

# Implementing the ASMSpotter for Guyana through the Amazon CoLab Accelerator programme

The ASMSpotter - a tool to automatically detect artisanal mining activity using satellite data and artificial intelligence developed by dida Datenschmiede GmbH (dida) and Levin Sources - now supports Guyana's authorities in monitoring artisanal and small-scale mining (ASM) and linked deforestation activities.



Gold mining is a key pillar of Guyana's economy, especially the ASM sector, which accounts for an estimated 70% of gold production. The mining sector plays an important role in Guyana's efforts to reduce poverty, especially in remote and rural communities. At the same time, mining poses significant environmental, social and health risks and challenges. It is reportedly the largest driver of deforestation and degradation of ecosystems in the country, especially as 85% of Guyana's territory is covered by rainforest.

While Guyana has a modern regulatory framework for mining, which allows for and supports ASM, there are challenges related to governance and enforcement of this framework. One main challenge for the Governmental agencies mandated to regulate and supervise the sector is the effective monitoring of ASM activities in often remote, inaccessible areas of the country.

The ASMSpotter has therefore teamed up with the Ministry of Natural Resources (MNR) in Guyana to support their existing ASM monitoring and management activities and improve the tool at the same time - with the goal of enabling long-term application of the ASMSpotter by governments around the world.

## 2020

ASMSpotter awarded the Microsoft AI For Earth prize from the Artisanal Mining Grand Challenge

## 2021

ASMSpotter invited into the inaugural cohort for the Amazon CoLab Accelerator programme.

Received further funding from USAID to "field test" the tool, to further develop the technology and to implement it jointly with partners in countries of the Amazon region.

## OBJECTIVES OF THE COLLABORATION WITH GUYANA UNDER THE AMAZON COLAB

-  Demonstrate efficiency and accuracy gains with the use of ASMSpotter in comparison to conventional monitoring activities of ASM operations and linked deforestation
-  Improve ASGM sector governance to prevent and manage negative environmental and social impacts and to enable positive impacts
-  Identify concrete unique selling points for the ASMSpotter application, especially for the use by government agencies
-  Evaluation of ASMSpotter's accuracy and capability on existing data
-  Integrate ASMSpotter into on-the-ground monitoring and inspection processes by governments

## KEY ACTIVITIES AND MILESTONES

To achieve the objectives, we will undertake several activities until April 2022:



**Field testing:** Live application of the ASM-Spotter within the MNR's existing monitoring activities



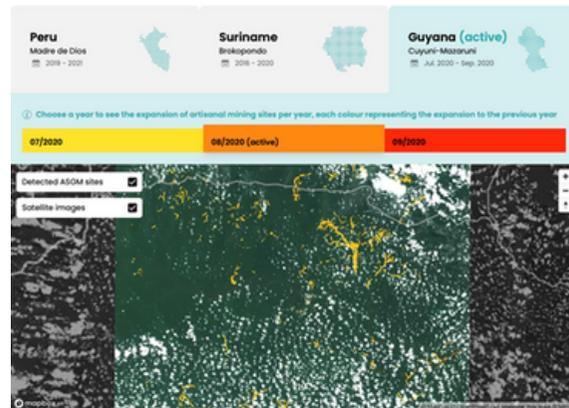
**User validation and feedback:** Integrating ASMSpotter into the MNR's workstreams and tailoring it based on their needs and feedback



**Product development:** Technical advancement and tailoring of the ASMSpotter based on user needs, in close collaboration and discussion with the MNR. This also includes the development of an analysis and advisory toolbox and ethical safeguards for users.



**Technical validation:** Validation of the ASMSpotter through "field testing", using both newly collected data and already existing data of the Guyanese MNR



## THE ASMSPOTTER DEMO

The initial demo shows early results in Peru, Suriname and Guyana.

[ACCESS THE DEMO](#)

Further developments of the demo and website (front end) of ASMSpotter are planned under the Accelerator programme.

## PARTNERSHIP

The implementing partners are Levin Sources and dida GmbH, partnering with the Guyana Ministry of Natural Resources.



Levin Sources is a UK-based social enterprise and consultancy specialized in artisanal and small-scale mining, human rights, environment and responsible mining and sourcing. The company provides industry-leading expertise and operates at the intersection of the public and private spheres. Levin Sources has worked in over 50 countries globally on ASM.



dida is a Germany-based software developer that specializes in custom machine learning solutions with a focus on Computer Vision & Remote Sensing. The company combines academic excellence (>80% PhDs) with proven ability to deliver.



The Ministry of Natural Resources Guyana was established as the Ministry of Natural Resources and the Environment (MNRE) with a primary focus of harmonizing policy and management in the Natural resources-based sectors. Mining in Guyana is managed by the Geology and Mines Commission (GGMC), which is part of the MNR. In this capacity, the GGMC periodically monitors ASM operations.

## ABOUT THE AMAZON COLAB ACCELERATOR PROGRAM



Implemented by Conservation X Labs (CXL), in partnership with the United States Agency for International Development (USAID), the Gordon and Betty Moore Foundation, Microsoft, and ESRI, the Amazon CoLab is an acceleration program that will support innovator teams developing, testing, and advancing solutions to protect people and ecosystems in the Amazon.