

ORBIFY SAMPLE EUDR COMPLIANCE REPORT

2023

3,181.6 ha
Maintained forest area

Category	Value	Change
LOST	443.8 ha	11.22%
GAINED	78.6 ha	1.99%

82.36 %
Forest ratio

Forest loss (by year)

Year	Forest loss (hectares)
2001	0
2002	0
2003	0
2004	20
2005	20
2006	0
2007	150
2008	140
2009	20
2010	50
2011	10
2012	0
2013	0
2014	0
2015	0
2016	0
2017	0
2018	50
2019	10
2020	0
2021	0
2022	300

orbify

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INTRODUCTION

Orbify Geospatial Platform is an innovative solution for evaluating, monitoring, and marketing natural assets.

Our platform uses three types of satellite imagery to conduct the analysis:

1- Optical imagery provided by

- Multiple providers, primarily the [Copernicus Sentinel-2](#) mission, launched by European Space Agency, and the Landsat program operated by NASA. As needed, supplemented with data coming from commercial providers like [Axelspace](#) or [Planet](#) to ensure high enough revisit time and spatial resolution appropriate for the specific project. All satellites provide imagery in, at least, four basic bands (visible red, green, and blue, and near- infrared), while the Sentinel-2 mission goes up to 10m spatial resolution and 13 bands of spectral resolution (besides visible and near-infrared, e.g., vegetation red edge and short-wave infrared).

2- LiDAR (Light Detection and Ranging)

for measuring forest canopy height, canopy vertical structure, and surface elevation, obtained from

[NASA's GEDI](#) (Global Ecosystem Dynamics Investigation) mission that uses an instrument attached to the International Space Station

3- SAR (Radar) – from multiple providers primarily [the European Space Agency's Sentinel-1 SAR](#) (Synthetic Aperture Radar) satellite operating in the C-band spectrum providing a 10m spatial resolution and 12-day temporal resolution, supplemented by commercial imagery as needed.

The data is interpreted by machine learning, regression and classification models. When available we make use of in-situ measurements serving as the source of ground truth and calibration.

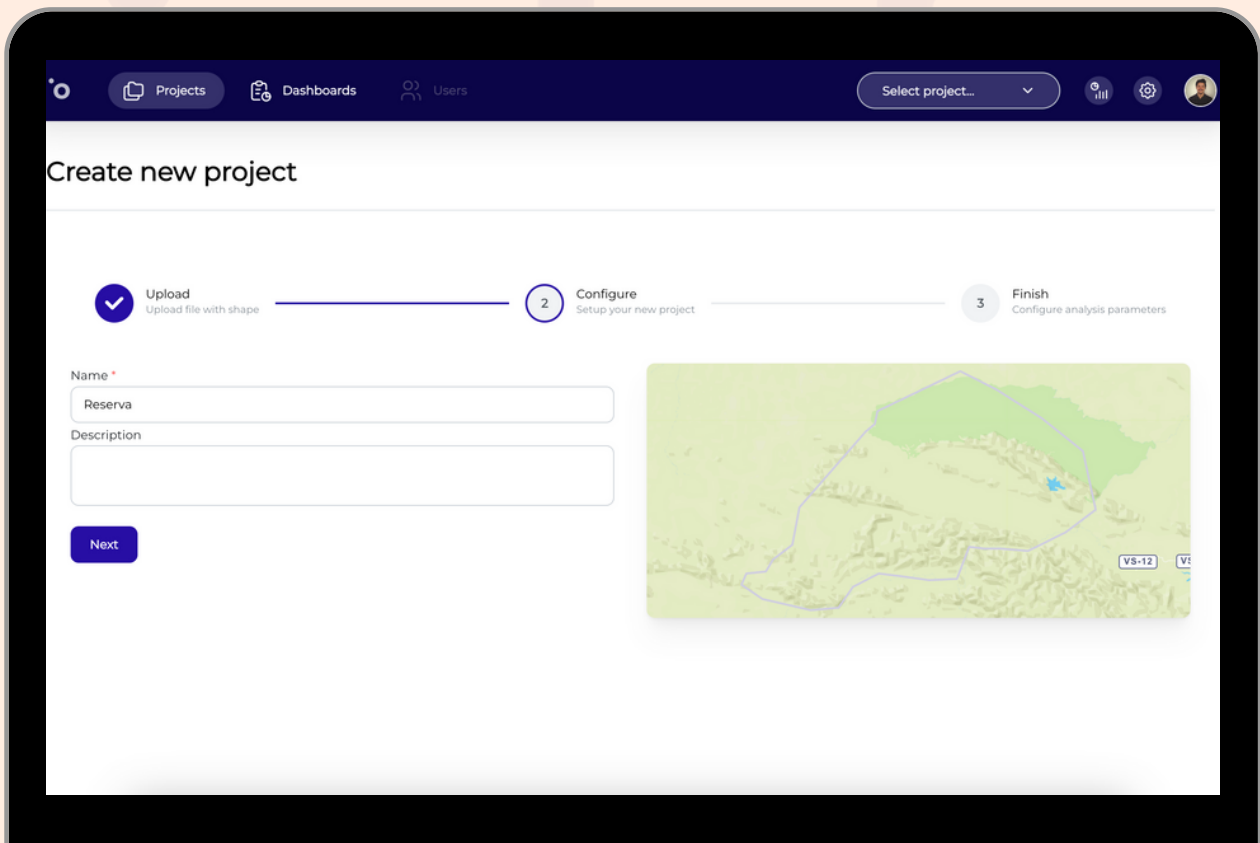
Validating project compliance with the European Deforestation Regulation (EUDR) becomes a streamlined process with Orbify Geospatial Platform's data analysis solutions.

USER MANUAL

On the Orbify Geospatial Platform, users can easily access detailed information and receive evidence for the deforestation status, by simply plugging in the project area or geocoordinates. All automated with ease on a ready to use platform.

This provides a level of transparency that allows users to fully understand the data and analysis being presented, and to confidently use the insights gained for decision-making purposes.

Within the rich set of options, users can easily validate the compliance of a project with the European Deforestation Regulation (EUDR) by leveraging the data analysis and information provided by the platform.



PROJECT REPORT

Legislative Background

The goal of this report is to showcase how Orbify platform can provide data for the due diligence process for The EU Deforestation-free Regulation (EUDR). Currently the supply chains of six main commodities are being subject to the EUDR: cattle, cocoa, coffee, palm oil, soya, wood/timber, rubber & charcoal [1]. In the following paragraphs we'll look at the legislation interpretation guidelines and how Earth Observation data can be of use in the due diligence process.

Principal source of information on the EU legislation:

- [Press release](#)
- [Overview \(short\)](#)
- [Executive Summary](#)

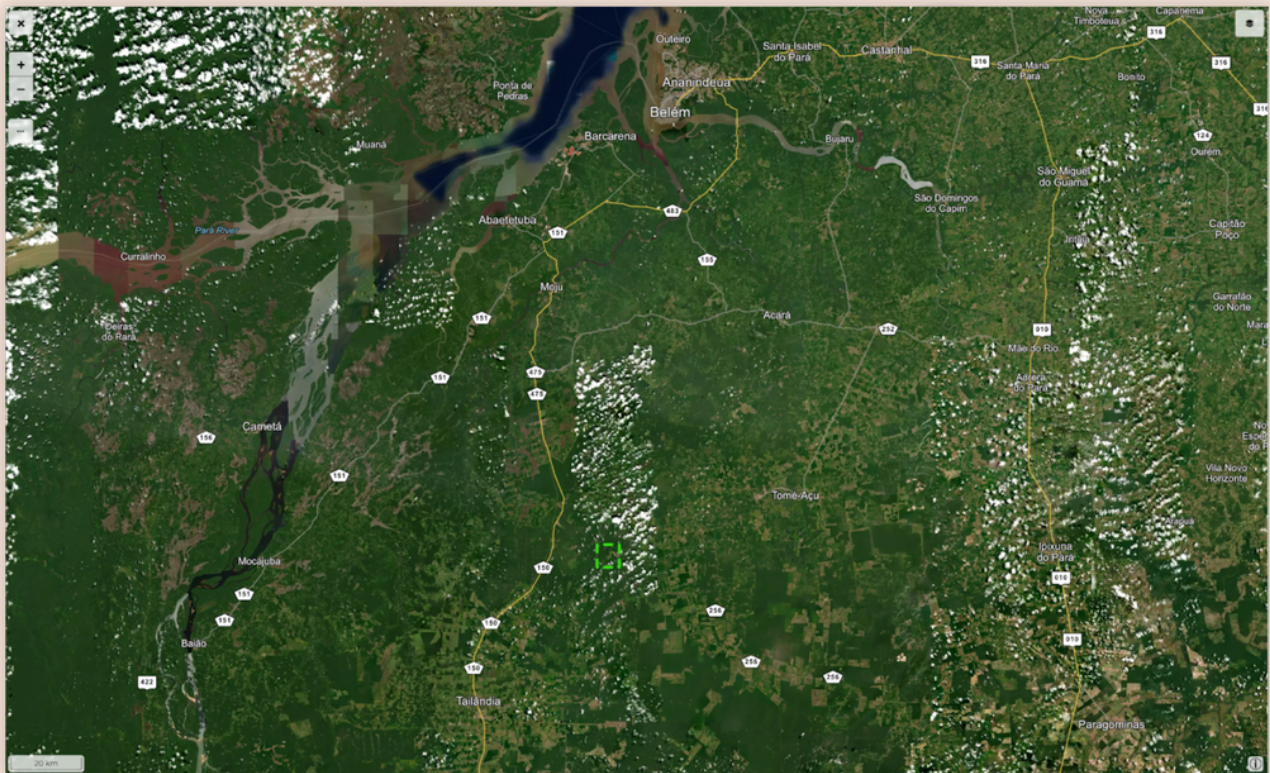
Due diligence guidelines set in legislation:

1. Operators and traders will have to prove that the products are both deforestation-free (produced on land that was not subject to deforestation after 31 December 2020) and legal (compliant with all relevant applicable laws in force in the country of production)
2. Companies will also be required to collect precise geographical information on the farmland where the commodities that they source have been grown, so that these commodities can be checked for compliance.
3. The Commission will run a benchmarking system that will assess countries or parts thereof and their level of risk of deforestation and forest degradation - a high, standard or low risk.

PROJECT REPORT

Project Analysis - Palm Oil Plantation, Itapeua Commune

To illustrate how to use Earth Observation data for the due diligence certificate we chose a palm oil plantation in the Brazilian state of Pará, Itapeua commune. The plantation under consideration is located 120 km south of the port city of Belem in Brazil. In the vicinity of the state road PA-256. Approximate coordinates: 2 deg 34' S, 48 deg 37W.

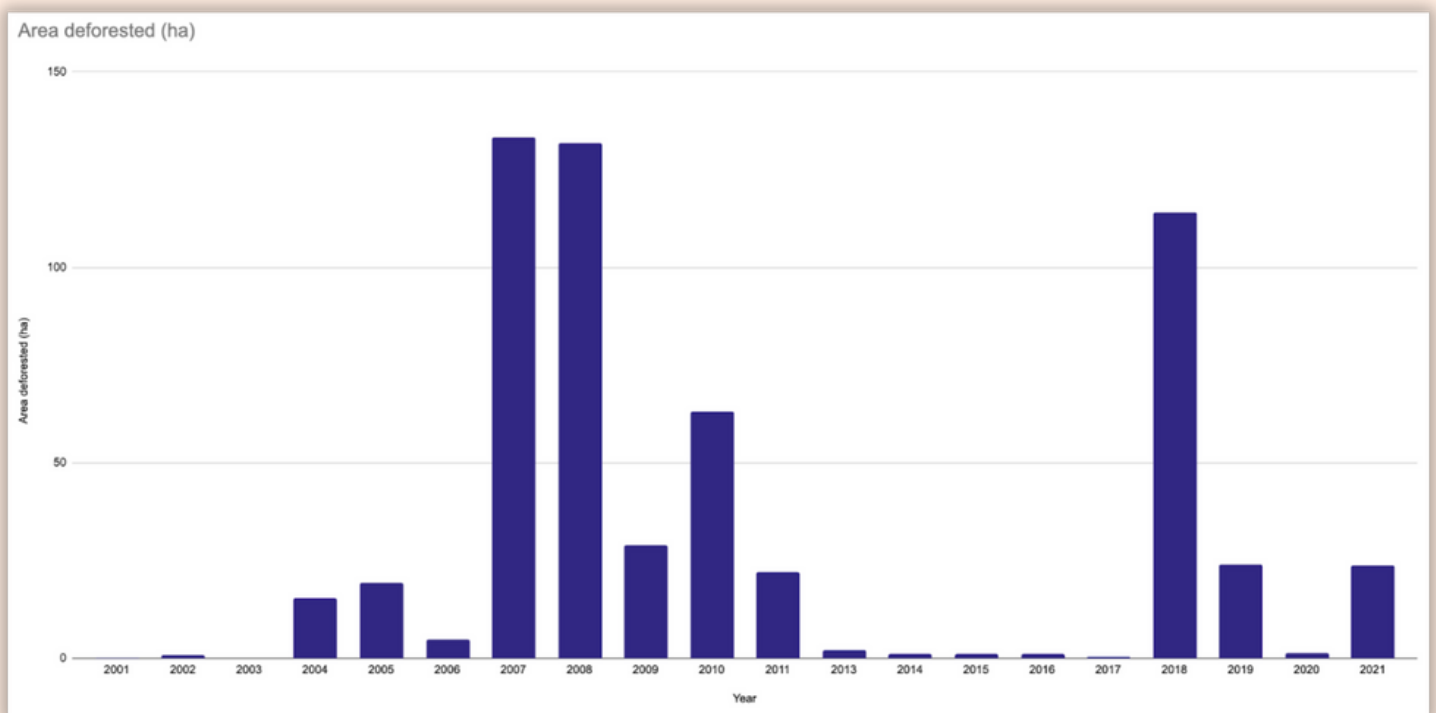


Location of the plantation

PROJECT REPORT

Project Analysis - Palm Oil Plantation, Itapeua Commune

A look at the deforestation statistics on the plantation and in the surrounding region (derived from Global Forest Change, Hansen et al 2013)

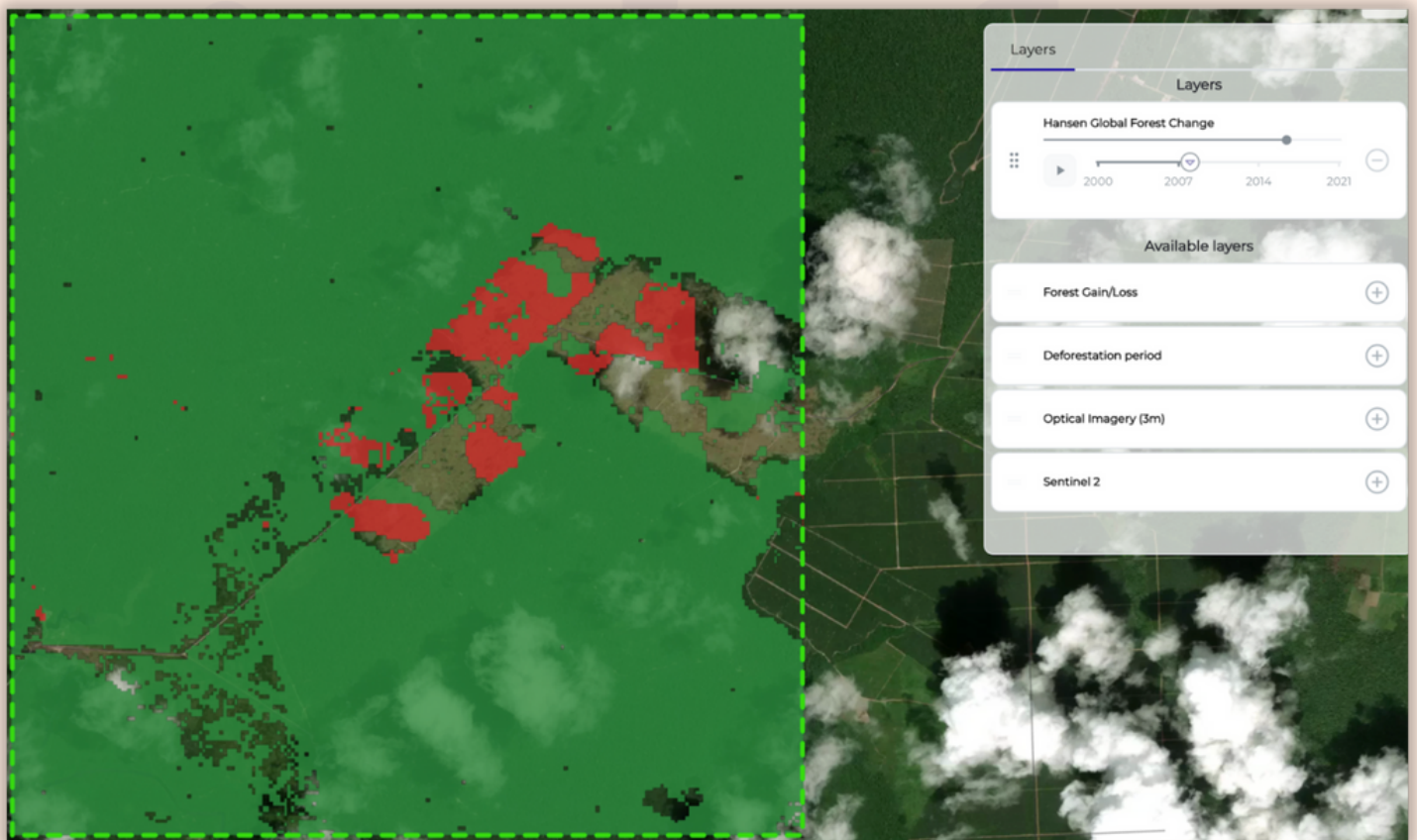


Deforested area (ha) over the years

PROJECT REPORT

Project Analysis - Palm Oil Plantation, Itapeua Commune

As we can easily assess through Orbify's Geospatial Data Platform (GDP) using a visualisation tool we can focus on the period before the EUDR was introduced: the bulk of the deforestation in the region surrounding the plantation has happened before 2013. Green - forest maintained, Red - forest lost, (The background image is a static map, just for illustration purposes).



Deforestation before 2013. Green = forest maintained, Red = forest lost

PROJECT REPORT

Project Analysis - Palm Oil Plantation, Itapeua Commune

Now let's look into deforested area since the introduction of the EUDR directive (2020.12.31 - 2023.05.01). Red - forest lost, (The background image is Sentinel 2 - enhanced to 3m, algorithm provided by Orbify, for illustration purposes). The latest analysis with high probability shows the expansion of the plantation area at the expense of the surrounding forest. Overall 595.9 ha were lost since the introduction of the EUDR. However, it is uncertain whether the logging was authorized or not.



Deforested area during in the analyzed period: 2020.12.31 - 2023.05.01

PROJECT REPORT

Wrap-up

In this report we used Orbify platform to demonstrate how earth observation (EO) data can contribute in compliance with the EUDR directive.

Although the whole verification process requires a number of steps to evaluate each link in the supply chain, the EO has a vital role in this process. EO is the most cost effective and publicly accessible tool for deforestation monitoring that provides global and local timely data.

This data is merged with the logging concessions database and forms the basis for the EUDR compliance report. Additionally, we made an example analysis of the data concerning the region surrounding one particular palm oil plantation in Brazil.

Our analysis point to the fact that the deforestation covering 595.9 ha has occurred in the studied area since 2020.12.31. Determining whether the deforestation is legal or not, requires an assessment with the farm owners to verify the logging authorisations in the region. By using geospatial data we generate high-quality and integrity-driven reports aligned with the requirements of the EUDR regulation that are capable of verifying the impact on local forests.

PROJECT REPORT

Methodology

Satellite analysis was carried out using a geospatial data platform developed by Orbify, Inc. (USA).

Orbify platform uses three types of satellite imagery to conduct vegetation assessment: 1. a. b. 2. 3. The data is interpreted by machine learning regression and classification models, trained with in-situ measurements serving as the source of ground truth and calibration, using all bands described below when they are relevant as input signals for calculating respective vegetation indicators.

1- Optical imagery provided by

- o Multiple providers, primarily the Copernicus Sentinel-2 mission, launched by European Space Agency, and the Landsat program operated by NASA. As needed, supplemented with data coming from commercial providers like Axelspace or Planet to ensure high enough revisit time and spatial resolution appropriate for the specific project. All satellites provide imagery in, at least, four basic bands (visible red, green, and blue, and near- infrared), while the Sentinel-2 mission goes up to 10m spatial resolution and 13 bands of spectral resolution (besides visible and near-infrared, e.g., vegetation red edge and short-wave infrared).

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WANT TO GET YOUR OWN REPORT?

Thank you for downloading the EUDR Sample Report executed on Orbify Geospatial Data Platform (GDP).

If you're ready to take the next step and see how Orbify can help your projects, please book a customized demo with us.

Our team of experts is standing by to answer any questions you may have and create a personalized demo for you.

[Schedule your personalized demo here!](#)

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