

Title : The Observatory of Mining Activity, an environment monitoring tool adapted

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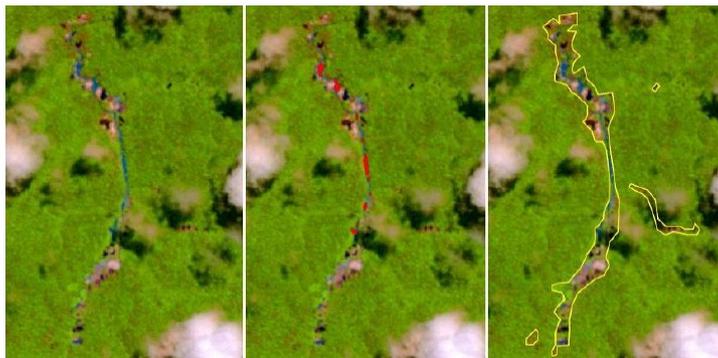
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Abstract :

Since the early 90s, French Guiana is experiencing a resurgence in gold mining. From 2000, with the large increase in gold prices, we have witnessed a considerable development of illegal gold dealing, along with the development of the mining law.

The Office National des Forêts, (ONF), manager of the private forest estate in the State, has returned on GIS for over 10 years, and collected all information mining. Moreover, the need to establish an accurate history and a meaningful real time analysis on a territory covered by dense tropical forest and difficult to access, has led to use satellite imagery. The SEAS program (*Surveillance de l'Environnement Amazonien par Satellite*) in place since 2006 can acquire free satellite images from SPOT 4 and 5.

Through this cooperation, an early warning and monitoring of mining is in place, from two distinctive objects on satellite images: water pollution (release of a large amount of suspended solids with a very discriminating spectral signature) and deforestation. The early warning targets pollution of surface waters, with the software PLATOT, which incorporates an automated processing benchmark of turbid waters. The monitoring focuses on deforestation by photo-interpretation, guided by the observations made through whistleblowing.



*Illustration : data extracted from a SPOT image
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The validation is performed during helicopter missions to prove the efficiency of the system put in place. Today, 1165 satellite images were processed and used to regularly discover new areas of mining activity.

This tool has been incorporated in the project of Observatory of Mining Activity, (OAM), a pool of data of all concerned state departments. Each partner, the forest office, ONF, the Police, the Armed Forces of French Guiana (FAG), the State Department of Environment (DEAL), and the national Park (PAG) put their own data available to other services. Thus, the OAM, platform sharing and exchange of real-time data from the processing of satellite images, field missions and other sources of information are the way to take stock as thoroughly as possible on mining and its impacts. One of its efficient services is currently in the fight against illegal gold dealing, scourge of French Guiana and Amazonia.

Key-words : remote sensing, small-scale, gold mining, French Guiana, Environment monitoring, tropical rainforest, SPOT imagery