

# Illegal Chinese gold mines in Kibali river basin, DRC

Sentinel-2 MSI acquired on **14 August 2018** at 08:16:01 UTC  
Sentinel-1 CSAR IW acquired on **04 October 2018** at 03:43:07 UTC

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Sentinel-1 CSAR IW acquired on **06 October 2022** from 03:52:07 to 03:52:32 UTC  
Sentinel-2 MSI acquired on **12 October 2022** at 08:19:01 UTC

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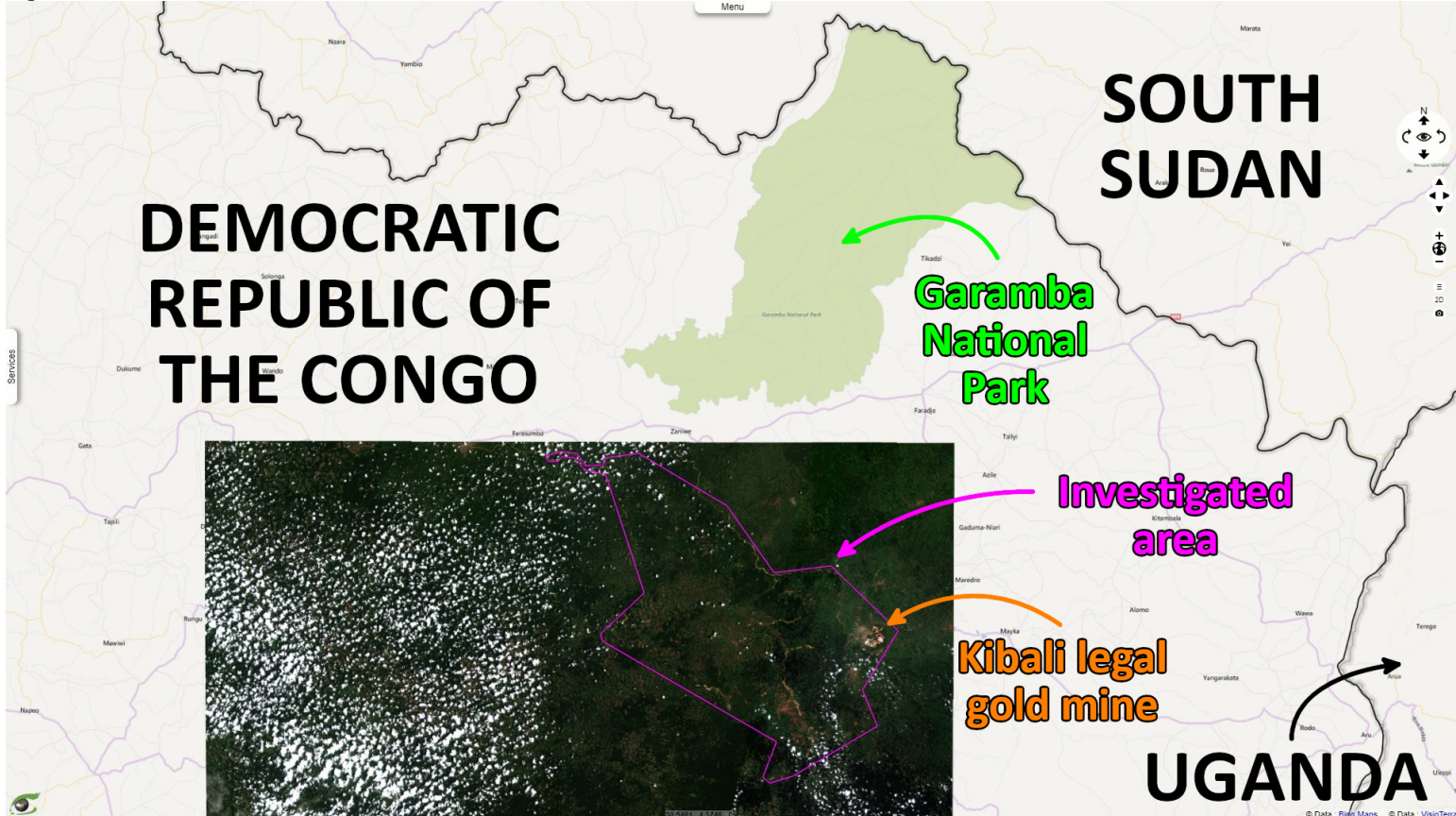
Keyword(s): Land, forestry, natural resources, gold mines, pollution, river, security, biodiversity, Congo, DRC



[2D Layerstack](#)

Fig. 1 - S2 (25.08.2022 & 12.10.2022) - The area of interest is enclosed in the sub-basin of River Kibali.

[3D view](#)

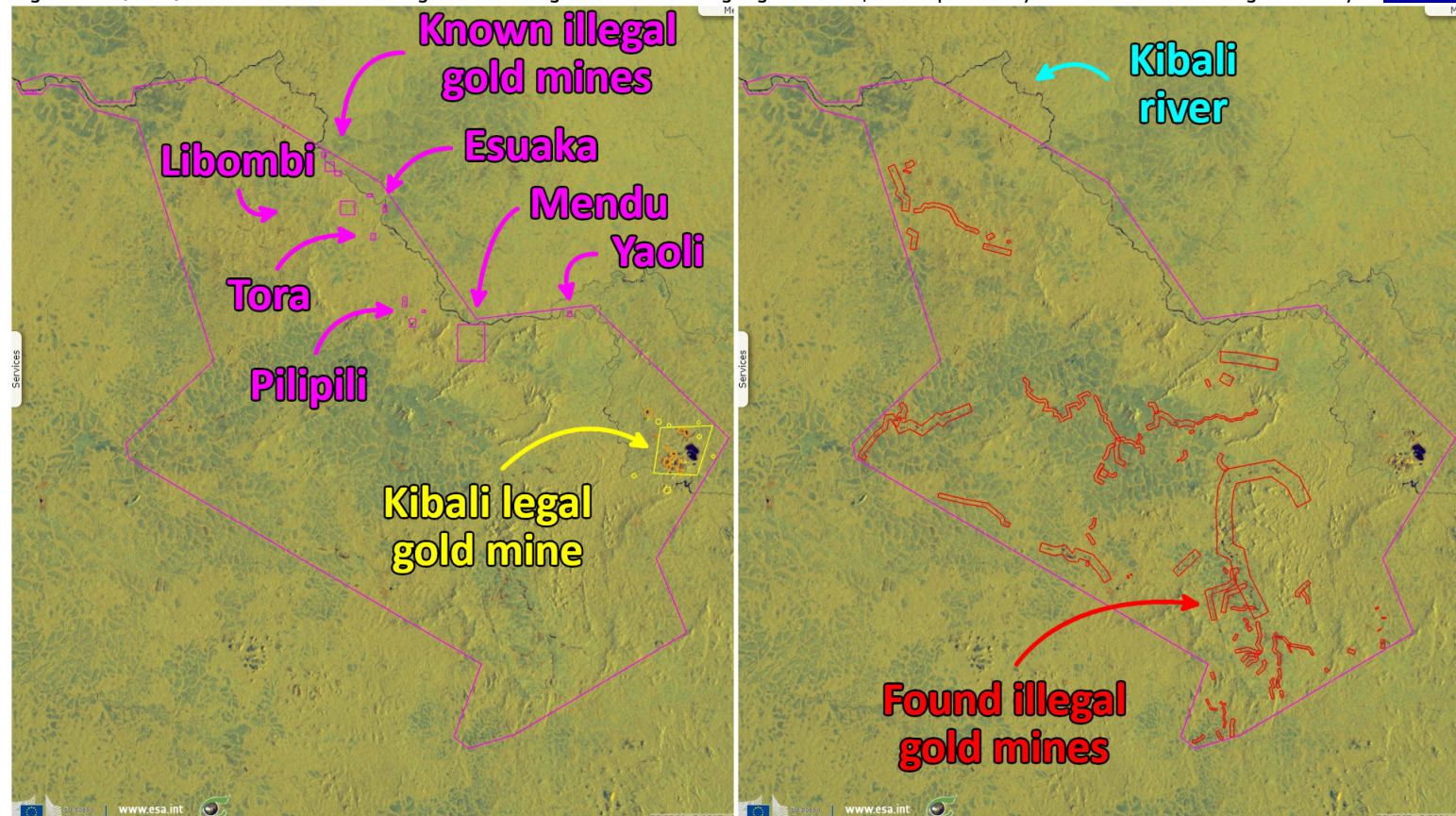


In an article to be published in cooperation with VisioTerra, Fidèle Kasangandjo Mwagalwa, agronomic engineer and Anti-poaching analyst at the African Parks Network explains: "*The Democratic Republic of Congo (DRC) is known to be a geological scandal because of the exceptional natural wealth of its subsoil, which is concentrated in its eastern part. The country contains several deposits of gold, cobalt, copper, tin, coltan, diamonds, tungsten, etc. (World Bank, 2010, Kilosho et al. 2009). The low cost of exploiting these numerous high-grade mineral deposits attracts mining companies from around the world to the DRC.*"

*"But this wealth is also the cause of the country's misfortunes, as it constitutes a factor of covetousness towards other countries that do not have this kind of wealth in their soils or sub-soils, which is why the eastern region of the DRC has been the scene of bloody clashes between different armed groups for several decades, and which are in most cases fuelled by neighbouring countries."*



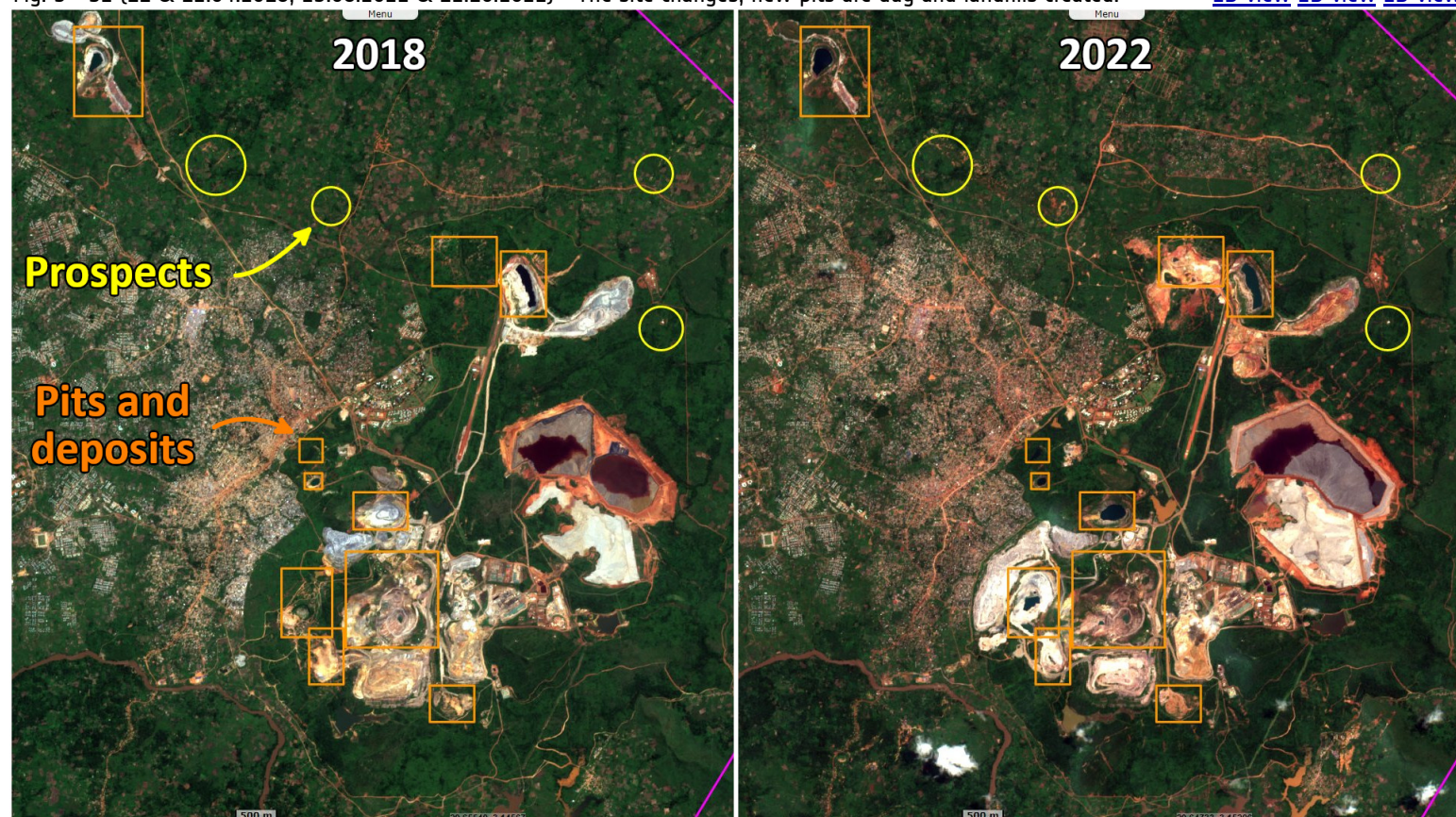
Fig. 2 - S1 (2022) - The area contains a legal industrial gold mine and illegal gold mines, either previously known or found during the study. [3D view](#)



"The image in Fig.2 presents a synoptic view of the situation of Chinese mines along the Kibali River and its surroundings, a threat to the survival of biodiversity."

Fig. 3 - S2 (11 & 12.04.2018; 25.08.2022 & 12.10.2022) - The site changes, new pits are dug and landfills created.

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

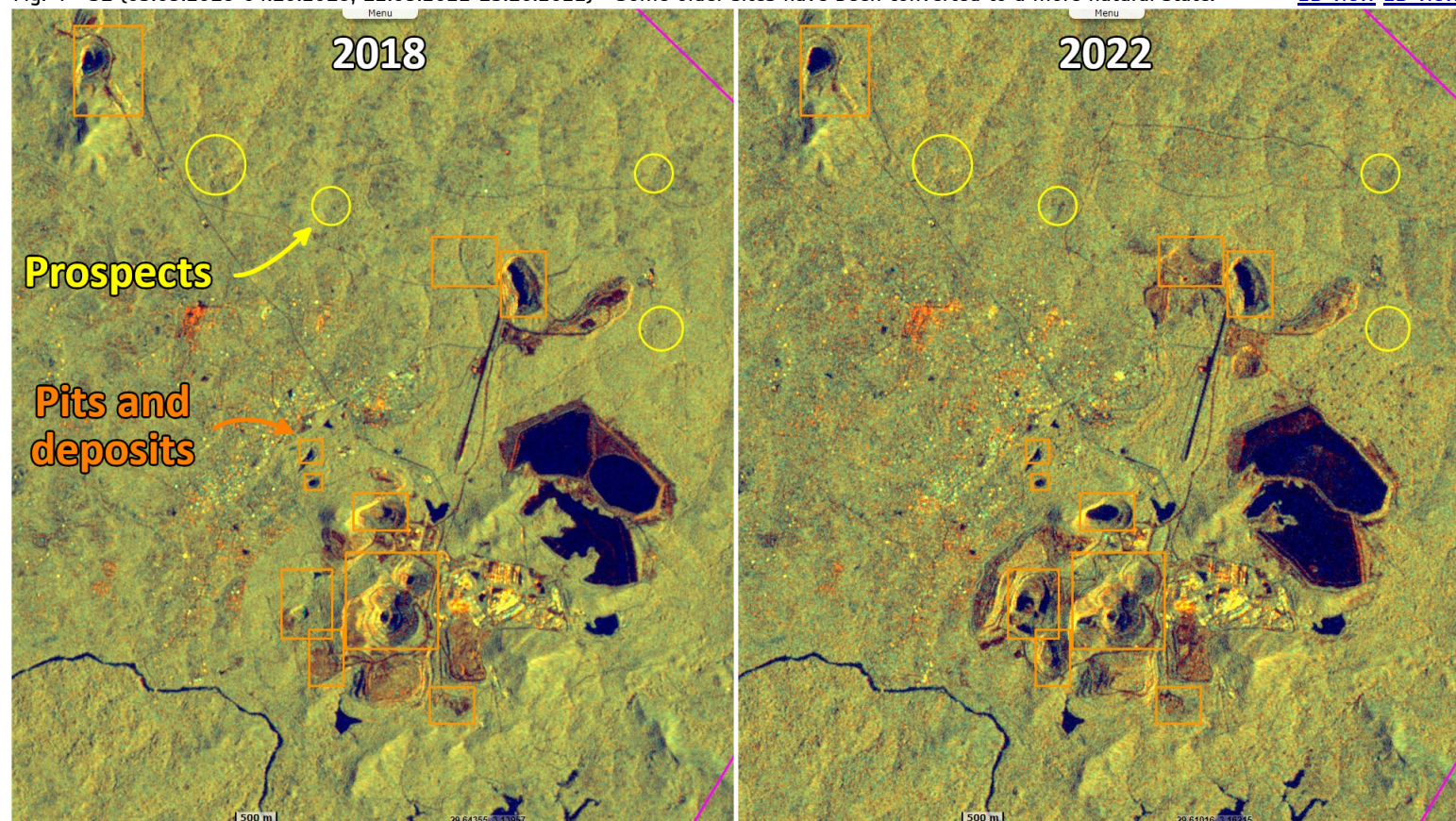


"Tensions around mining sites are therefore not new in the DRC, and are generally concentrated in the provinces of North Kivu, South Kivu, Ituri and Tshopo, and in all of these provinces there is a presence of miners who sneak into local mining cooperatives for their cover. In the past, the province of Haut-Uele was spared this scourge, related to armed conflicts around the mining sites."

"The exception were the attacks by the Lord's Resistance Army (LRA), an armed group of Ugandan origin, between 2008 and 2015. This armed group was based in Garamba National Park, at the "Swahili" camp, where they cultivated fields and were notorious for poaching large mammals and trafficking in ivory. According to testimony gathered from the population of Faradje, LRA fighters were not directly involved in artisanal or industrial mining, but rather in the looting of minerals extracted by local operators in the artisanal mining zones (AMZ), coupled with kidnappings and the theft of valuable goods."

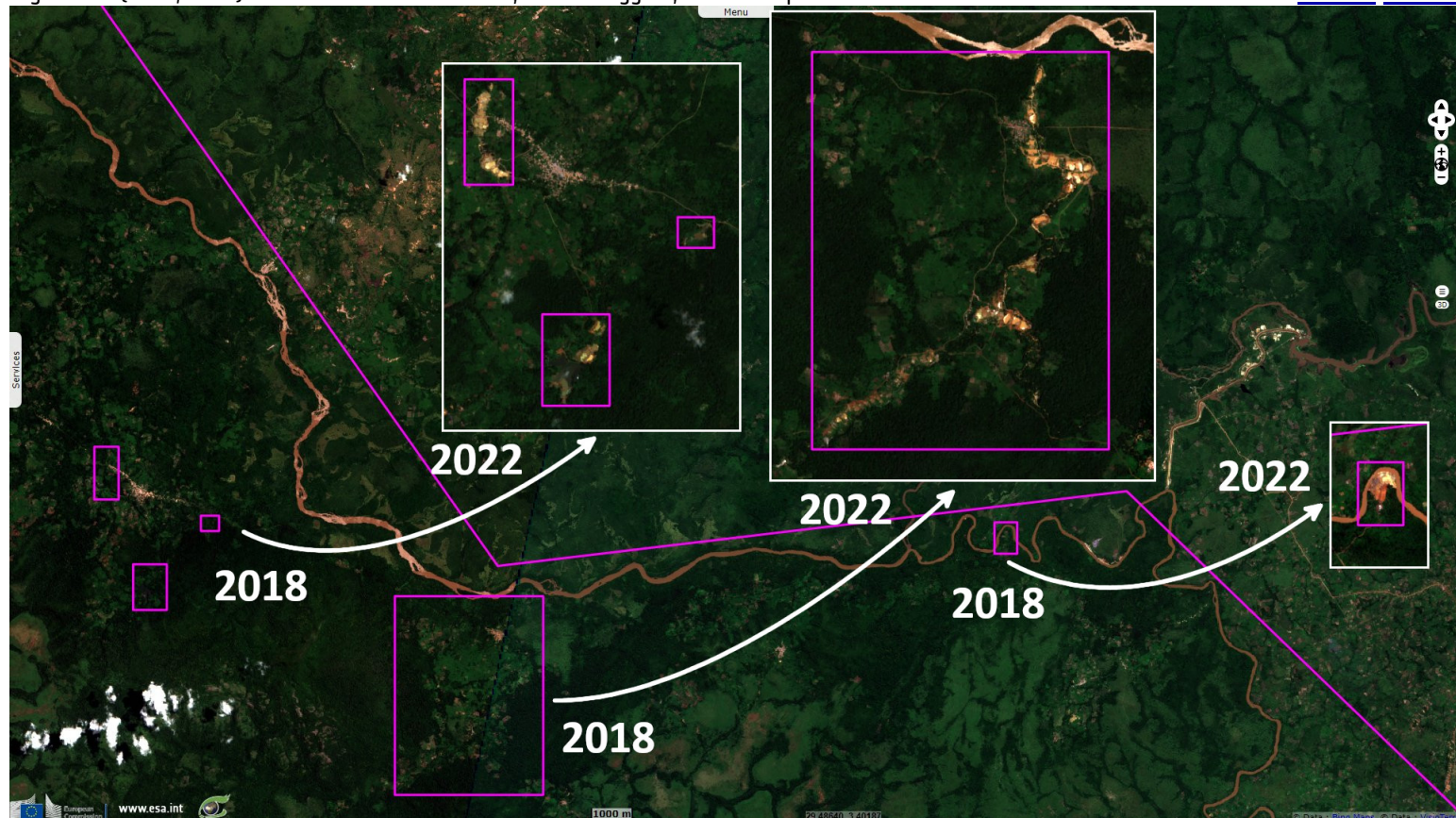


Fig. 4 - S1 (03.09.2018-04.10.2018; 12.09.2022-13.10.2022) - Some older sites have been converted to a more natural state. [2D view](#) [2D view](#)



"However, other isolated cases started to appear since 2017 in some major artisanal mining centres in Haut-Uele such as Sambia and Muku, all these armed bandits were known by local residents as "the road cutter". In an article published on the website of the Congo Research Group, a research institute on politics, governance and violence, the relatively new phenomenon of Chinese mining companies and the accompanying conflicts in Haut-Uele [are studied](#)."

Fig. 5 - S2 (2018; 2022) - While neither the earliest, nor the biggest, the first reported mines were visible from the river. [2D view](#) [2D view](#)

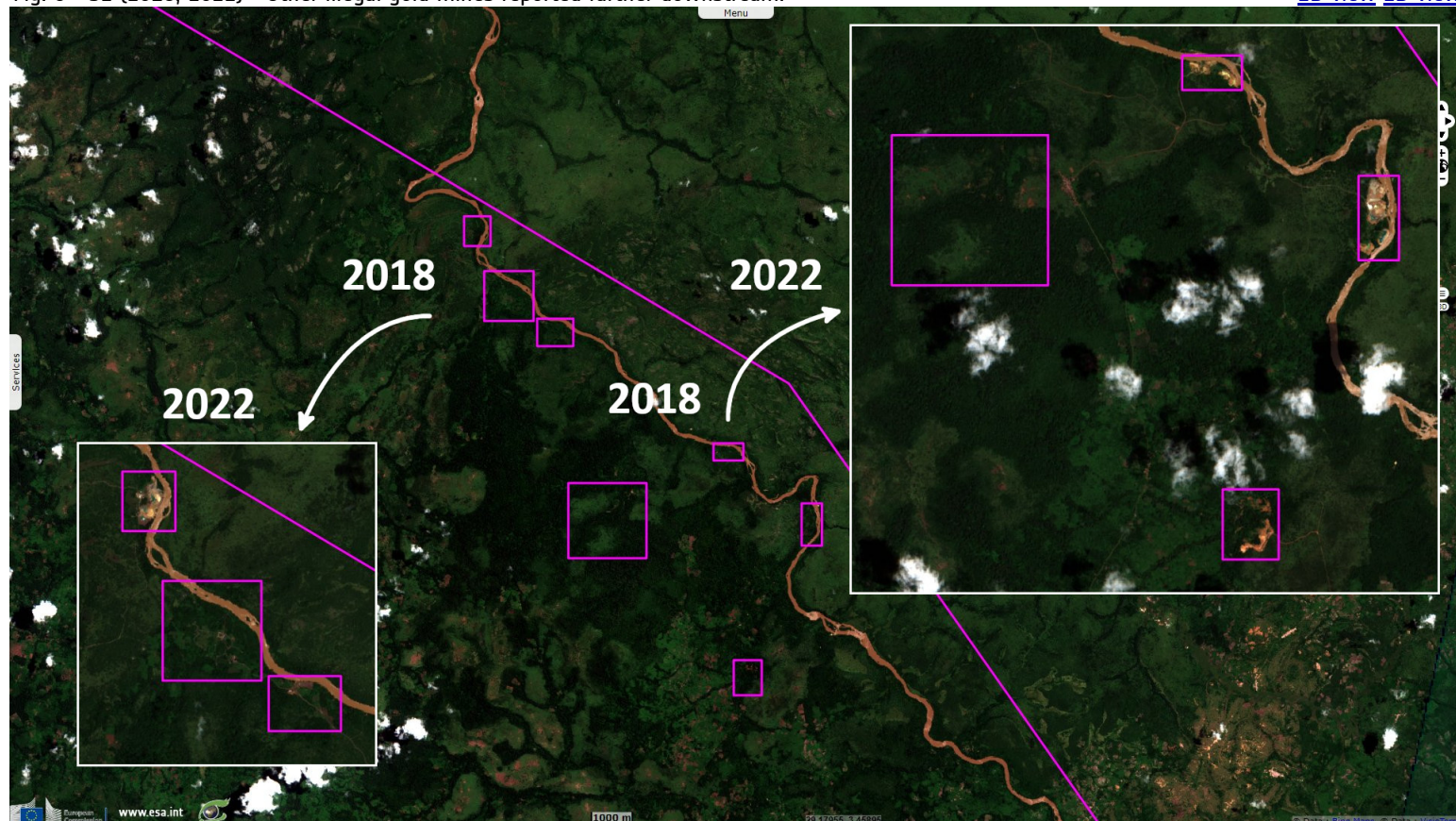


"According to their findings, the first wave of Chinese gold miners would have arrived in Upper Uele, mainly in Watsa's territory, by 2021, but at present they are spread throughout most of the province. Watsa's Artisanal and Small-Scale Mining Support and Supervision Service (ASSMSSS), has identified at least 104 excavators, 63 high-capacity motor pumps and seven bulldozers, most of which are owned by Chinese companies."



Fig. 6 - S2 (2018; 2022) - Other illegal gold mines reported further downstream.

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



*"It should be noted, however, that ASSMSSS does not have access to the Chinese mining sites, which are heavily guarded by armed forces of the DRC elements hired by the Chinese companies for their protection. The territory of Watsa, with a high concentration of mining cooperatives, sees Chinese companies operating illegally, as according to the 2018 Mining Code, foreigners are prohibited from entering artisanal cooperatives as well as artisanal cooperatives from operating outside of the agreed upon AMZs."*

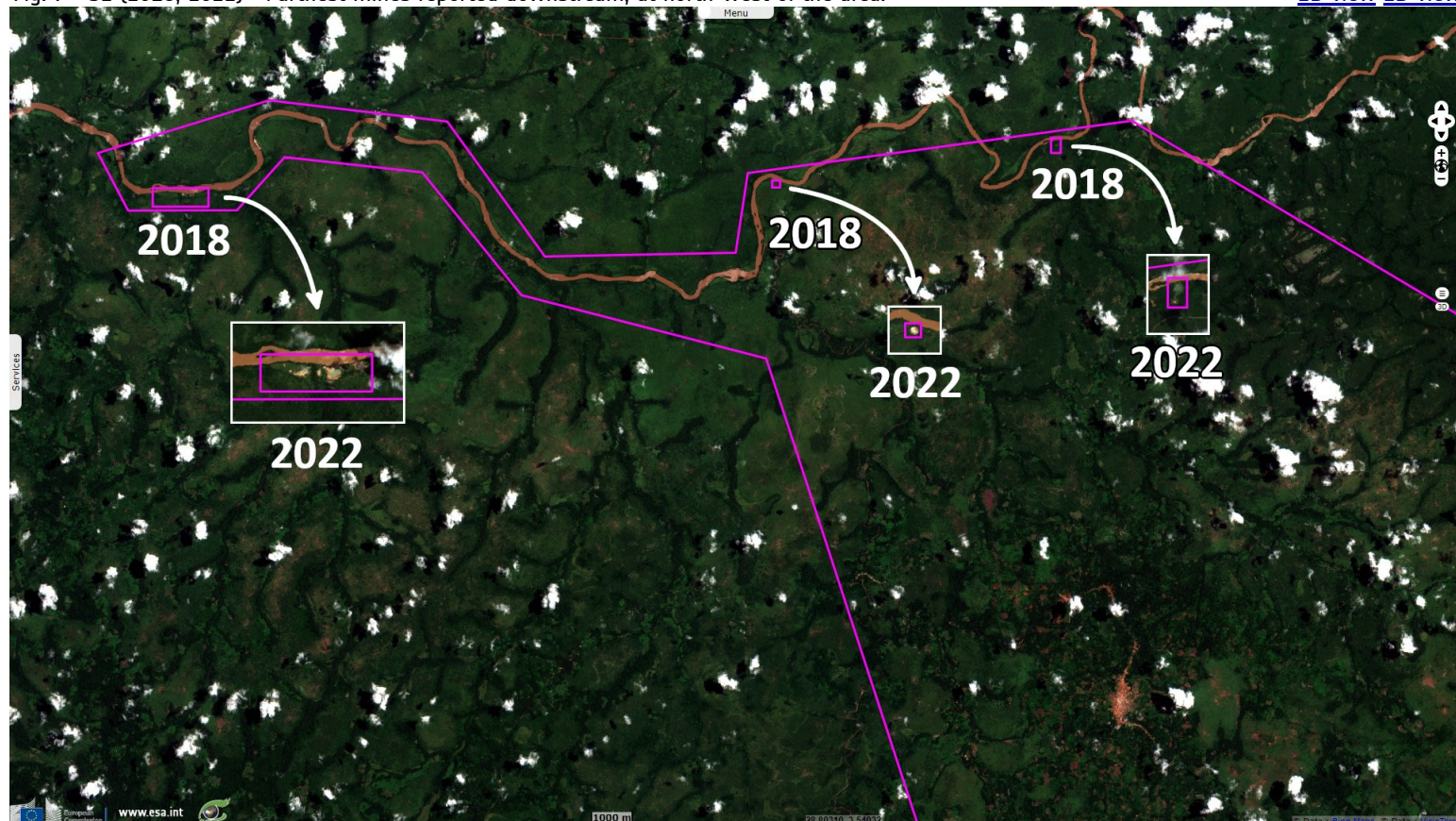


Chinese mine on the banks of River Kibali – Source: Fidèle Kasangandjo Mwagalwa



Fig. 7 - S2 (2018; 2022) - Furthest mines reported downstream, at north-west of the area.

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



*"In addition, these Chinese companies are providing much needed funds and heavy machinery to these cooperatives, making these Congolese cooperatives, on paper, engage in mining activities, which makes them illegal as their partners are foreign and also use non-artisanal methods. In addition, these Congolese-Chinese cooperatives operate outside the approved AMZs, which is also illegal because the gold potential of these areas is relatively low. As a result, these Congolese-Chinese cooperatives are opposed by the marginalised local communities."*

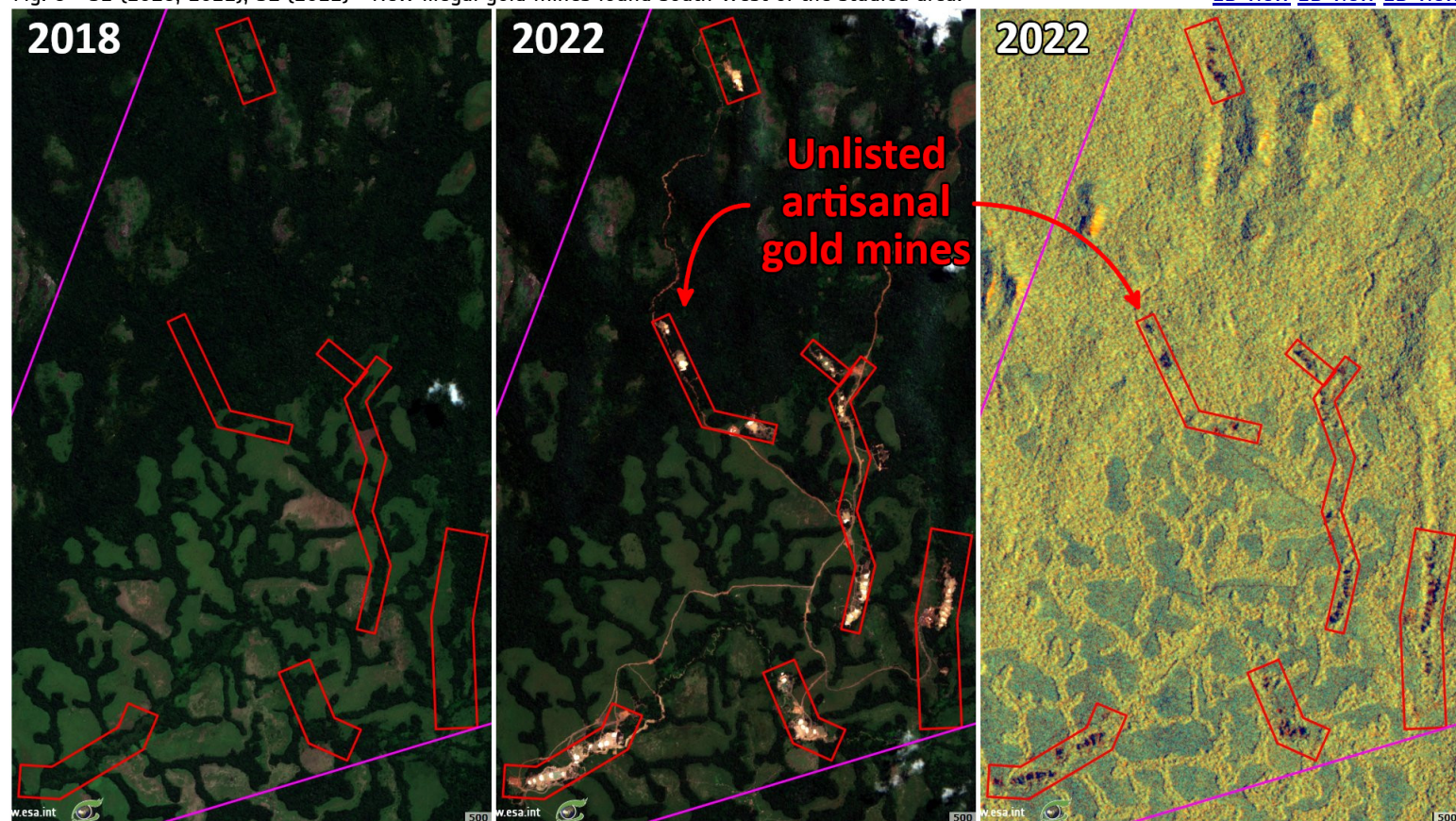


Chinese mine on the banks of River Kibali – Source: Fidèle Kasangandjo Mwagalwa



Fig. 8 - S2 (2018; 2022); S1 (2022) - New illegal gold mines found south-west of the studied area.

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

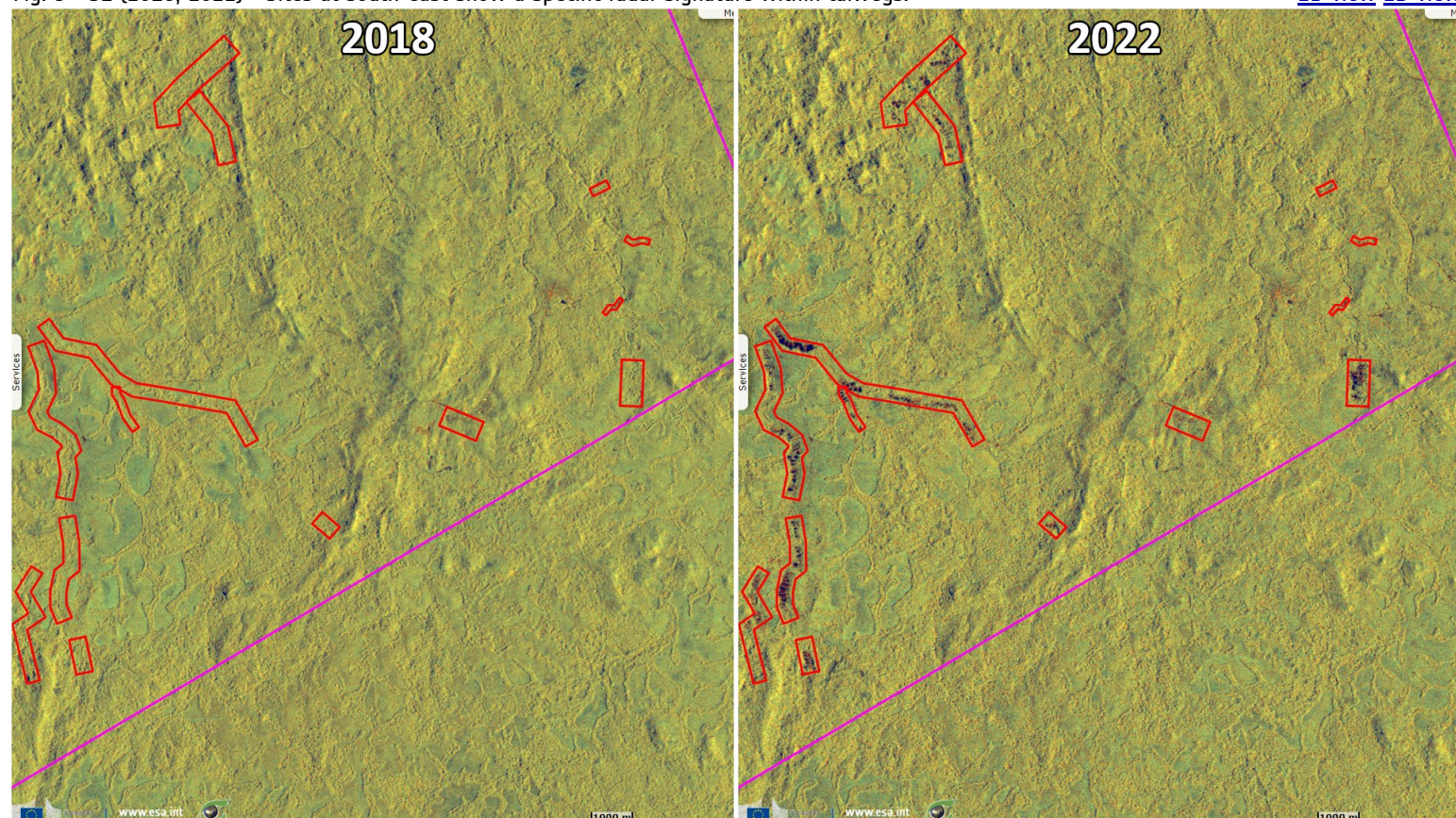


Fidèle Kasangandjo develops: "In the light of this problem, two hypotheses are formulated, namely:

- Spatio-temporal analysis with 10 metres-resolution Sentinel images will allow the identification of different areas of illegal Chinese mining at the basal level of the Mondo-Missa hunting domain within the Garamba Parc complex.
- Multi-date analysis will identify the likely period of arrival of Chinese miners in the basal DMM. The date of arrival of the Chinese miners in Haut-Uélé province seems unknown, but some attribute it to the year 2021, when isolated cases of attacks on artisanal mining sites began to be reported and which many sources would attribute to their arrival."

Fig. 9 - S1 (2018; 2022) - Sites at south-east show a specific radar signature within talwegs.

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

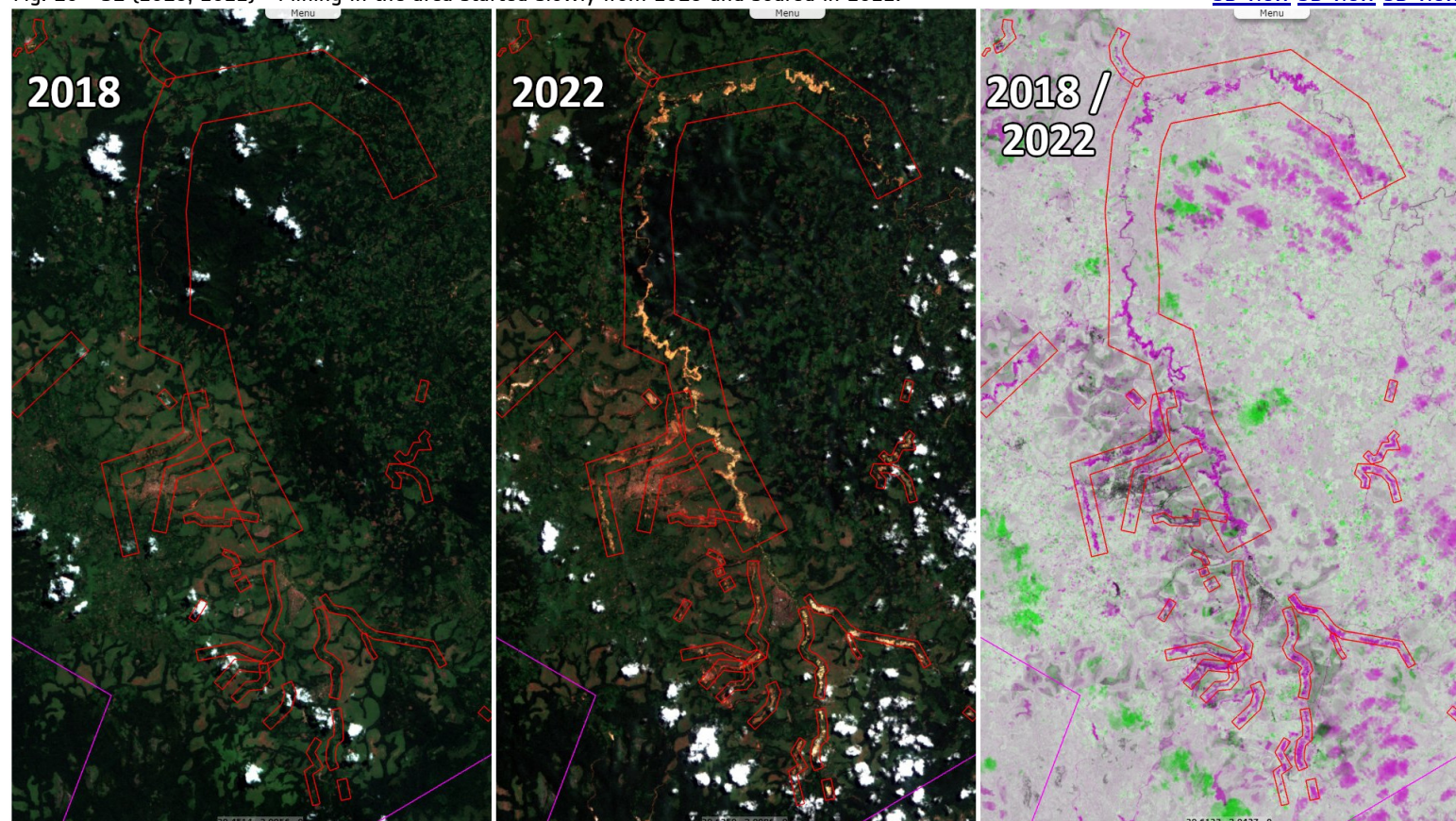


"Artisanal mining is one of the main activities carried out by peasants in the eastern Democratic Republic of Congo. However, the Congolese state in the mining code had separated the industrial mining zones from the Artisanal Mining Zones (AMZ) in order to allow peasant communities to earn financial income as well and to avoid the crisis with the big companies."



Fig. 10 - S1 (2018; 2022) - Mining in the area started slowly from 2018 and soared in 2022.

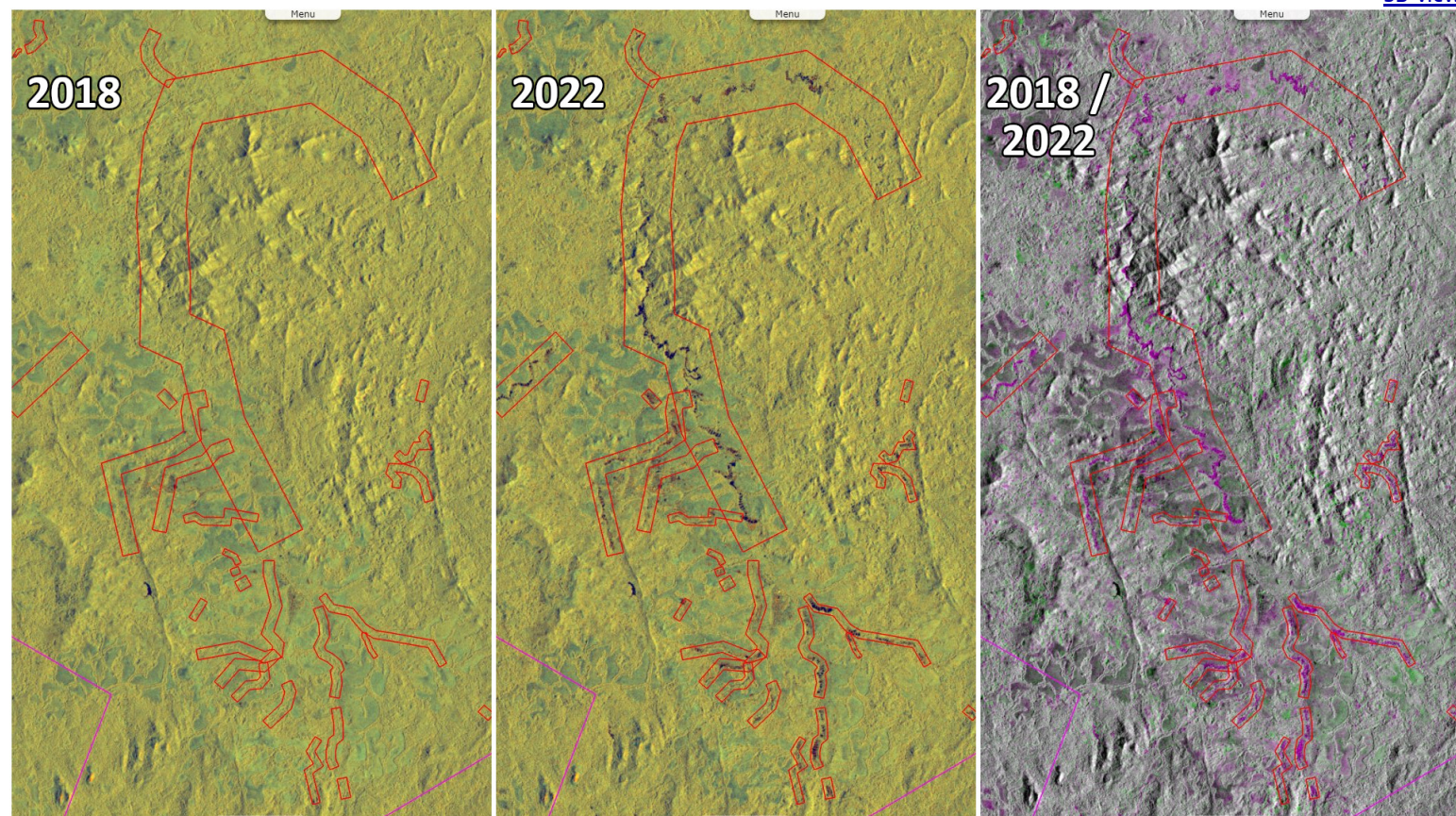
[3D view](#) [3D view](#) [3D view](#)



*"This standard set by the Congolese government has never been respected by the Chinese miners who were previously more active in the former province of Katanga, South Kivu, North Kivu and Ituri. Currently, they have invaded Haut-Uele province, are hiding in local cooperatives and are exploiting illicitly in the AMZs, whereas a circular note issued on 2 October 2021 by the National Minister of Mines had ordered the withdrawal of foreigners and heavy machinery from the AMZs."*

*"In addition, this work aimed to identify all Chinese mining sites in the basal part of the buffer zone of the Garamba National Park complex, a UNESCO World Heritage Site in Haut-Uélé Province, by assessing their dynamics from 2018 to 2022 using satellite imagery."*

Fig. 11 - S1 (2018; 2022) - The surface of river beds that has been destroyed is accelerating, reaching a significant part of the basin. [3D view](#) [3D view](#) [3D view](#)

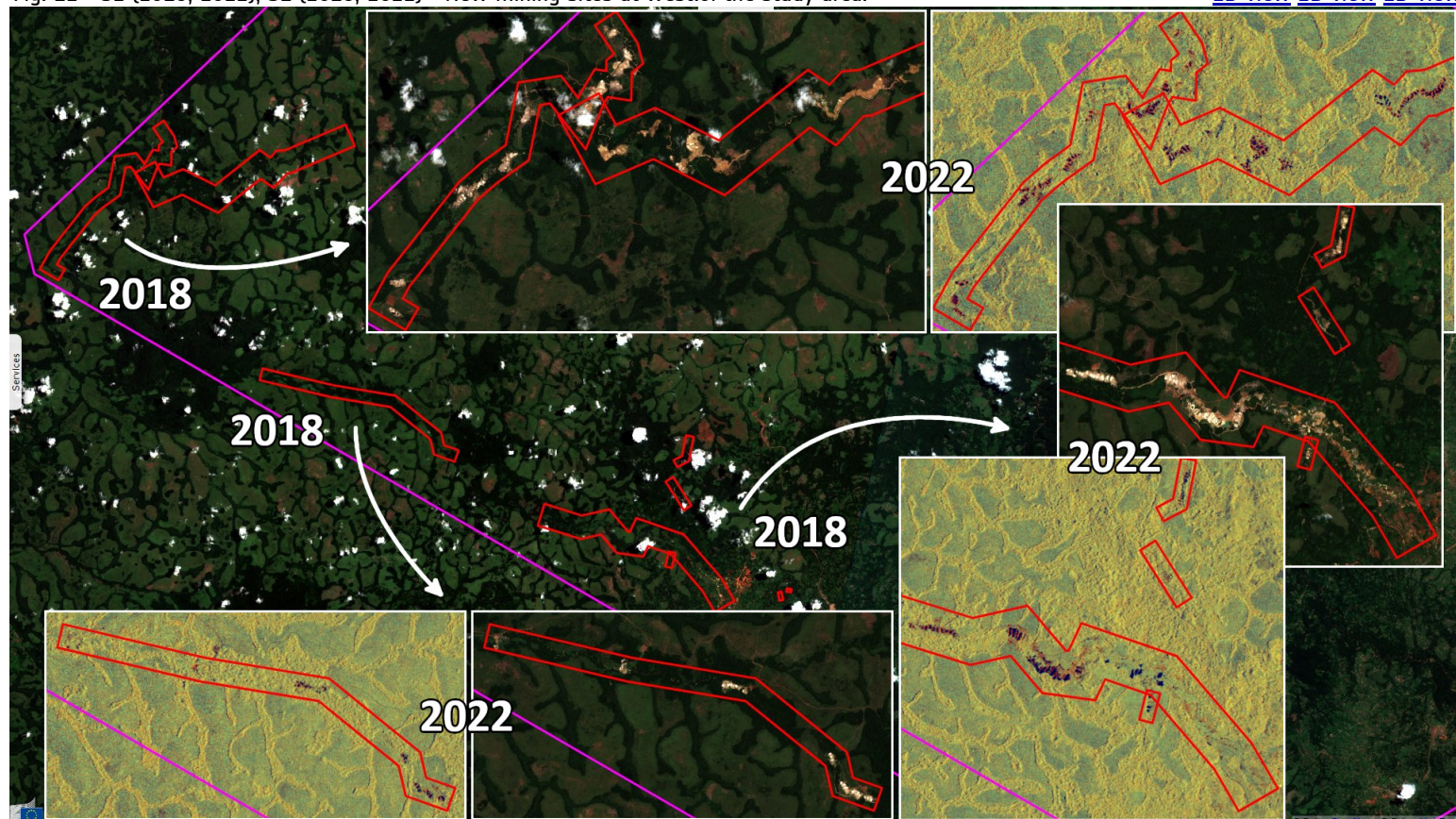


*"A multi-date spatial analysis from 2018 to 2022 was carried out as part of this story in order to identify the dynamics of occupation of Chinese mines along the Kibali River, a biotope of great biodiversity belonging to Garamba National Park."*



Fig. 12 - S2 (2018; 2022); S1 (2018; 2022) - New mining sites at west of the study area.

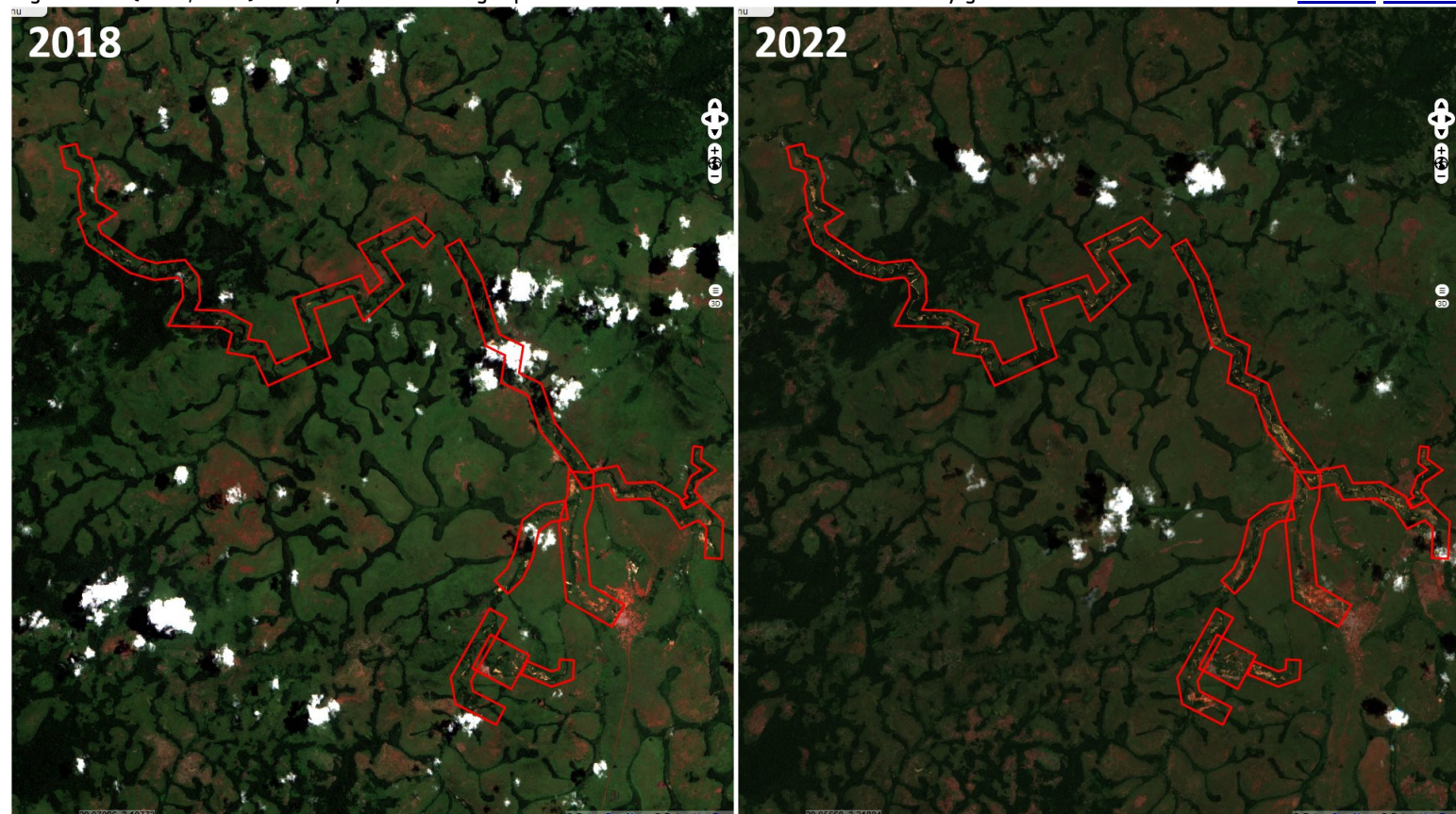
[2D view](#) [2D view](#) [2D view](#)



"These analyses show that year 2022 was the inflection point for intensive gold mining on the banks of the Kibali River by Chinese miners. Based on this spatial observation, it should be noted that this mining started scaling up in 2021 in this area which is mainly gallery forest cleared for mining purposes by the Chinese who hide under the label of local mining cooperative, as foreign mining operators are not allowed to mine in artisanal mining areas. According to information gathered in the field, the Chinese who are mining along the Kibali River in the village of Esuaka, belong to the COMILILA cooperative."

Fig. 13 - S2 (2018; 2022) - Gallery forest is being replaced with a cascade of small basins used by gold miners.

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



"The degree of pollution observed by the European Space Agency's explains quantitatively the degree of threat to the biodiversity of the Garamba National Park, a UNESCO World Heritage Site. A surveillance flight conducted by the national park in November 2022 along the Kibali River confirmed these observations made by space observation."

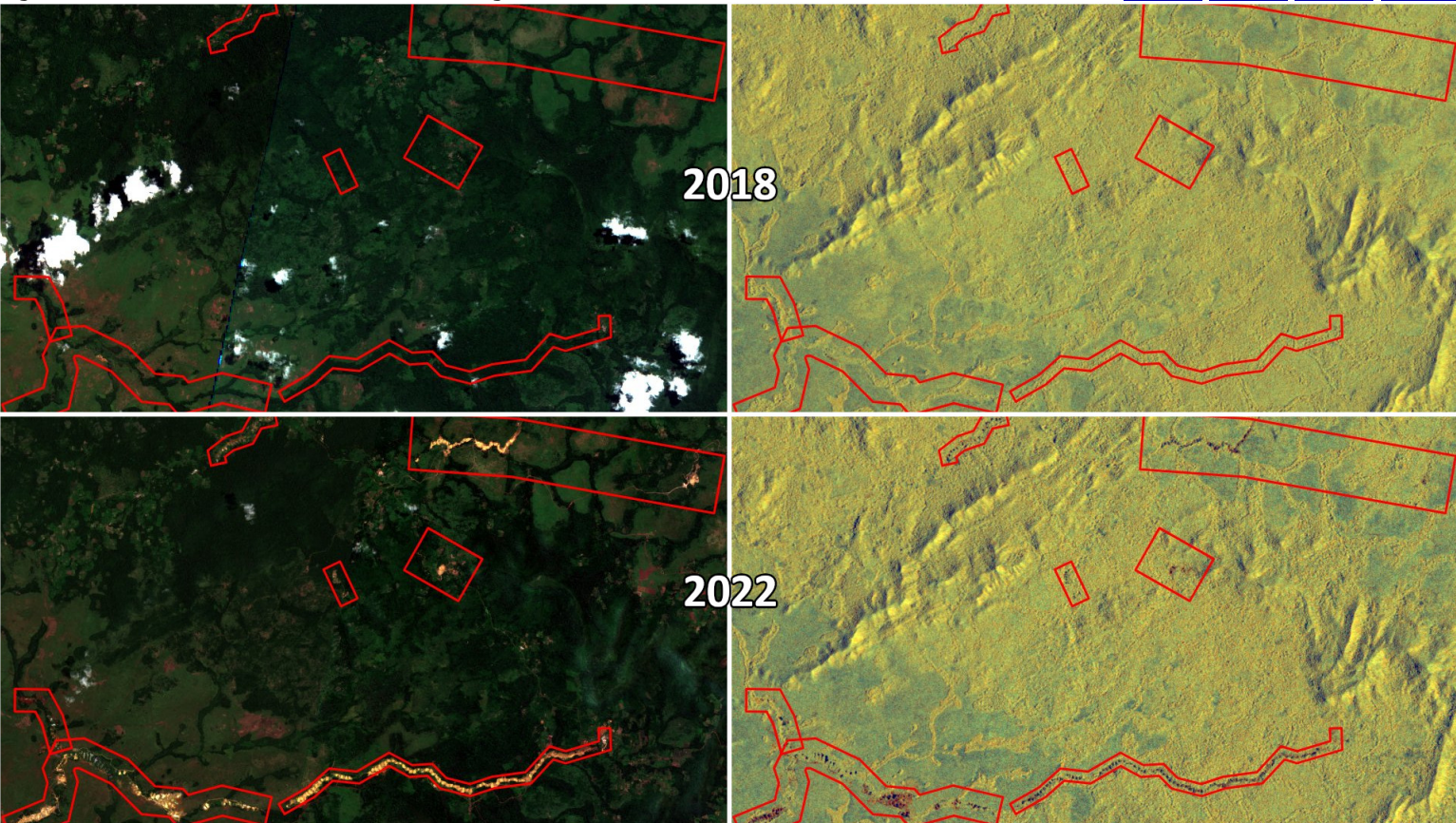
Finally, Fidèle Kasangandjo Mwagalwa recommends "to carry out an *in situ* physico-chemical analysis on this river in order to evaluate this pollution from a biochemical point of view and to highlight all the polluting loads affecting this ecosystem, which will make it possible to draw up



specifications for the restoration of this ecosystem by the polluters in the event that the Congolese government, through the Ministry of the Environment, should become involved by prosecuting these operators."

Fig. 14 - S2 (2018; 2022); S1 (2018; 2022) - Damaged river course at north-east of the area.

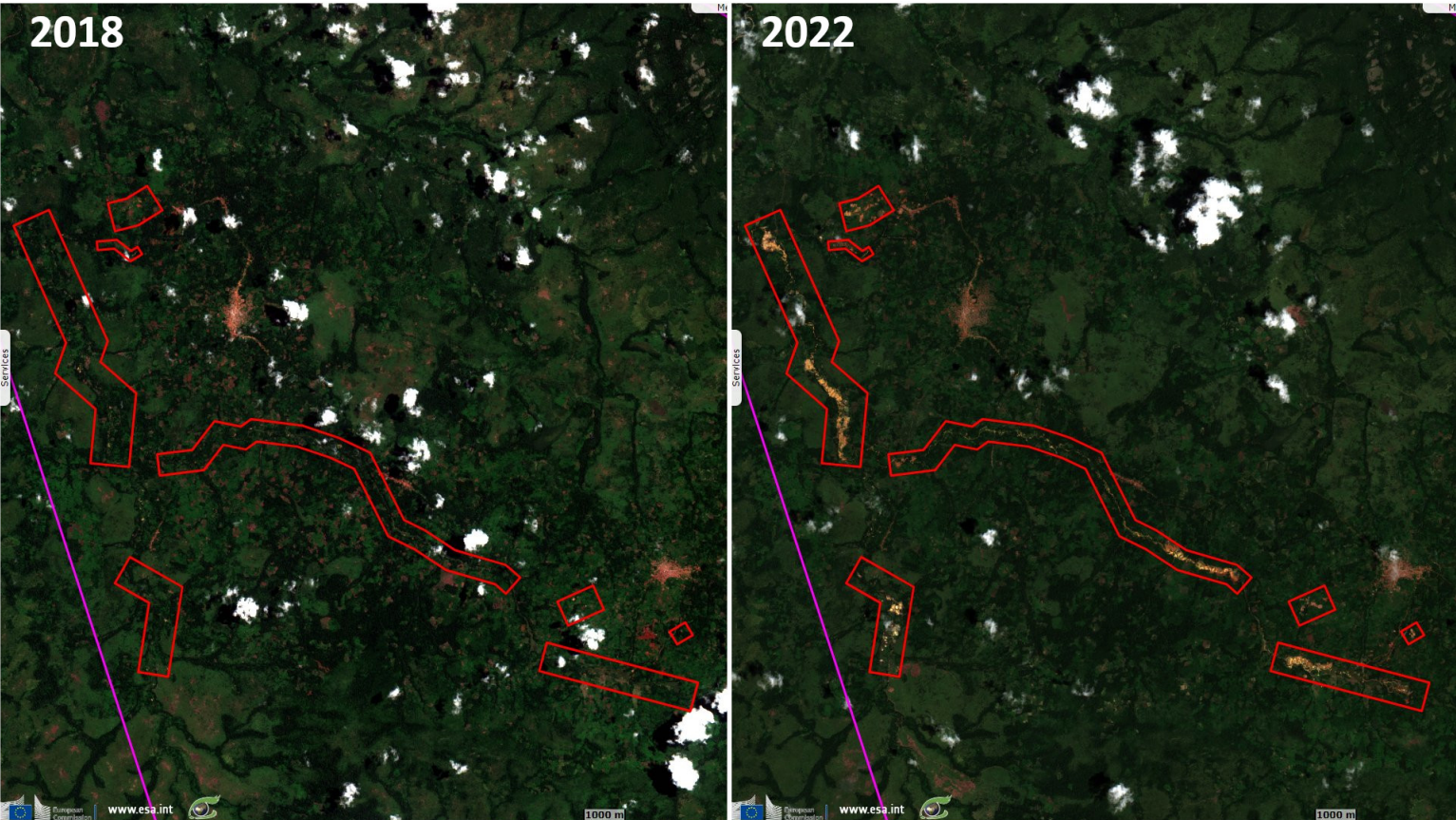
[2D view](#) [2D view](#) [2D view](#) [2D view](#)



This comes in the context of the Democratic Republic of Congo (DRC) reviewing "mining contracts awarded to a Chinese firm it co-owns with Beijing; its work and profits have formed continual concerns raised by the government on fairness", according to an article [written by Patrick Ilunga](#) in the East African newspaper on 11 April 2023.

Fig. 15 - S2 (2018; 2022) - Further downstream of the basin, at north-west.

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

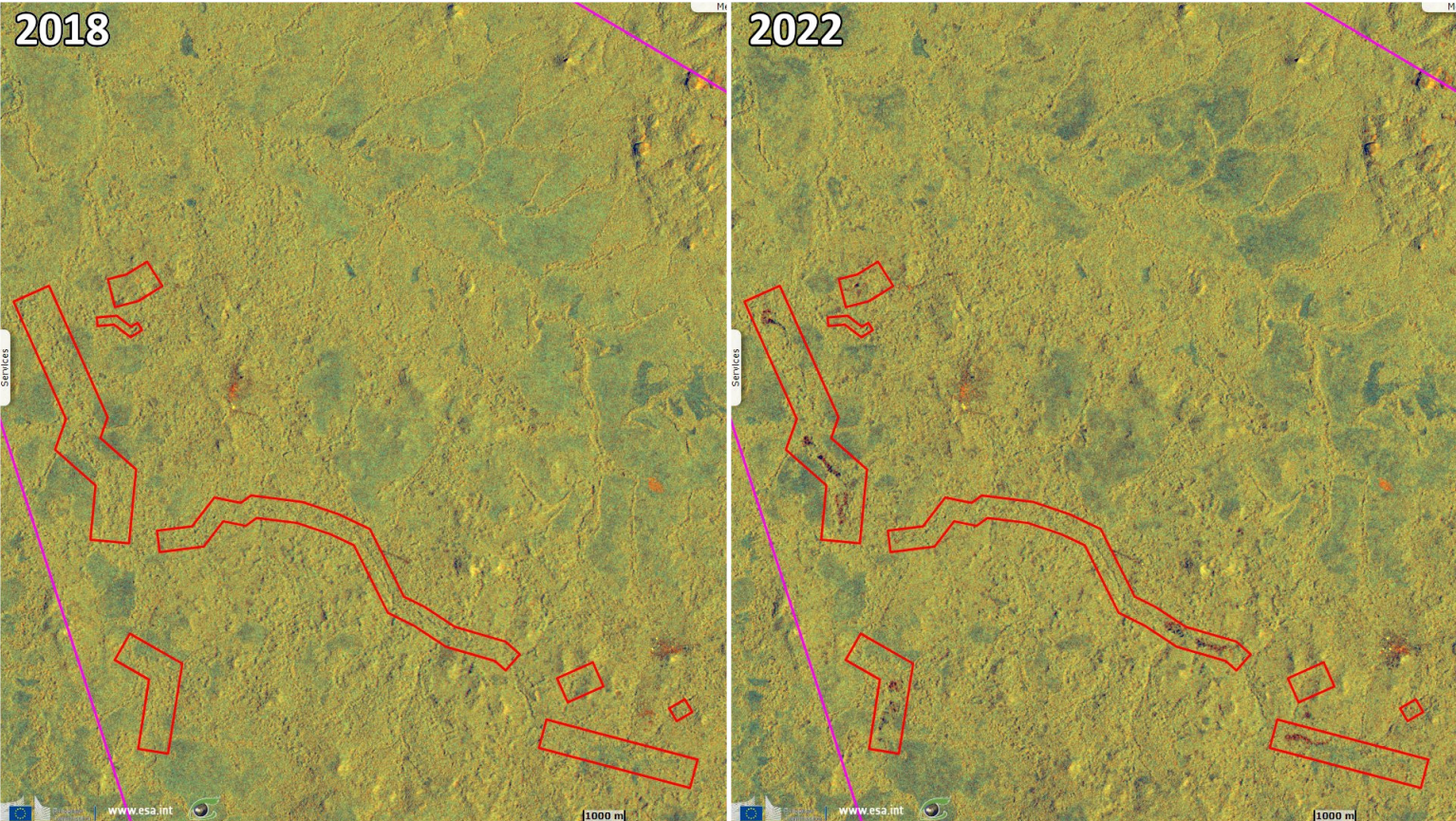


"The mining sector in DRC represents the might of Chinese economic interests: 80 percent of the country's exports in the mining sector are destined for China, with Chinese firms now dominating the scene as the destination for up to 80 percent of all the copper and cobalt mined in the DRC. The country's ministry of mining also says 90 percent of the DRC's mining production actually is exported to China."















Fig. 16 - S1 (2018; 2022) - Radar images allow monitoring all year long even under a cloudy sky.

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



“DRC needed infrastructure but had no money. China had the money but needed minerals. Today, China has not even built one metre of rail in the DRC. Part of the deal had said China was to build 3500 km of roads, 3500 km of railway infrastructure, 31 hospitals with 150 beds and 145 health centres.”, indicates the press article.

*The views expressed herein can in no way be taken to reflect the official opinion of the European Space Agency or the European Union.  
Contains modified Copernicus Sentinel data 2023, processed by VisioTerra.*

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