Real-Time Monitoring of Tropical Deforestation

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Purpose

To provide weekly forest loss maps at fine resolution with a low latency at global scale, in the frame of the TropiSCO project

The TropiSCO project is part of the Space Climate Observatory program

www.spaceclimateobservatory.org

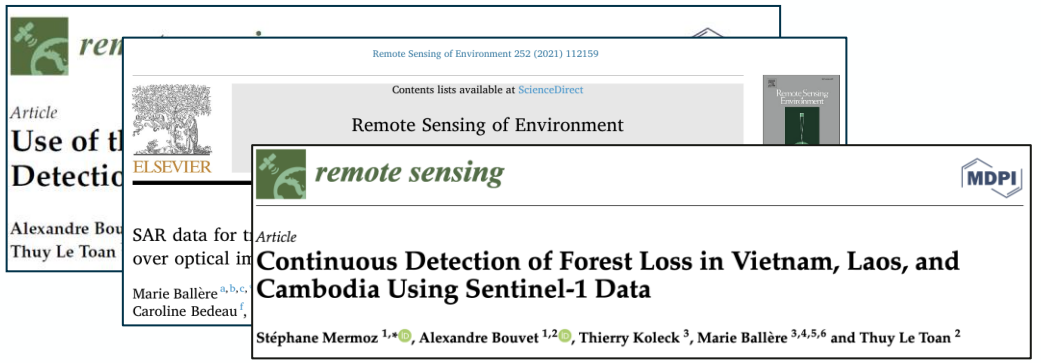
What for ?

- For companies who want to prove that their supply chains are deforestation-free, complying with the certifications to which they have committed
- Crucial to the requirements in UNFCCC REDD+, the primary policy supporting financial incentives to developing countries to minimise deforestation
- For tracking illegal activities in protected areas, logging exploitation

Method

Based on radar Sentinel-1 data from the Copernicus program, which allows for the development of an operational system, whatever the weather conditions

The method has been developed for many years

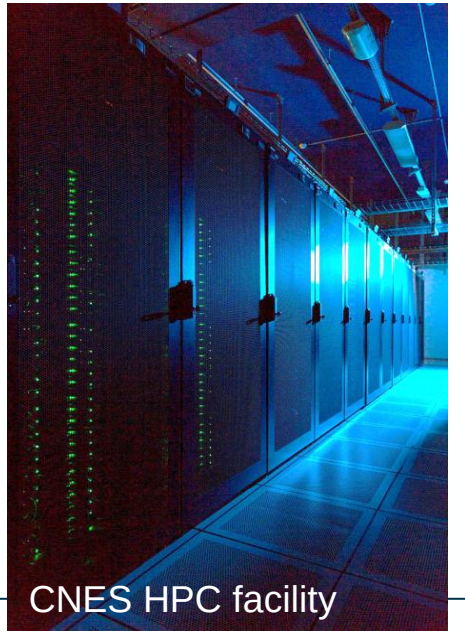


Processing

Continuous and automatic processing hosted on CNES HPC

Every day, the fully automated TropiSCO processor allows to

- process new Sentinel-1 images
- detect forest losses
- update the forest loss maps and statistics
- transfer products to webGIS


CNES HPC facility

Specificities of the TropiSCO alert system

- Processing on national computing resources
- Work with local organizations: AGEOS in Gabon, VNSC in Vietnam, INPE in Brazil
- Development of joint methods INPE/CNES to be integrated in the operational Brazilian alert system
- Use of specific input data adapted to local forest definitions
- Carbon losses assessment
- Dedicated online platform

Phase 1 of the TropiSCO project

Phase 1:
Demonstration and architecture studies

Phase 2:
Production and new developments

oct. 2021 **apr. 2022** 2024

User requirements:
Questionnaire

Demonstration:
Maps production and webGIS developement

Data Architecture:
Trade-off on technical solutions for operationnal processing

- Users requirements synthesis
- Production on 7 countries (Guiana shield, South-East Asia and Gabon) since 2018
- WebGIS developement and validation
- Processing and cost estimation for phase 2

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Phase 2 of the TropiSCO project

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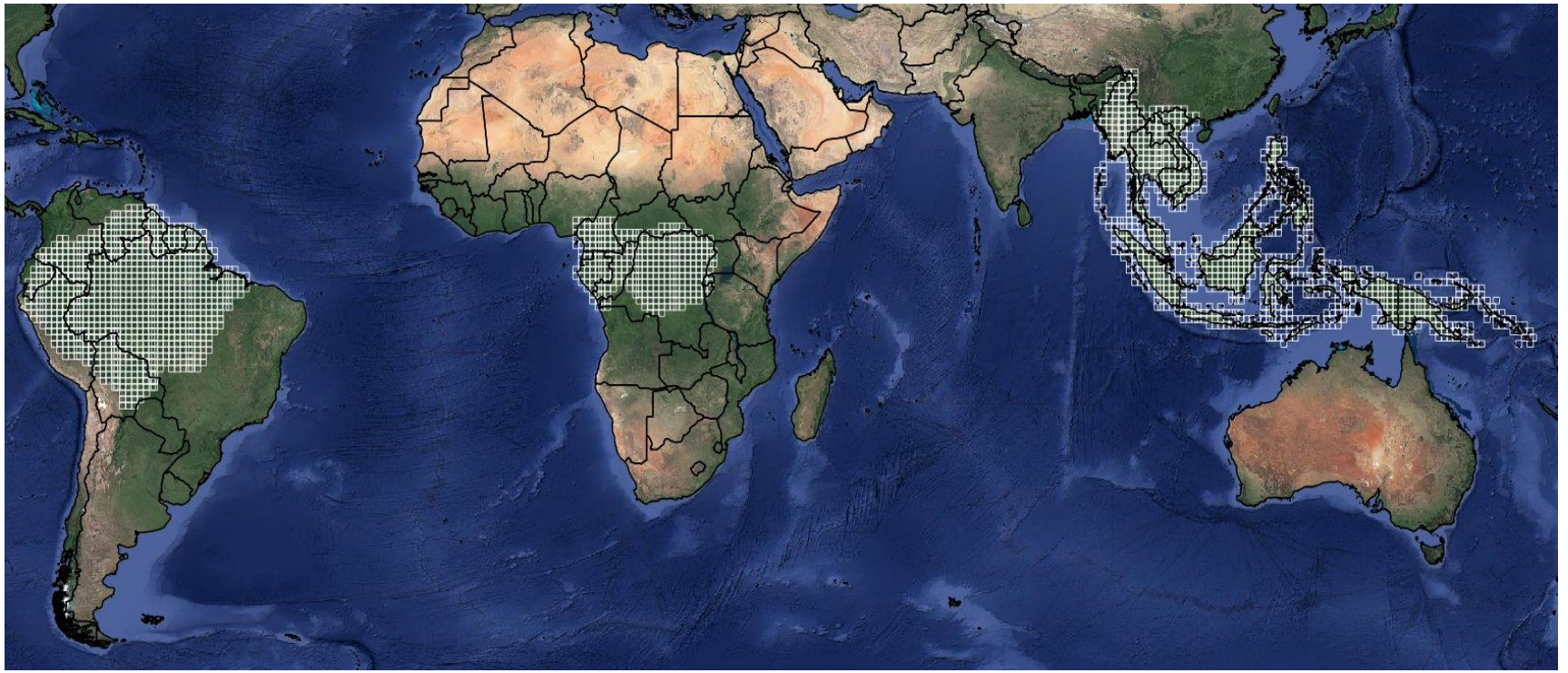
oct. 2021 **apr. 2022** **2024**



Phase 2 of the TropiSCO project

Phase 2 Roadmap:

2022:
- Carbon loss maps
- Extension to Congo basin forests
- Collaboration with INPE for implementing the new Brazilina alert system

2023:
- Extension to Amazonia and Asia
- Detection improvement using additional EO data
- Decrease of the size of detectable forest losses (from 0.1ha to 0.02ha)

Parallel activities
- Extension to tropical dry and temperate forests

The TropiSCO webGIS

www.tropisco.org

- Interactive mapping, from global view to pixel level
- Interactive information : detection date, statistics
- Direct download of products
- WMS for direct integration to GIS tools
- GLAD comparison tool

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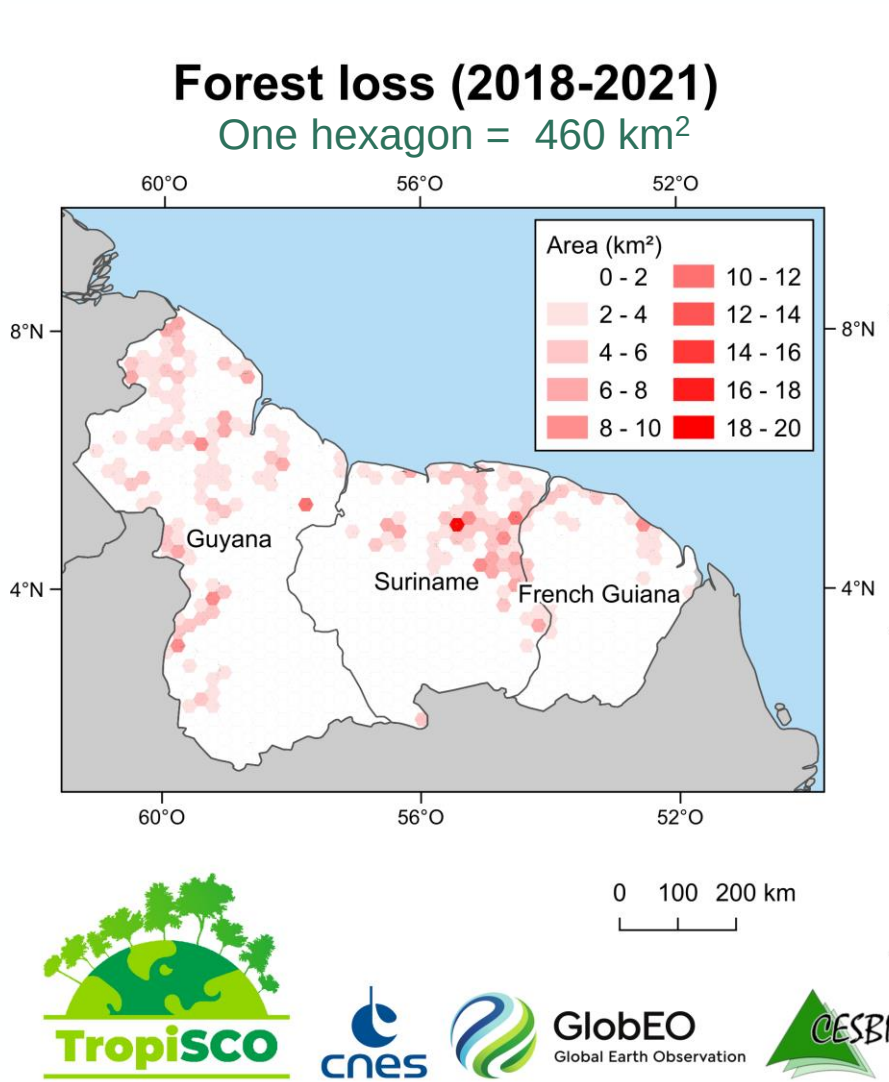
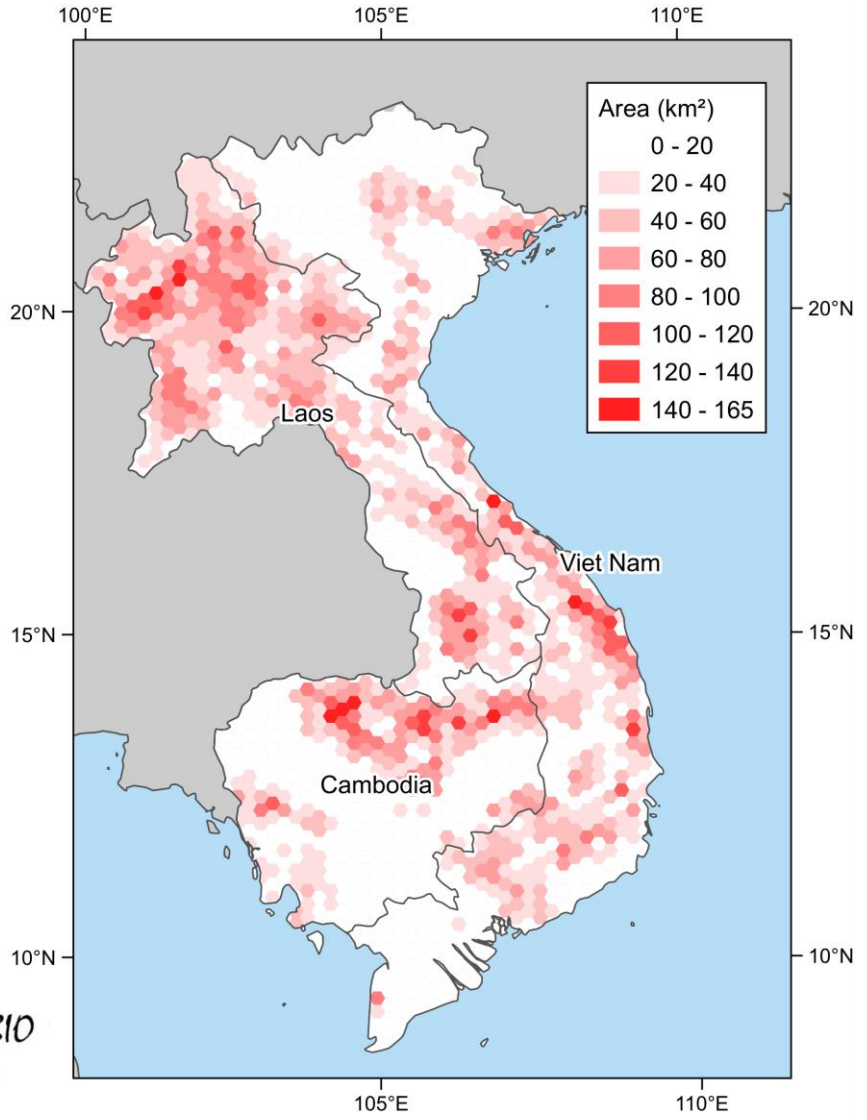
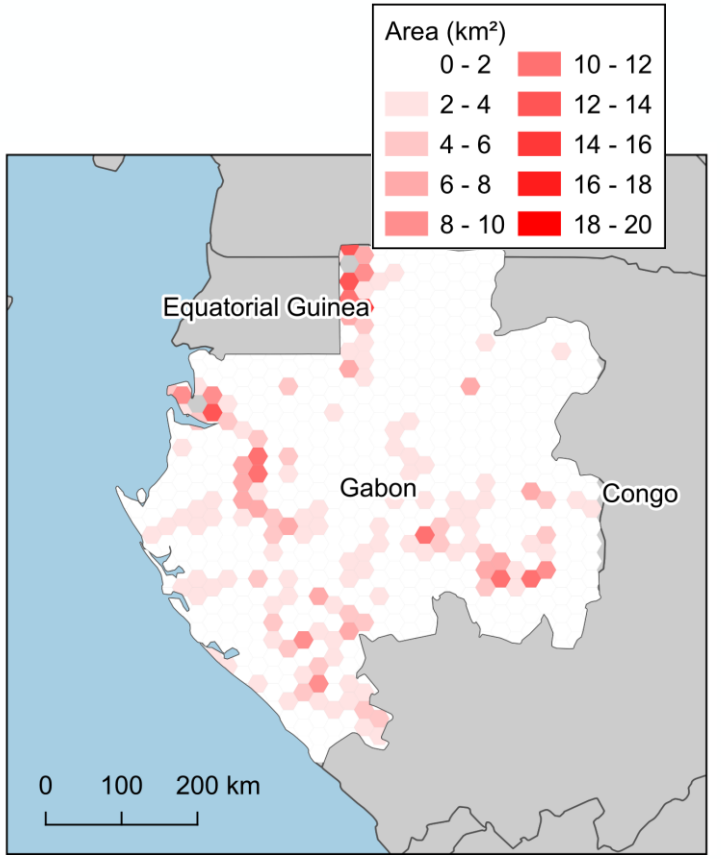
Forest loss synthesis







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Contacts and references

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