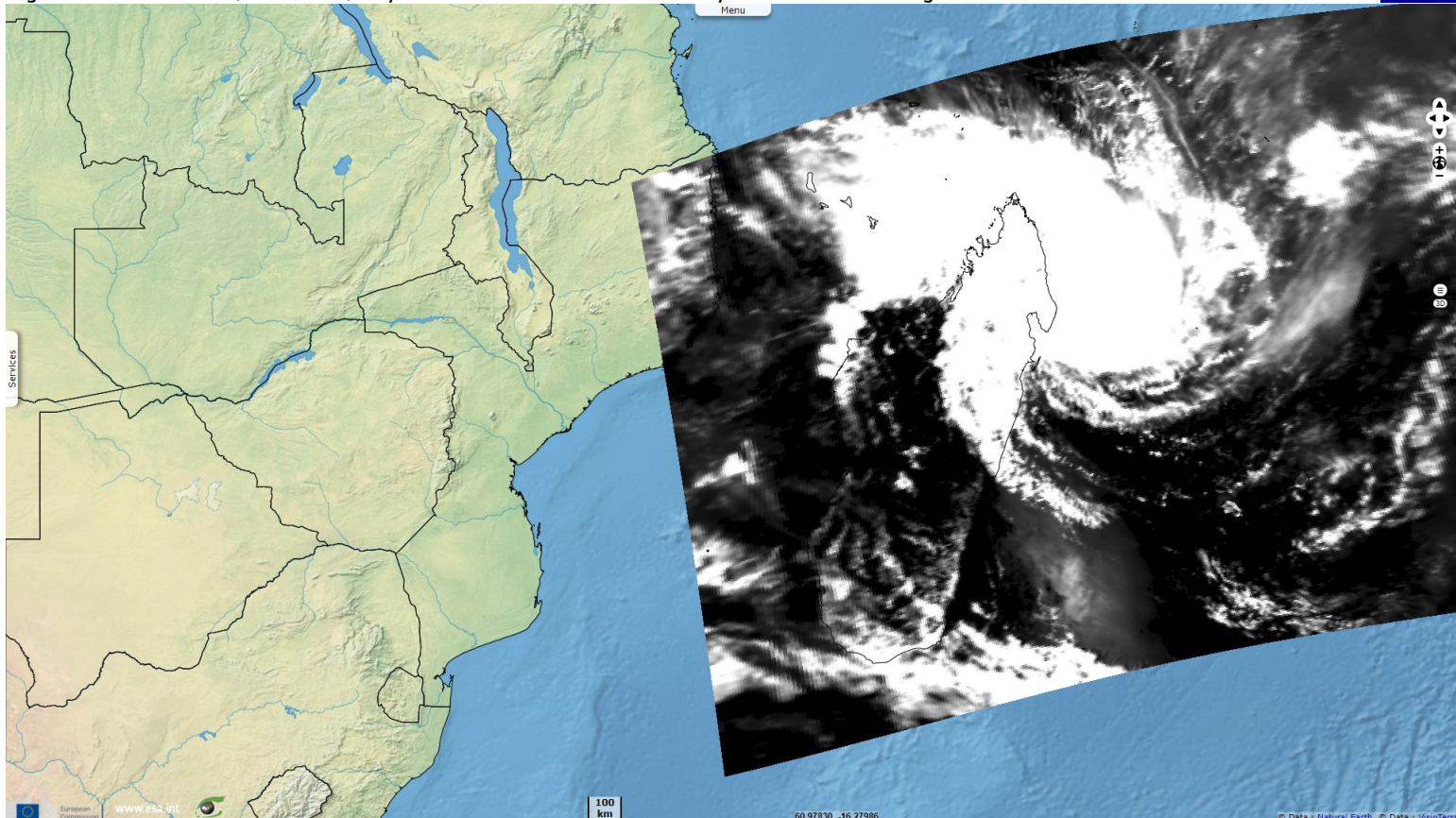


Fig. 2 - S3 SLSTR (20.01.2021) - It was the strongest cyclone to impact Mozambique since 2019.

[2D view](#)

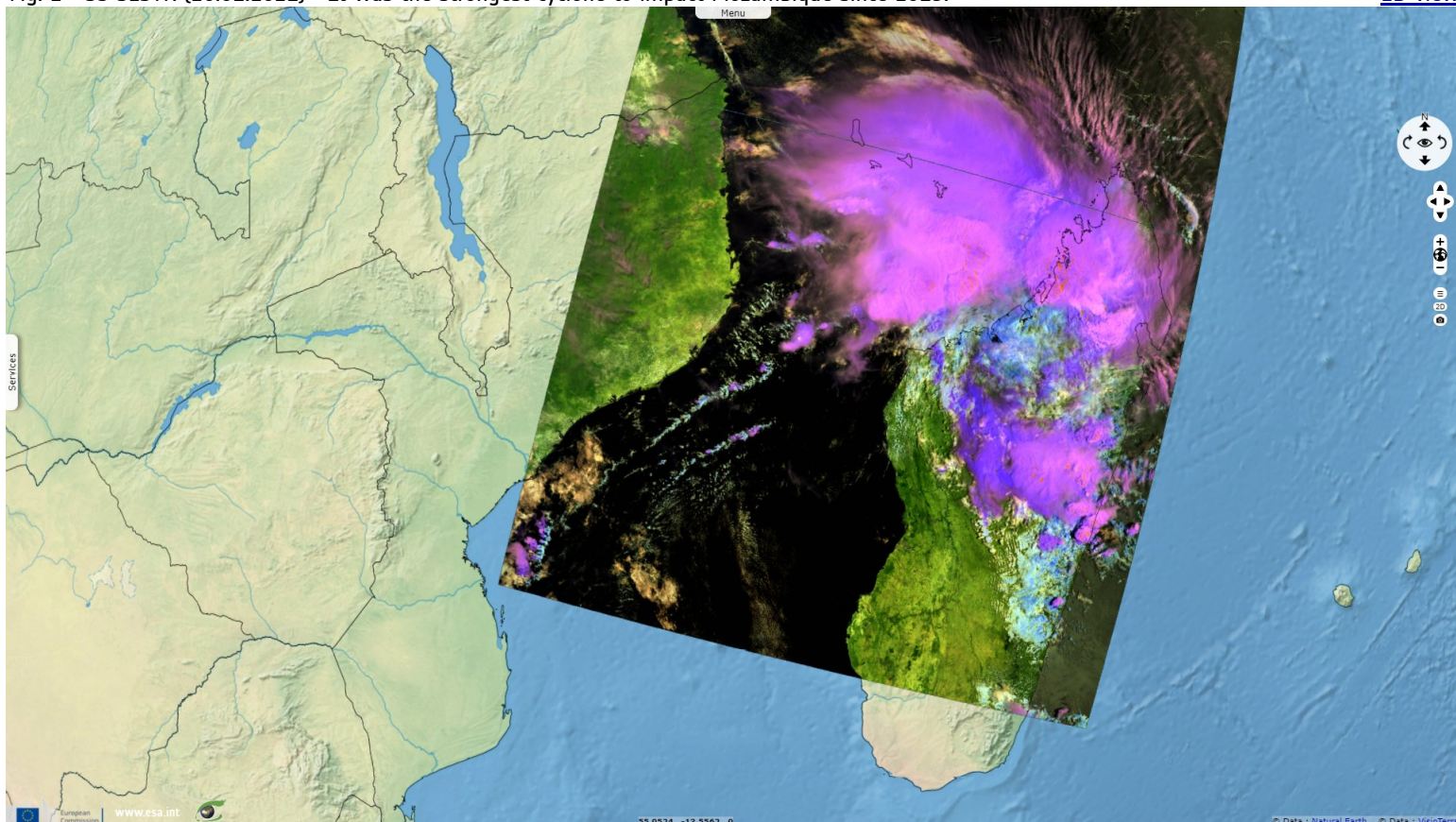
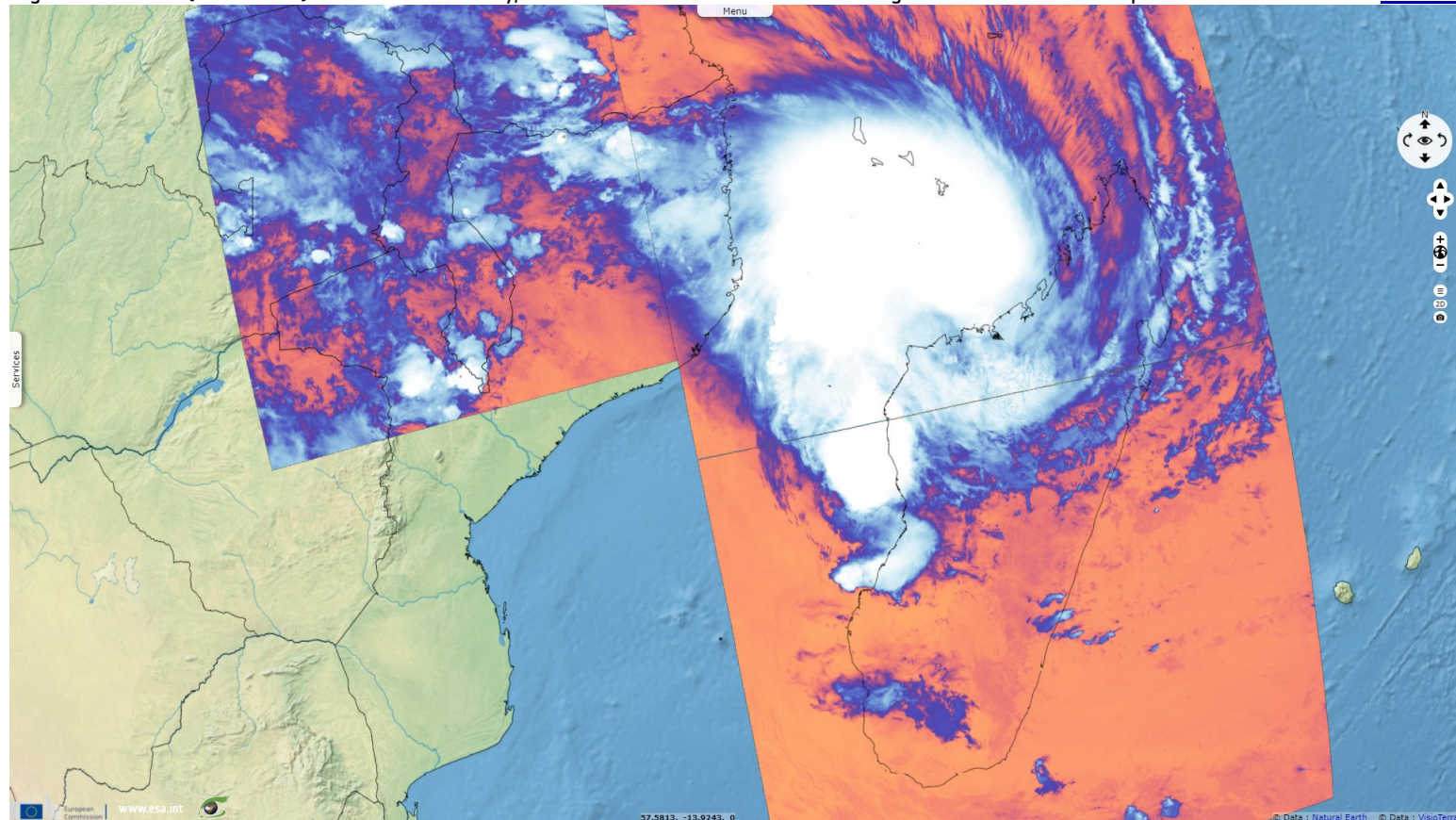


Fig. 3 - S3 SLSTR (20.01.2021) - Late on 19 January, Eloise made landfall in northern Madagascar as a moderate tropical storm.

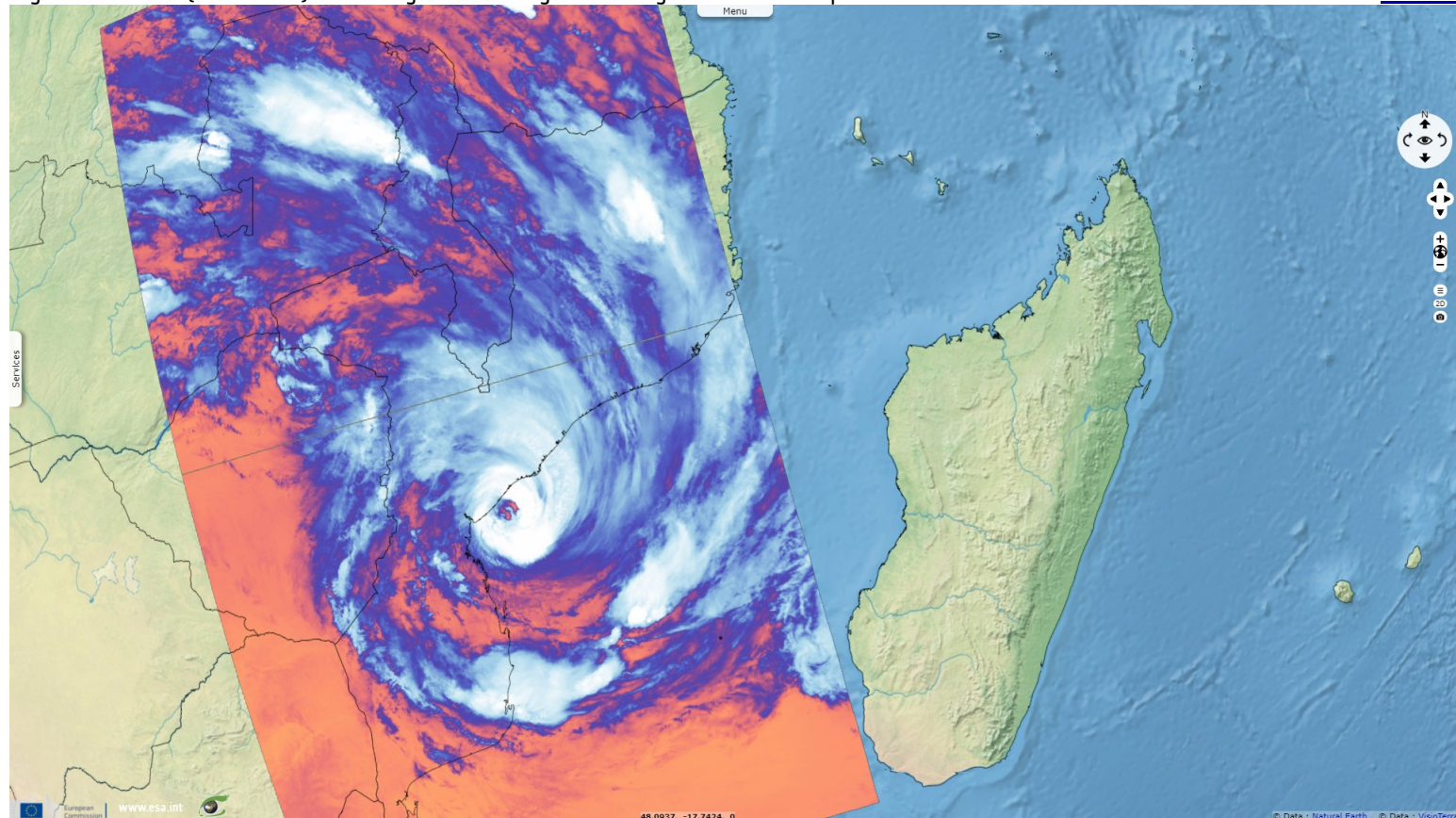
[2D view](#)



South-East Africa has been hit by Cyclone Eloise. It first hit Madagascar as a storm, then strengthened in the Mozambique canal and made landfall in Mozambique, continuing toward Zimbabwe. Floodlist reported the even on Madagascar as follows: : "*Tropical Cyclone Eloise formed over the Indian Ocean on 17 January and moved towards Madagascar, making landfall close to the coastal town of Antalaha in Antsiranana Province, on 19 January, with maximum sustained wind up to 95 km/h.*"

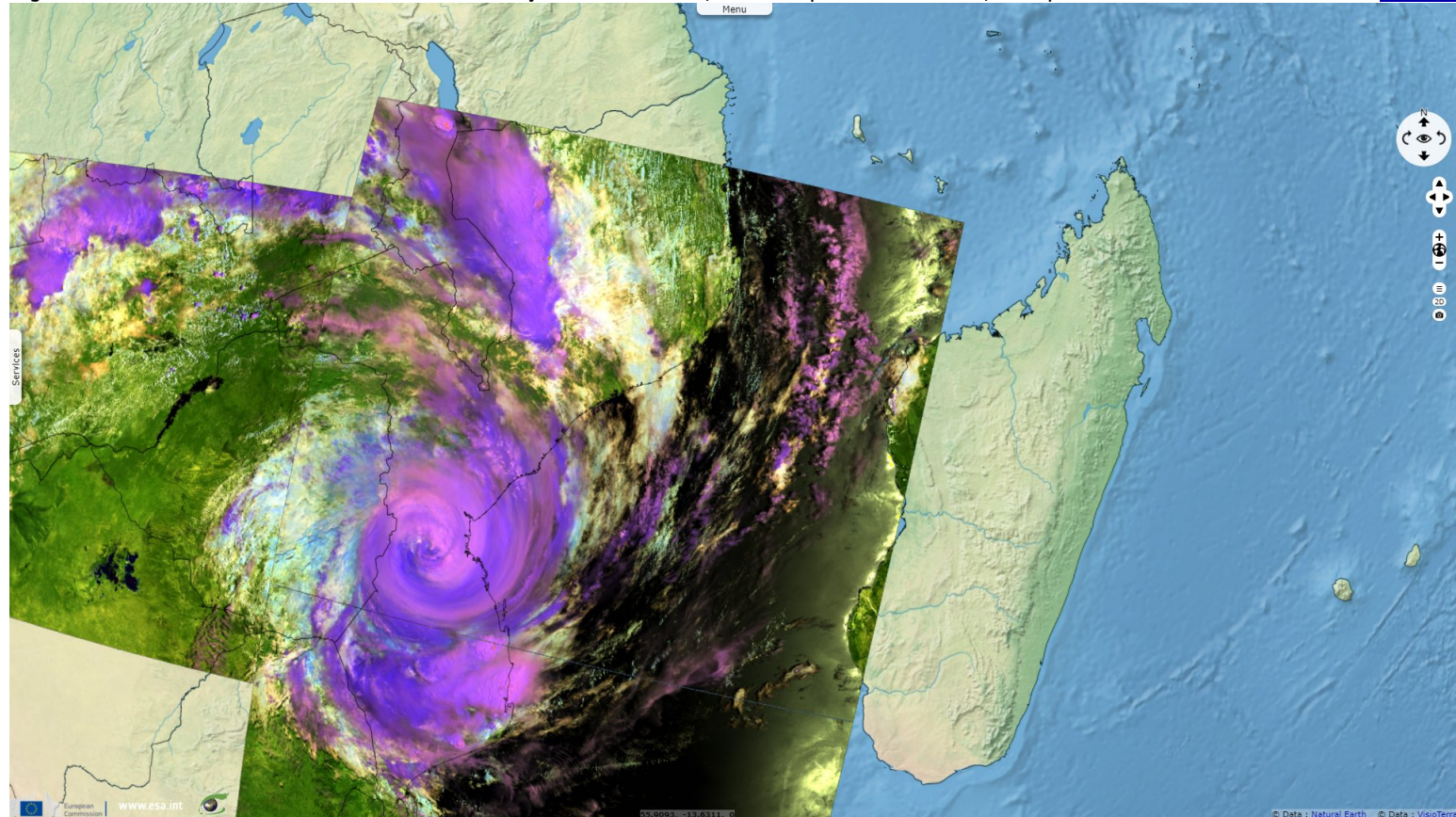
Fig. 4 - S3 SLSTR (22.01.2021) - It strengthened during its crossing of the Mozambique Channel.

[2D view](#)



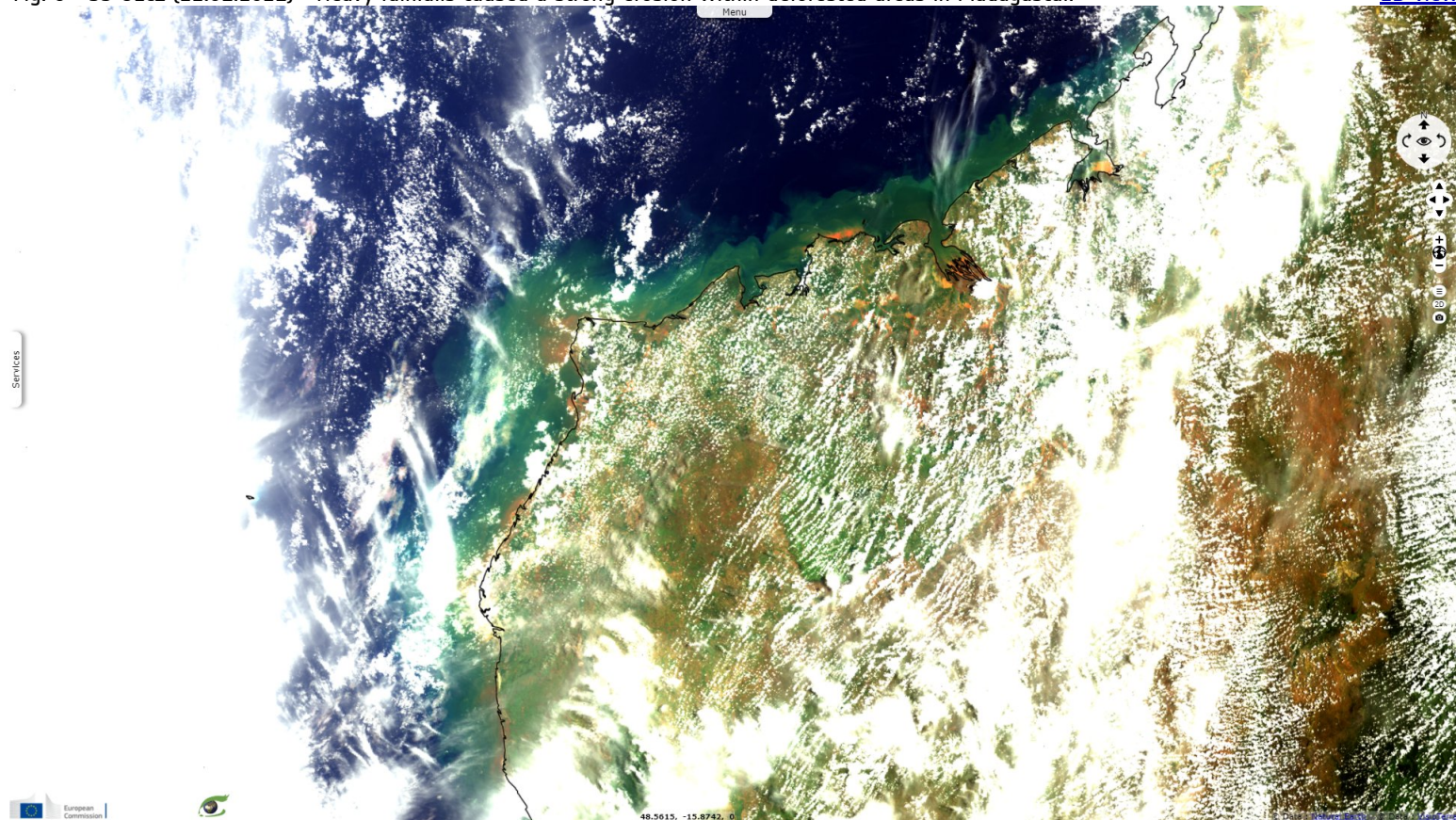
They deliver the following [estimation](#) of the toll: "As of 20 January, the UN Office for the Coordination of Humanitarian Affairs reported that more than 1000 people have been directly affected in Madagascar and more than 50 houses were destroyed, as Tropical Storm Eloise passed through Antalaha, Maroantsetra, Vavatenina and Toamasina districts. Quoting local sources, OCHA said 1 person was killed in the storm. The storm flooded 134 houses and destroyed 56, while nearly 100 schools were impacted, including 87 that were damaged and 11 destroyed, OCHA added."

Fig. 5 - S3 SLSTR (23.01.2021) - Eloise made landfall just north of Beira, Mozambique on 23.01.2021, a couple of weeks after Storm Chalane. [2D view](#)



The report [reminds](#): "The provinces of Inhambane, Manica, Niassa, Sofala, Tete and Zambezia have received between 200mm and 300mm of rains since 9 January, according to Mozambique National Meteorology Institute (INAM), and are predicted to receive heavy rains in the days ahead."

Fig. 6 - S3 OLCI (22.01.2021) - Heavy rainfalls caused a strong erosion within deforested areas in Madagascar. [2D view](#)

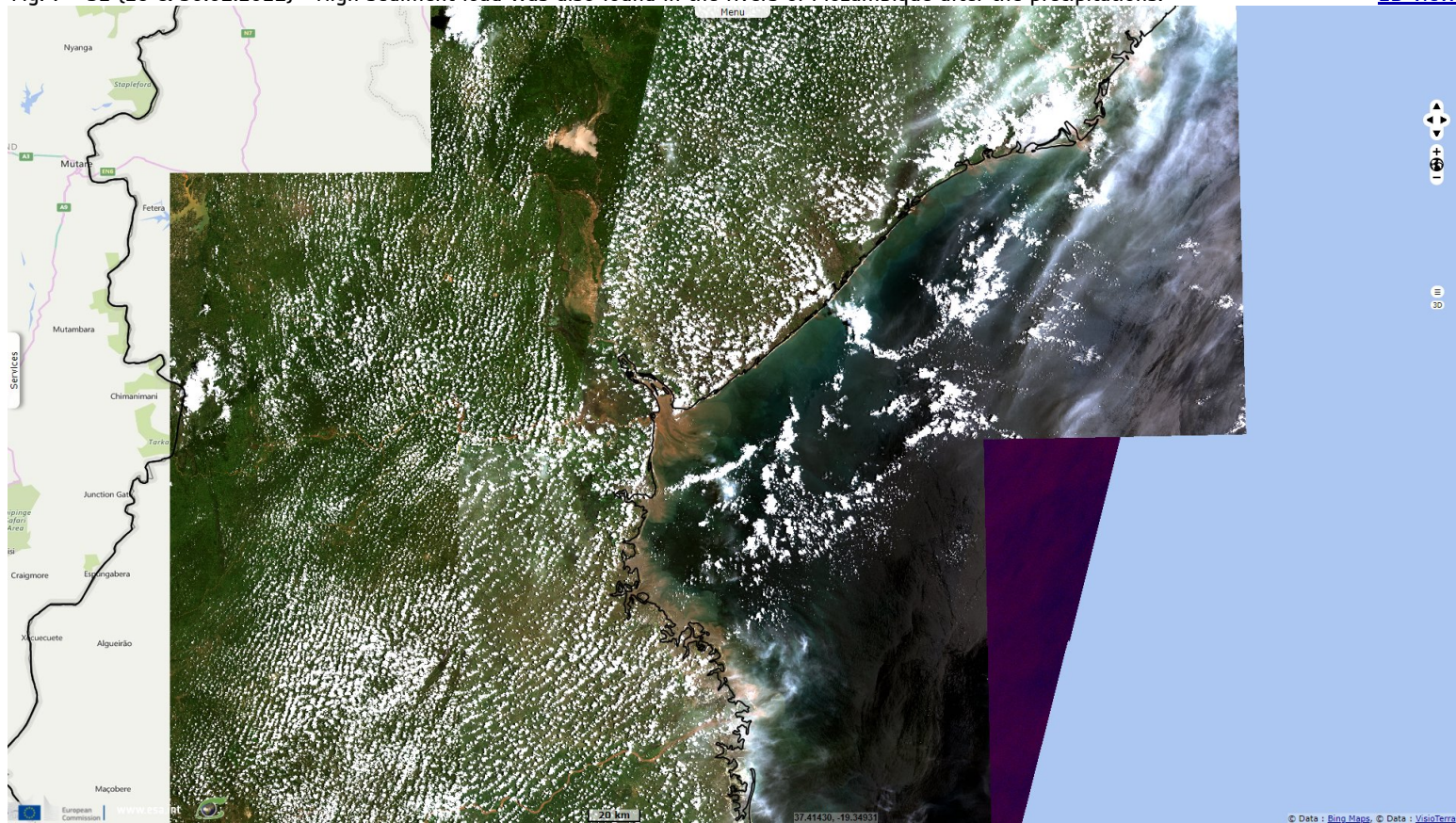




Damage on Madagascar assessed by the Red Cross - Source: [Croix-Rouge Malagasy](https://www.croix-rouge.mg/).

Fig. 7 - S2 (28 & 30.01.2021) - High sediment load was also found in the rivers of Mozambique after the precipitations.

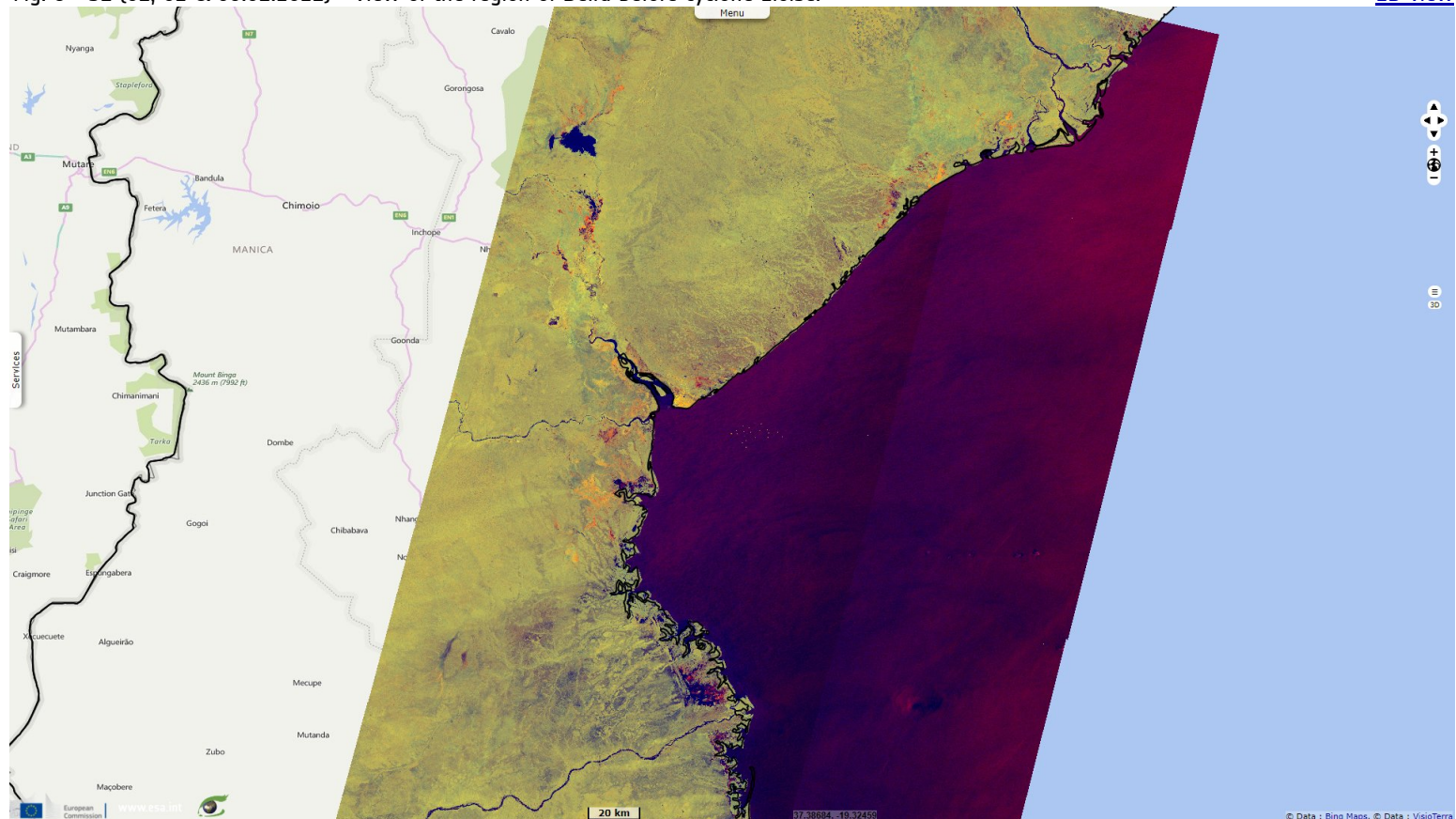
[2D view](#)



Another report was [published](#) after Mozambique was hit by Eloise: "Disaster authorities report that 6 people have died in Mozambique after Tropical Cyclone Eloise made landfall in Sofala Province early on 23 January 2021. In Mozambique, Eloise caused severe flooding in parts of Sofala Province, but also affected Zambezia, Inhambane and Manica provinces as the storm made its way west."

Fig. 8 - S1 (01, 02 & 06.01.2021) - View of the region of Beira before cyclone Eloise.

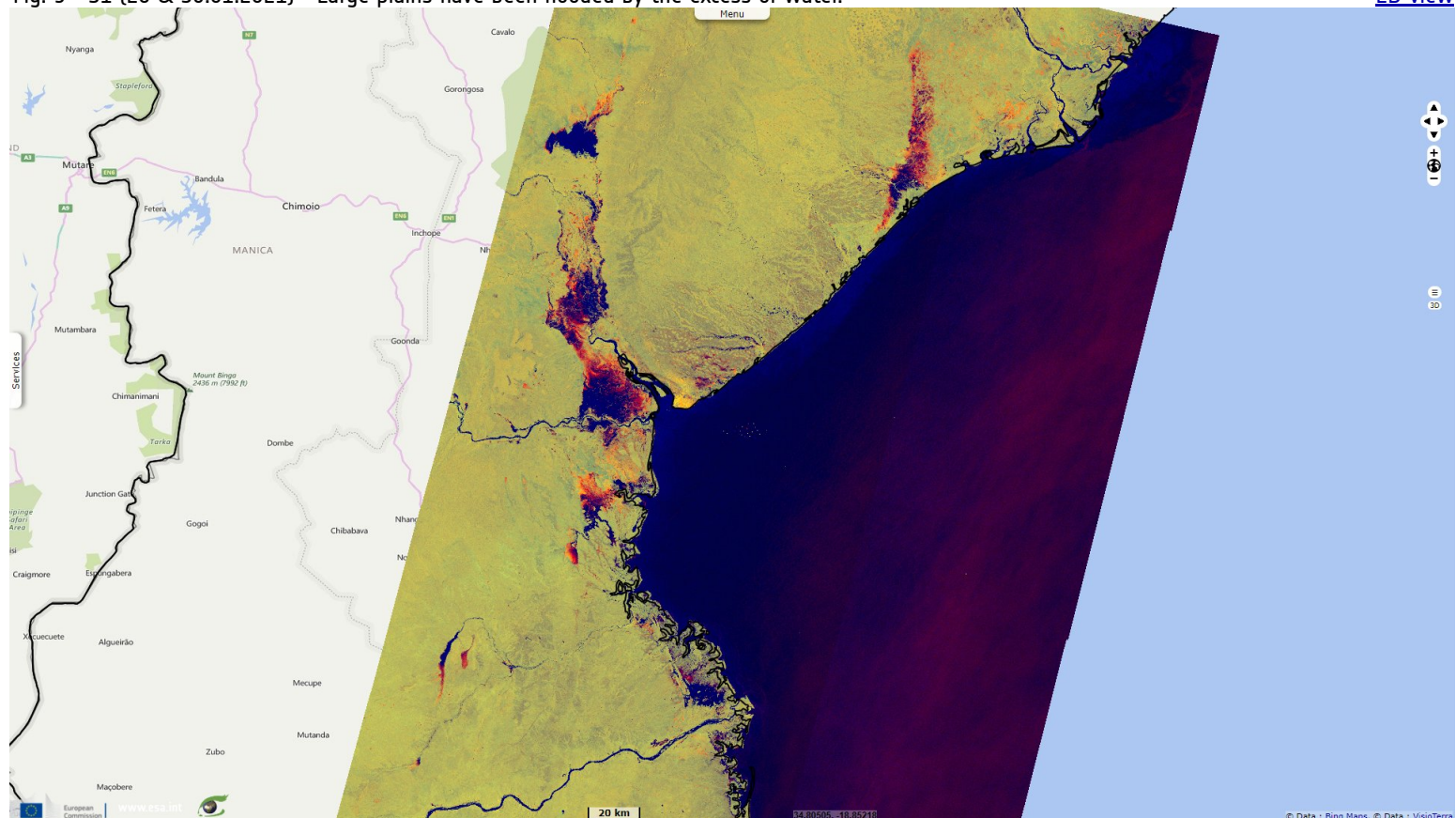
[2D view](#)



Due to the presence of floodplains, much larger areas have been affected by stagnant water: "Mozambique's National Institute for Disaster Risk Management and Reduction (INGD) reported over 175 000 people have been affected by the passage of the storm. INGD added that 6 people have died and 12 injured. Flooding caused severe damage to thousands of homes and over 8 000 people have been displaced, mostly in Sofala Province. INGD estimated that a total of 136 755 hectares of farmland has been flooded in affected areas."

Fig. 9 - S1 (26 & 30.01.2021) - Large plains have been flooded by the excess of water.

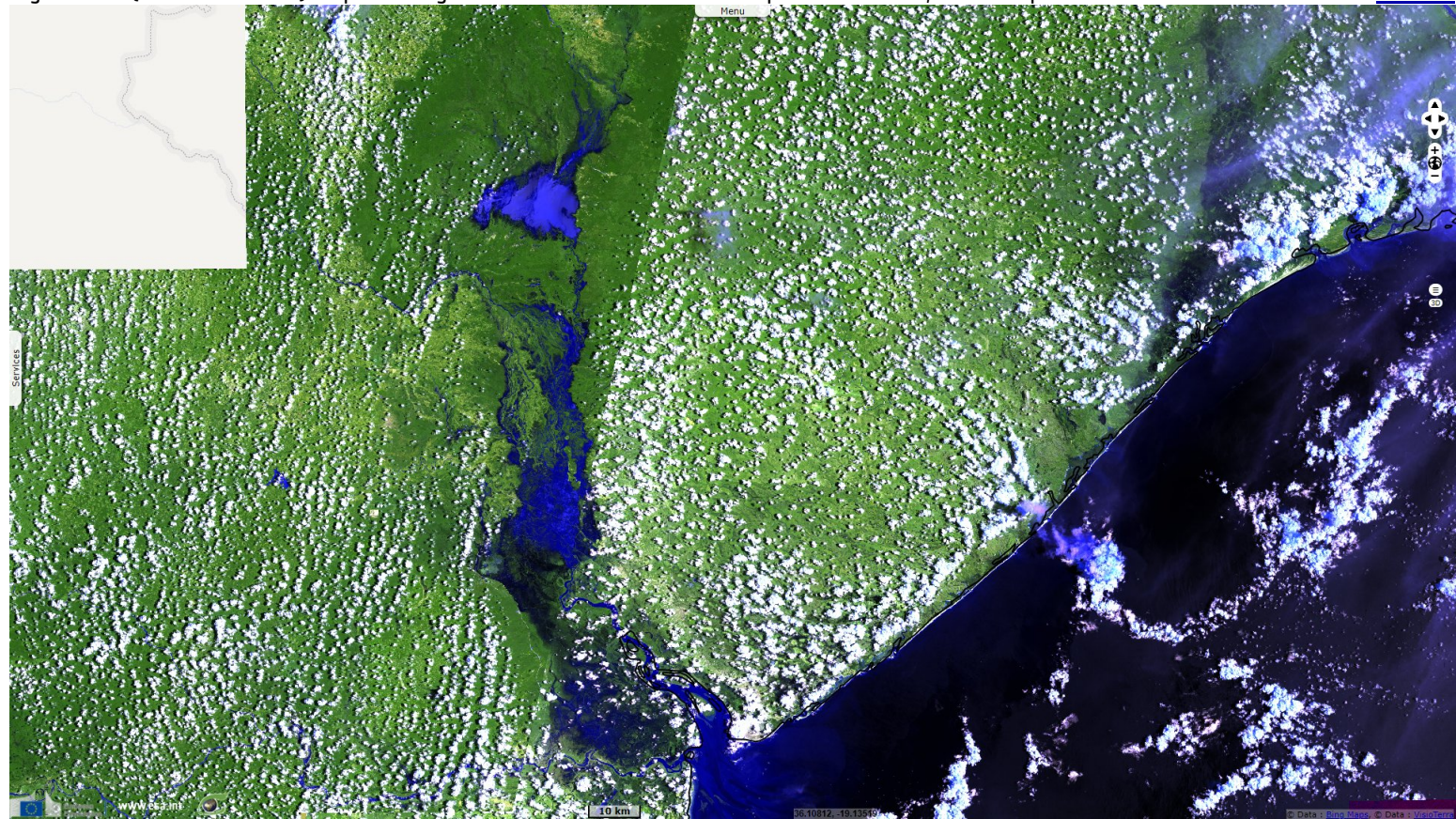
[2D view](#)



Floodlist [reports](#) several dams were forced to discharge excess water out of safety: "Heavy rain has increased river and dam levels. Zimbabwe National Water Authority (ZINWA) said the Tokwe Mukosi (also Tugwi Mukosi) dam near Ngundu, Bikita District in Masvingo Province was "discharging a combined average of 16 cubic meters per second", as of 25 January. Areas downstream along the Tokwe River have been placed on high alert. Mozambique also reported that due to heavy rainfall and discharge of water from the Chicamba dam and the Manuzi Reservoir, 19,000 people were affected in that area."

Fig. 10 - S2 (28 & 30.01.2021) - Optical images also show the flooded areas upstream of Beira, Mozambique.

[2D view](#)



Left: Flooded areas in mainland Africa - [Source](#)

Right: "Images of the spilling Manyuchi Dam. Areas downstream have been placed on high alert." - Source: [Zimbabwe National Water Authority](#)

Fig. 11 - S2 (28 & 30.01.2021) - Several villages have been largely affected.

[2D view](#)

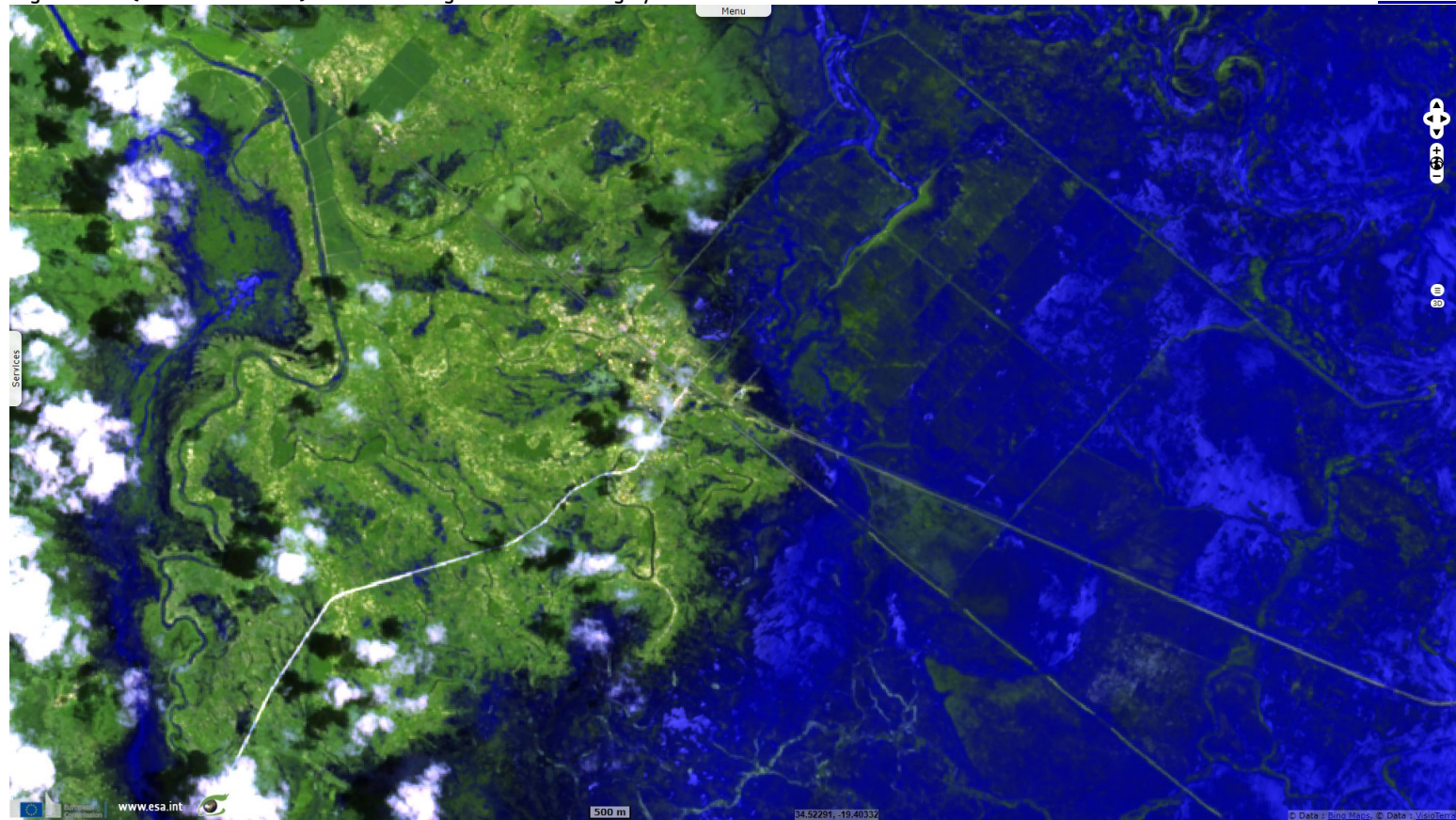


Fig. 12 - S1 (01, 02 & 06.01.2021) - Areas further south have also been affected.

[2D view](#)

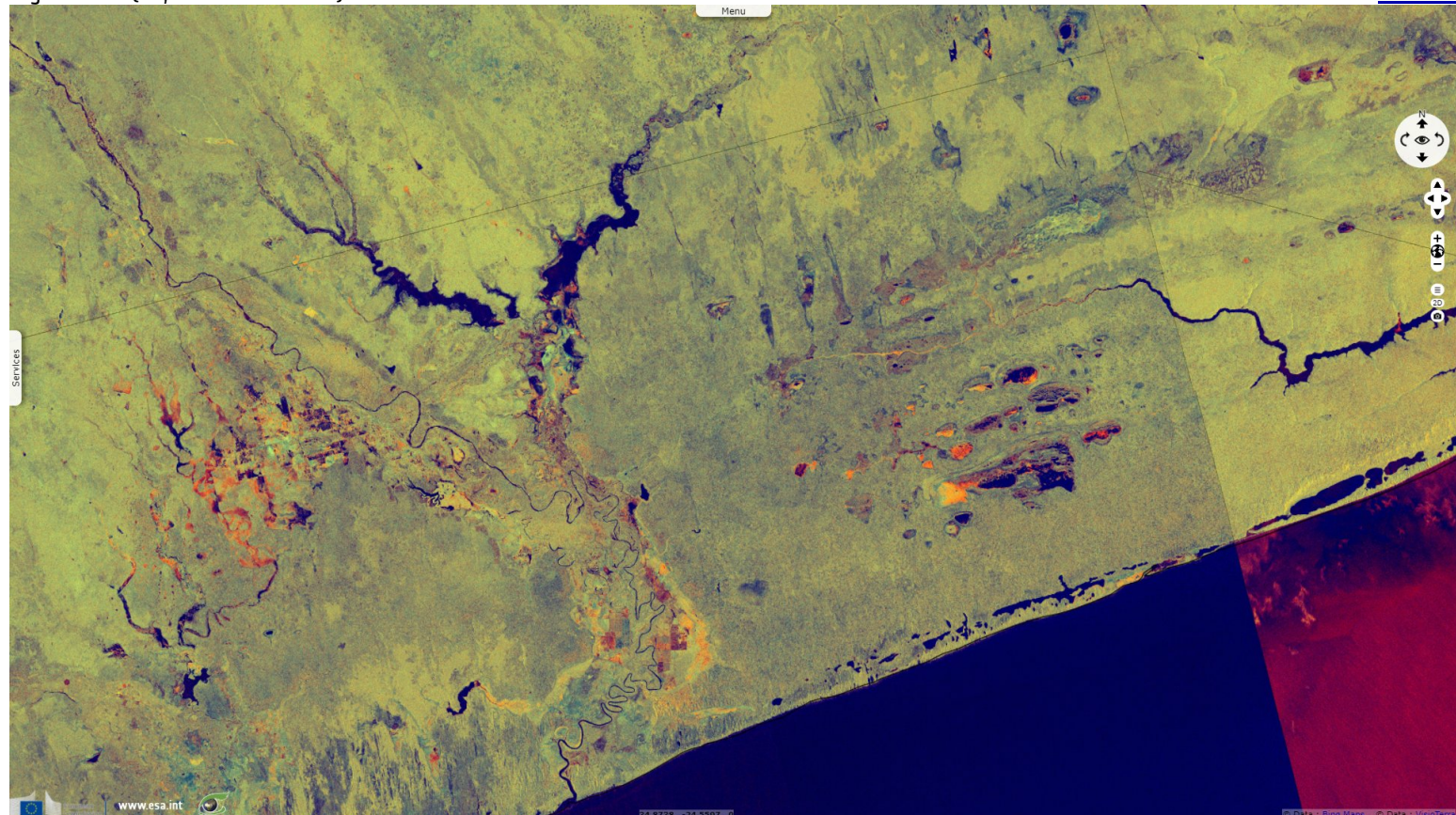
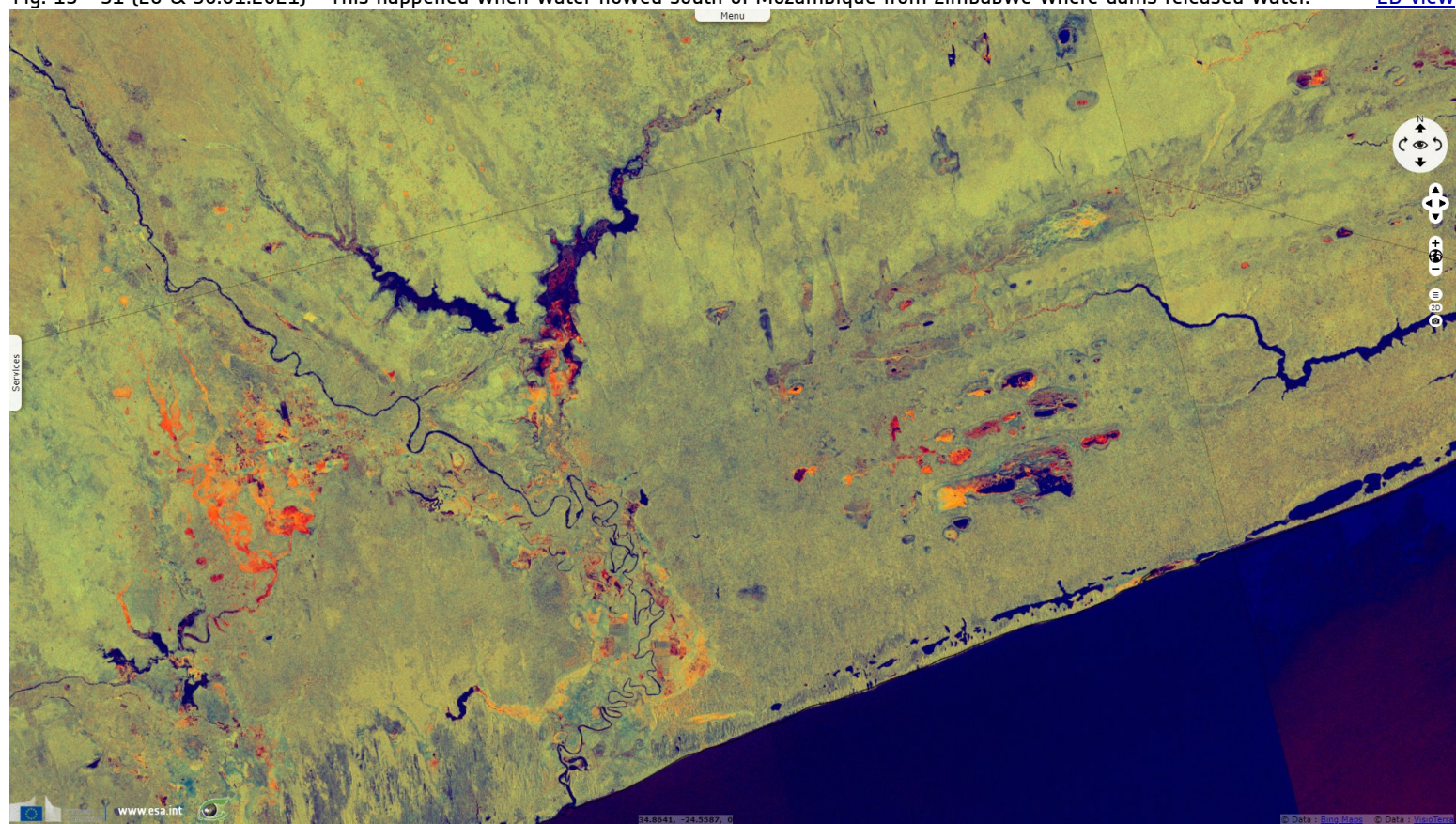














Fig. 13 - S1 (26 & 30.01.2021) - This happened when water flowed south of Mozambique from Zimbabwe where dams released water. [2D view](#)



*The views expressed herein can in no way be taken to reflect the official opinion of the European Space Agency or the European Union.
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