

Sentinel Vision
EVT-1211
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[2D Layerstack](#)

Souapiti Hydropower Station, Republic of Guinea

Sentinel-1 CSAR IW acquired from 27 July 2019 to 07 October 2019

Sentinel-2 MSI acquired from 19 December 2015 to 07 January 2020

Sentinel-3 OLCI FR acquired on 22 November 2022 at 10:40:47 UTC

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

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Fig. 1 - S3 OLCI (22.11.2022) - Overview of the Guinea and Garafiri, Kaléta and Souapiti dams on the Konkouré River.

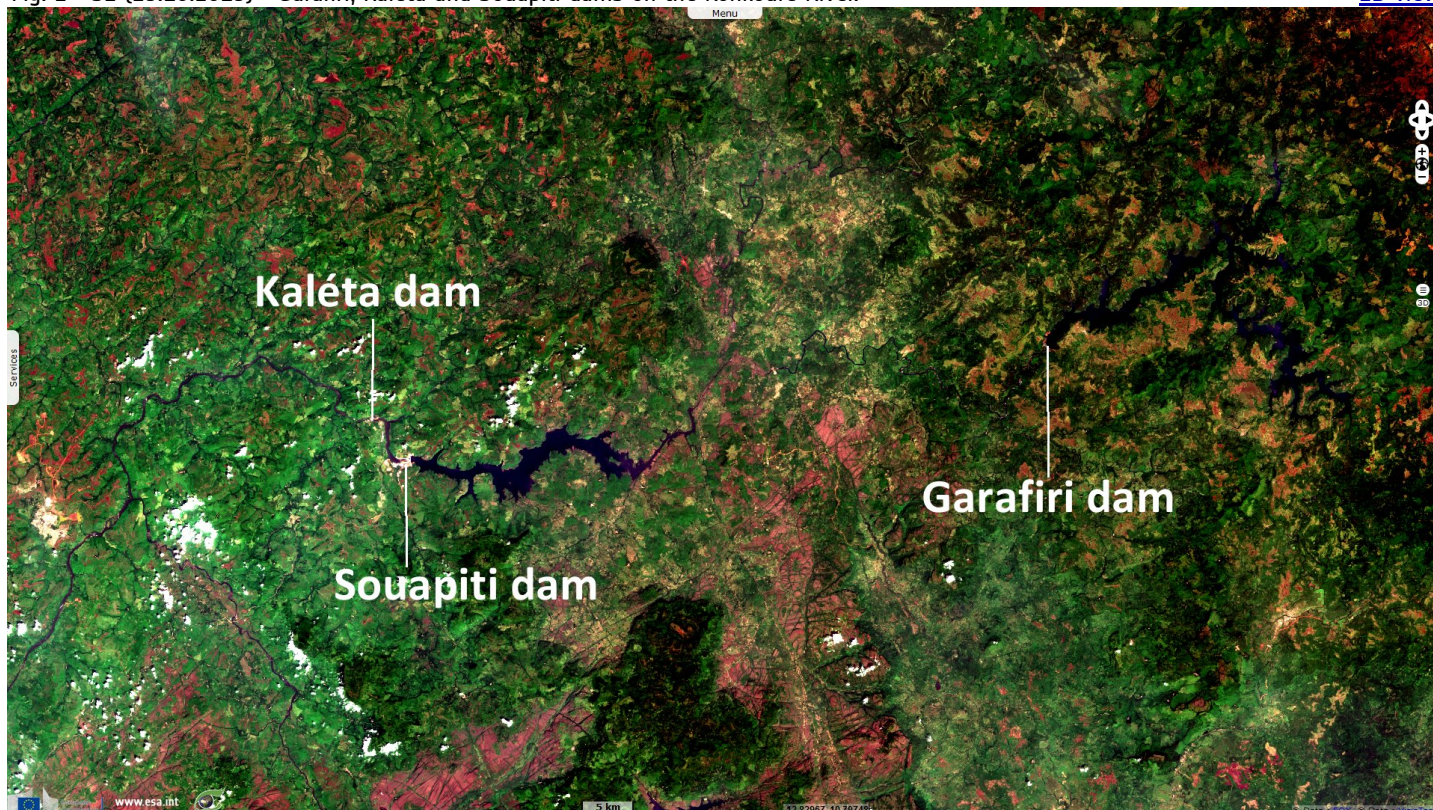
[2D view](#)



Souapiti Dam is an hydroelectric power station located in the Guinea on the Konkouré River, 303 km long, which flows to the Atlantic Ocean north of the Sangareya Bay. The installed capacity of 450 MW (4 [Francis turbines](#) and 4 electric generators) may produce 1.9 TWh per year. The construction of the dam began the 22 December 2015 by China International Water & Electric Corporation (CWE) and the commercial operation started the 24 June 2021.

Fig. 2 - S2 (29.10.2019) - Garafiri, Kaléta and Souapiti dams on the Konkouré River.

[2D view](#)



The Souapiti dam is part of a succession of four hydroelectric power stations on the Konkouré river, the Garafiri dam (1999), 66 km upstream (straight line), with an installed capacity of 75 MW, the Kaléta dam (2015), 6 km downstream, with an installed capacity of 240 MW and the Amaria dam (started in 2018), further downstream with an installed capacity of 300 MW. These four power stations makes the most of the 1200 MW potential of the Konkouré River according to [La Tribune Afrique](#).

Fig. 3 - S2 (2015 to 2019) - Evolution of the construction.

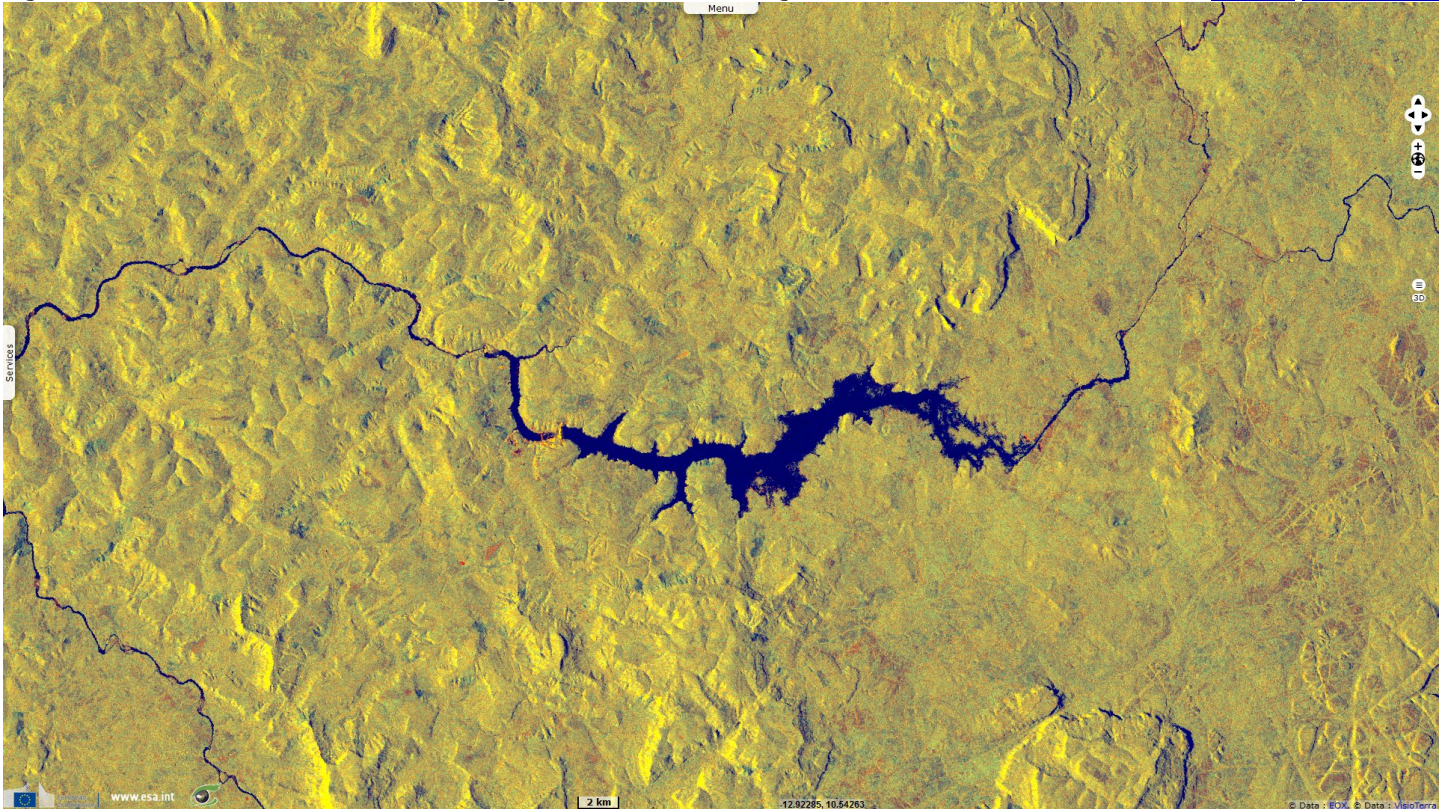
[2D view](#) [2D animation](#)



The Souapiti dam is 1150 metres wide and 117 metres high (source [Tractebel](#)).

Fig. 4 - S1 (27.07.2019 - 07.10.2019) - Pre-filling of the reservoir lake during the wet season in 2019.

[2D view](#) [2D animation](#)

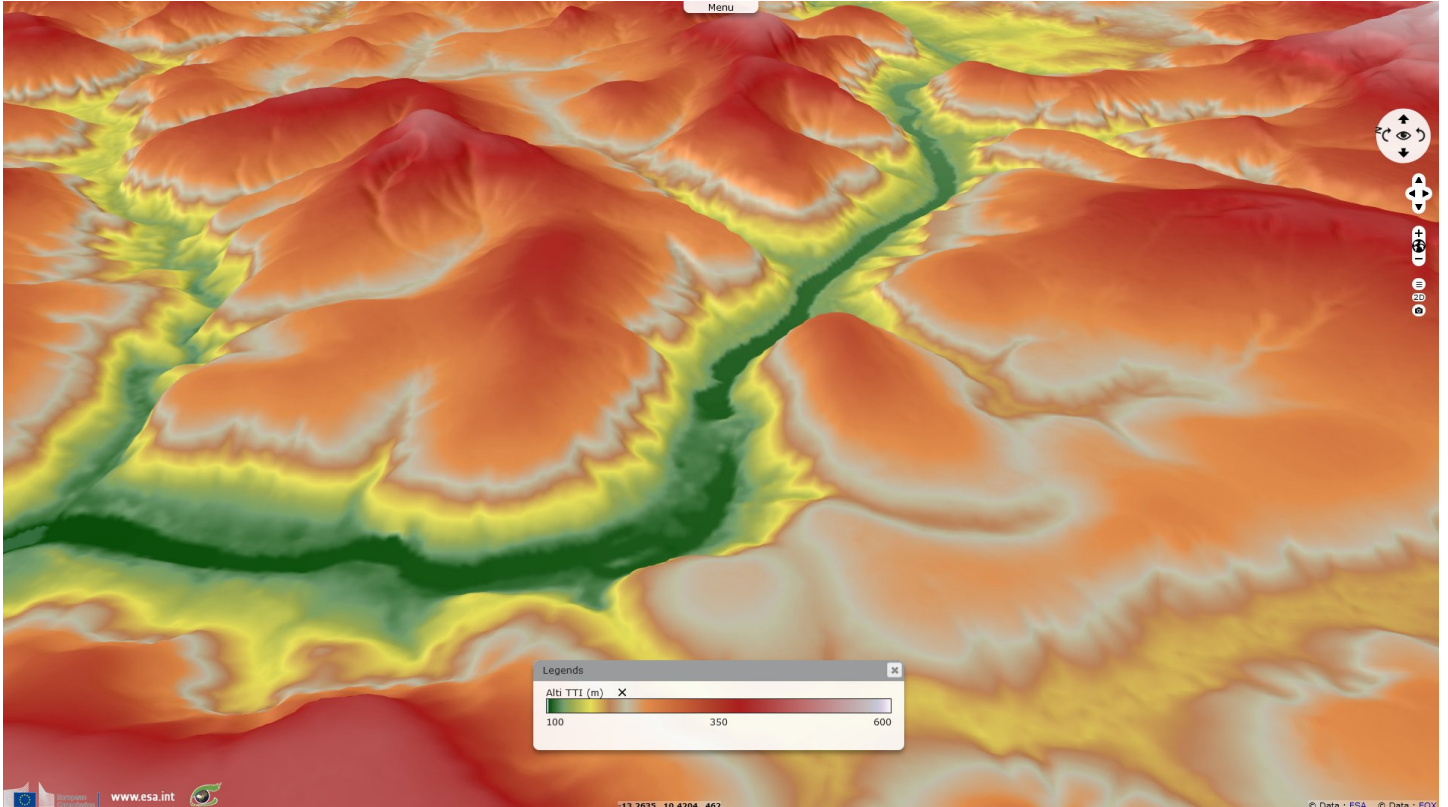


The dam has created an artificial lake that cover 253 km² and containing more than 6 km³ of water during the wet season. In addition to power generation, this reservoir lake is used as water supply during the dry season and may regulate the production of the Kaléta power station, 6 km downstream.

The artificial lake has flooded 51 villages, 42 km² of cropland, more than 550 000 fruit trees and has forced around 16 000 people to relocate (source [Citizenpost](#)). Finally, the lake has required the construction of 160 km of roads.













Fig. 5 - COP-DEM (relief x3) - Topographical relief of the Souapiti dam site.

[2D view](#) [3D view](#)



The power generated by this infrastructure alleviates the country's power grid which is undersized for its needs, both for the population and the mining industry. According to an article published in [Bloomberg](#) "Guinea has the world's biggest reserves of bauxite, which is refined into alumina and then smelted into aluminum, and its mines are the backbone of the \$6.6 billion economy." The cost of the project is estimated at \$1.4 billion (source [Jeune Afrique](#)) which of \$1.175 billion (almost 50% of the 2020 budget of Guinean state) loaned by China via the China Eximbank. Since the revision of the Mining Code in 2011, Chinese mining and steel companies have multiplied in the country. The creation of an integrated production chain, from bauxite to aluminium in Guinea requires significant input of energy. An issue that has prompted China to invest in the construction of new dams on the Konkouré River (source [Citizenpost](#)).

*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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