



NICFI
SATELLITE DATA
PROGRAM

Providing Satellite Imagery of the World's Tropical Forests



Pooja Pandey · September 2023

TROPICAL FOREST · Virunga National Park, Democratic Republic of the Congo · June 2020



Agenda

- Overview of the NICFI Satellite Data Program
- Users, Usage and Uses cases
- Impact





Overview of the NICFI Satellite Data Program



+ Purpose



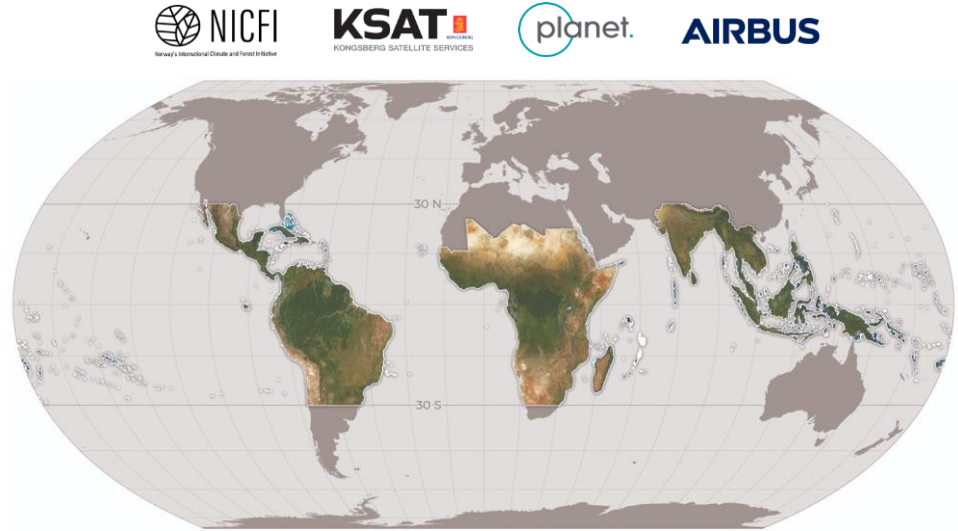
NICFI SATELLITE DATA PROGRAM

Reducing & reversing the loss of tropical forests,
contributing to combating climate change,
conserving biodiversity,
and facilitating sustainable development.



Data Products

- **Mosaics:** Visual & Analysis-Ready Surface Reflectance
 - Spatial Resolution: 4.77m per pixel
 - Spectral Resolution: RGB & RGB+NIR
- **Cadence**
 - Bi-annual: December 2015 – August 2020
 - Monthly: September 2020 until the end of the program
- **CC-Non-Commercial License**





Users & Use cases: Who? What for?



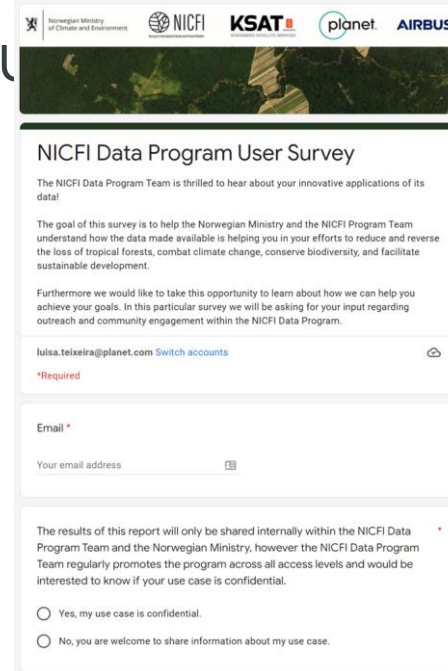
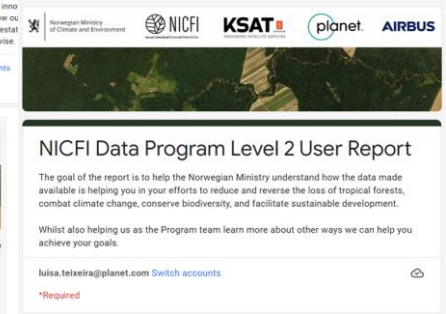
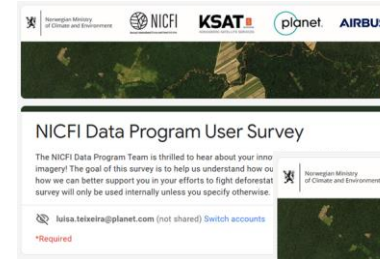


User Stories

500+ accounts on how the
NICFI Satellite Data Program
data products are being u

Collected through

- Surveys
 - Academic publications
 - Social media
 - Direct reports
- Aim at
 - Gather feedback to inform and improve the Program activities
 - Monitor impact to inform the future of the Program

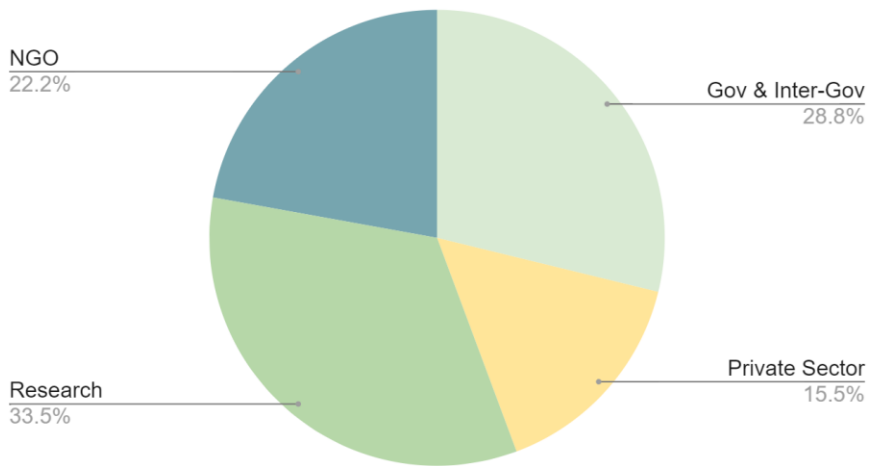




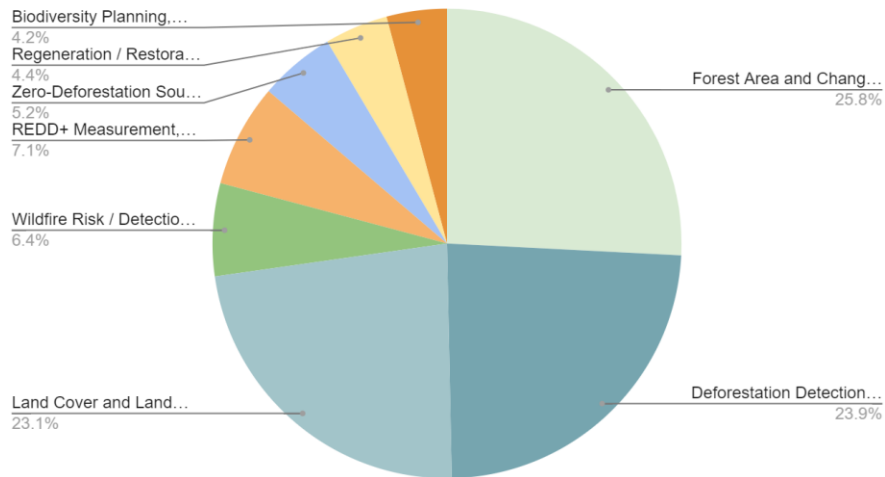
User Typology

Who is using the data? What for?

Organization type



Number of use cases



+ Challenges

- Connectivity
- Local actors empowerment
- Law enforcement efficiency and effectiveness





Impact

CYCLONE YASA • Labasa, Fiji • December 18, 2020



Track Pulp-and-paper driven deforestation in Indonesia

Nusantara Atlas

Level 1 user - Basemaps
Indonesia

Analysis by TheTreeMap, conducted using Sentinel-2 and Planet/NICFI satellite imagery.

Demonstrates the expanding pulp and paper industry in Indonesia over peatlands.

In 2022, a larger area of primary forest was converted to plantations (acacia and eucalyptus) indicating a doubling in pulp-driven deforestation and the highest level since 2014.



Time lapse satellite animation revealing **clearing of primary forest** in preparation for monoculture acacia planting. Created using NICIF Satellite Program Basemaps. Processed in Nusantara Atlas.

Taken from <https://nusantara-atlas.org/pulp-and-paper-driven-deforestation-in-indonesia-accelerates-in-2022/>

2021-12



Source: Nusantara Atlas, GEE, geemap, Planet

Time lapse animation revealing **clearing** and **draining** of **peat swamp forest** in preparation for oil palm in North Kalimantan, Indonesia. Created using NICIF Satellite Program Basemaps. Processed in Nusantara Atlas.

NUSANTARA ATLAS

Track Palm oil-driven deforestation in Indonesia

Nusantara Atlas

Level 1 user - Basemaps

Indonesia

TheTreeMap's analysis of NICFI Basemaps shows that the rate of conversion of to primary forest to palm oil plantations has decreased during the first seven months of 2022 in Indonesia.

However, it includes approx 2,200 hectares of peat swamp forest, which is often an essential habitat for orangutans. In addition, researchers confirm based on satellite image that some deforestations occur close to indigenous peoples' territories.

TheTreeMapy, 2022. From <https://nusantara-atlas.org/expansion-of-indonesian-palm-oil-plantations-keeps-slowing-in-2022/>





Pulitzer Center - Rainforest Investigations Network

NICFI Basemaps helped the **Rainforest Investigations Network (RIN)** to carry out journalism investigations on environmental crimes in the **Amazon, Congo Basin** and **Southeast Asia**.

They use NICFI Basemaps in the **Planet Explorer plugin** on **QGIS** to verify information of **deforestation** and **land use changes** and to do GIS analysis comparing land uses in protected areas and indigenous territories.

Impact of the NICFI Program

- Around **14 articles** have been published using satellite images from the NICFI Data Program for its analysis

Retrieved from Pulitzer Center, "DRC: A Polluting Palm Oil Business is Shaming European Development Banks"

10 km



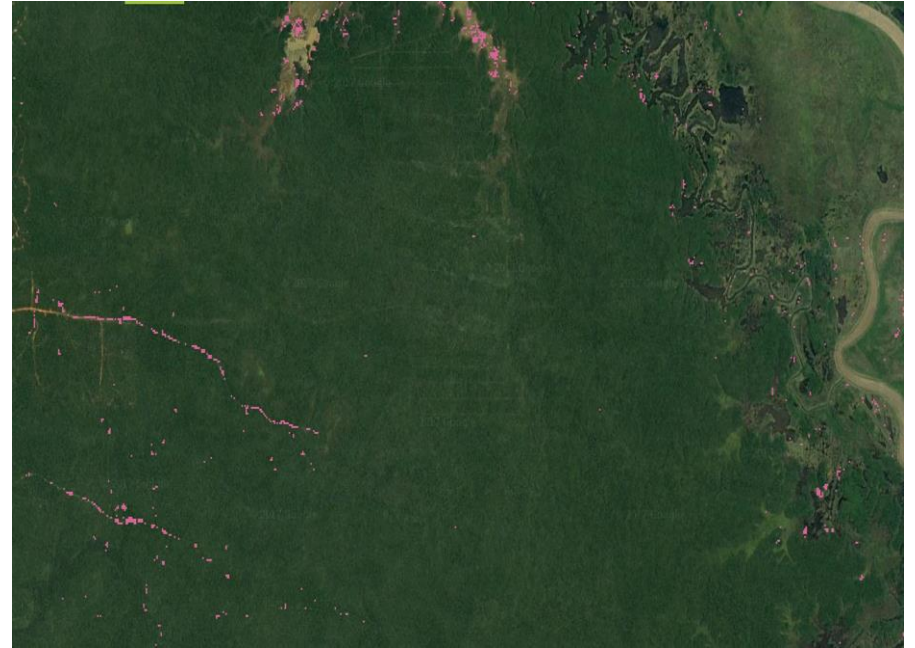
Bringing Transparency: Putting High-Res Data to Work in Civil Society

Global Forest Watch

User level 2 - Basemaps

Global

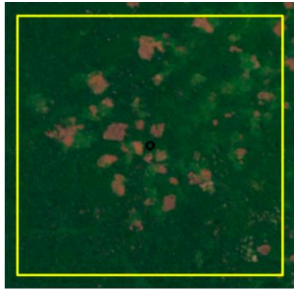
- Confirm deforestation and fire alerts
- Validate and improve existing datasets
- Develop land cover maps for key commodities
- Prototype methods for degradation monitoring



GLOBAL
FOREST
WATCH

+ Drivers of Deforestation & Degradation with the Central African Forest Initiative

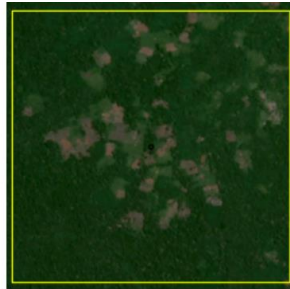
Level 1 - Mosaics



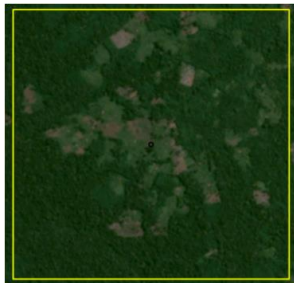
Planet 2015



Planet 2016



Planet 2017



Planet 2018



Planet 2019



Planet 2020

CAFI brings together the six Congo Basin countries and multilateral donors. They are holding regular technical trainings to increase adoption of high-res monitoring.

“In the central African forest, we were missing a substantial amount of even easy to detect degradation with anything else other than the Planet-NICFI Data.”



Impact of the Program

>300

USER STORIES
COLLECTED

130 countries

REGISTERED TO USE
THE PROGRAM

25% increase

OF USAGE OF NICFI DATA ON
GFW Q1 – Q2 2021

63%

OF TOTAL BASEMAP SELECTIONS ON
GFW FOR FIRST 6 MONTHS OF THE
PROGRAM WERE THE NICFI
BASEMAPS

70%

OF USERS SURVEYED USE
NICFI DATA AS THEIR
PRIMARY IMAGE SOURCE

97 countries

INCLUDED IN THE
PROGRAM

11

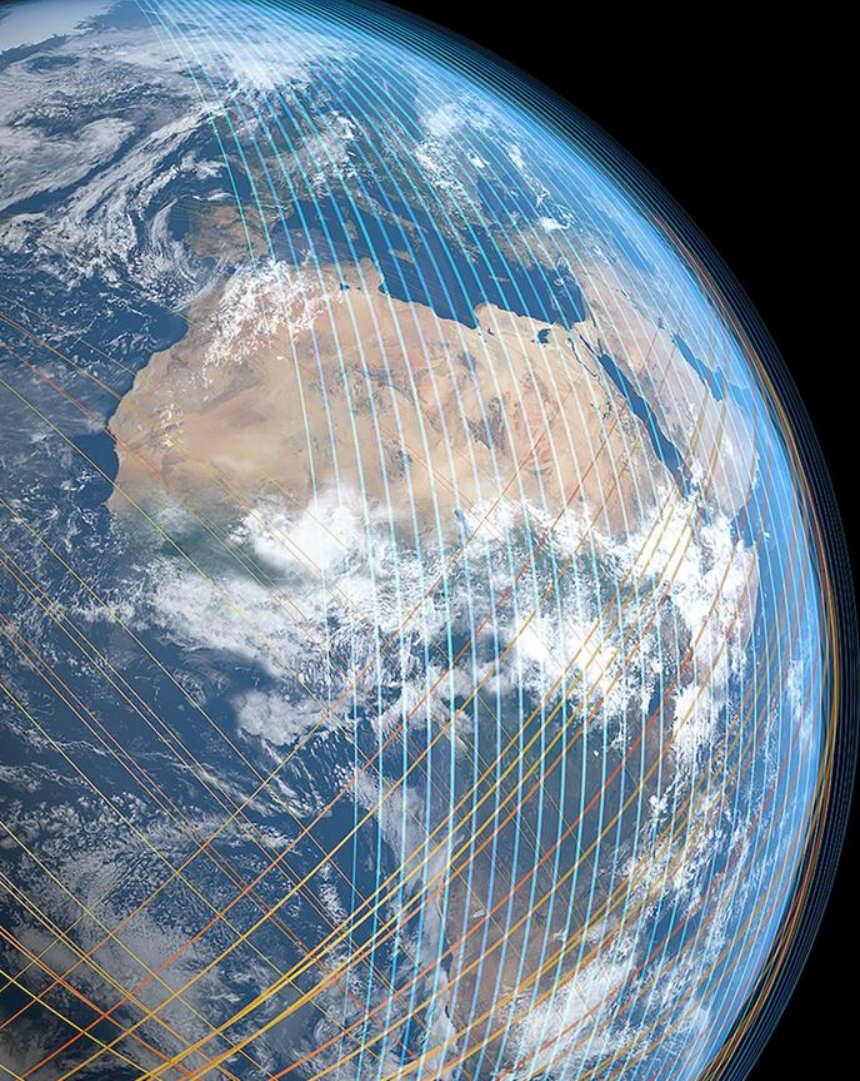
JOURNAL ARTICLES IN
PEER REVIEW PROCESS

15.1 million

TILES STREAMED FROM
PLANET EXPLORER

9,000

USERS REGISTERED



Thank you.



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