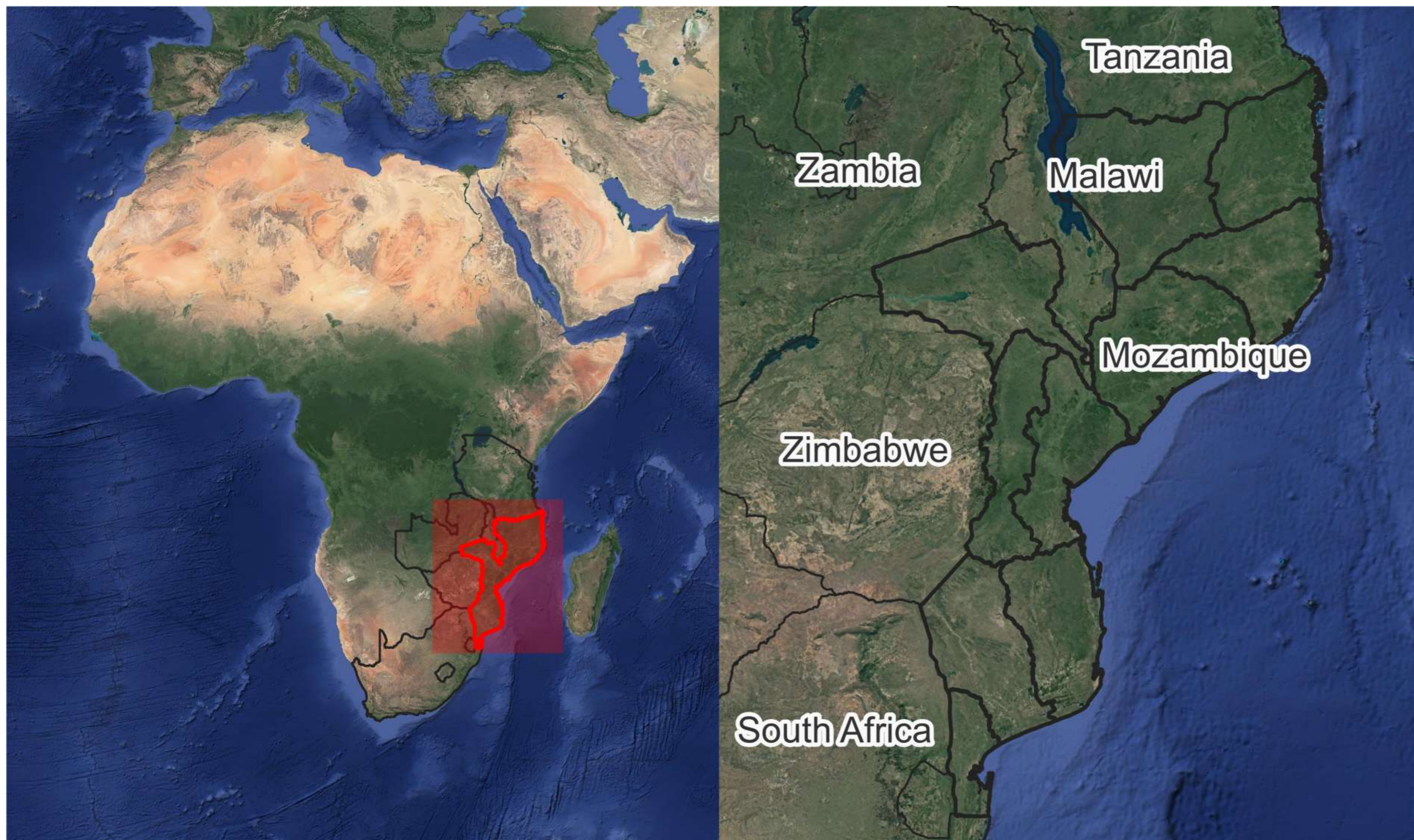COP29 – Side Event
Use of Earth Observation for Forest Monitoring and Reporting REDD+ in Mozambique

Muri Soares and Hercilo Odorico
MRV Unit, National Fund for Sustainable Development
November 21, 2024

Mozambique

Challenges for forest monitoring in Mozambique

- Miombo woodlands
  - Open forests
  - Deciduous
  - Frequent wildfires

- Small-scale shifting agriculture

Drivers for developing annual mapping of deforestation

1. Updating National GHG Inventory - LULUCF

2. Monitoring FCPF Zambézia Emissions Reduction Program

3. Generate estimates of deforestation at provincial and district level for management purposes

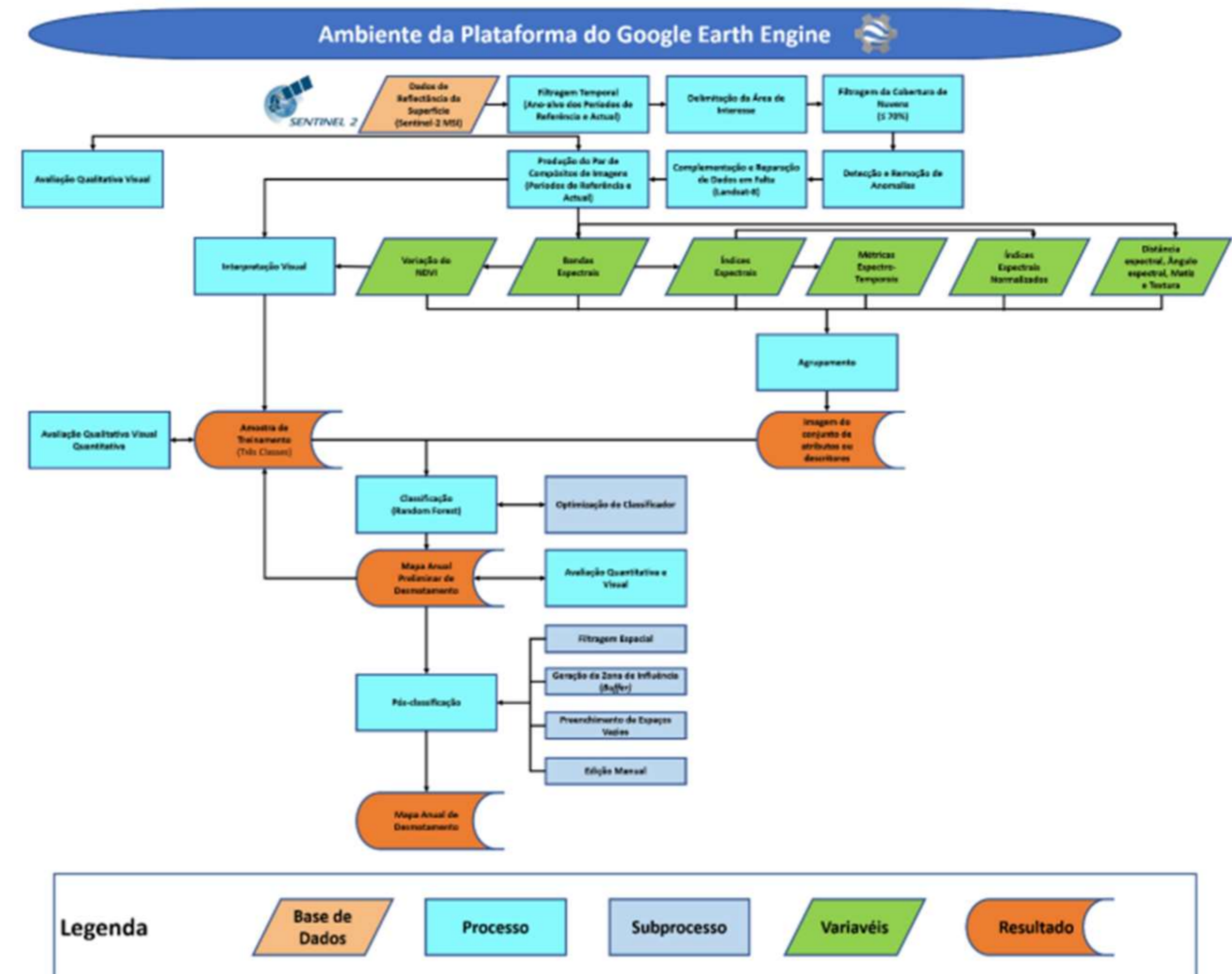4. Key indicator for rural development projects of the World Bank

Annual forest monitoring tool

Map production

- Google Earth Engine Platform

- Using Sentinel-2 imagery
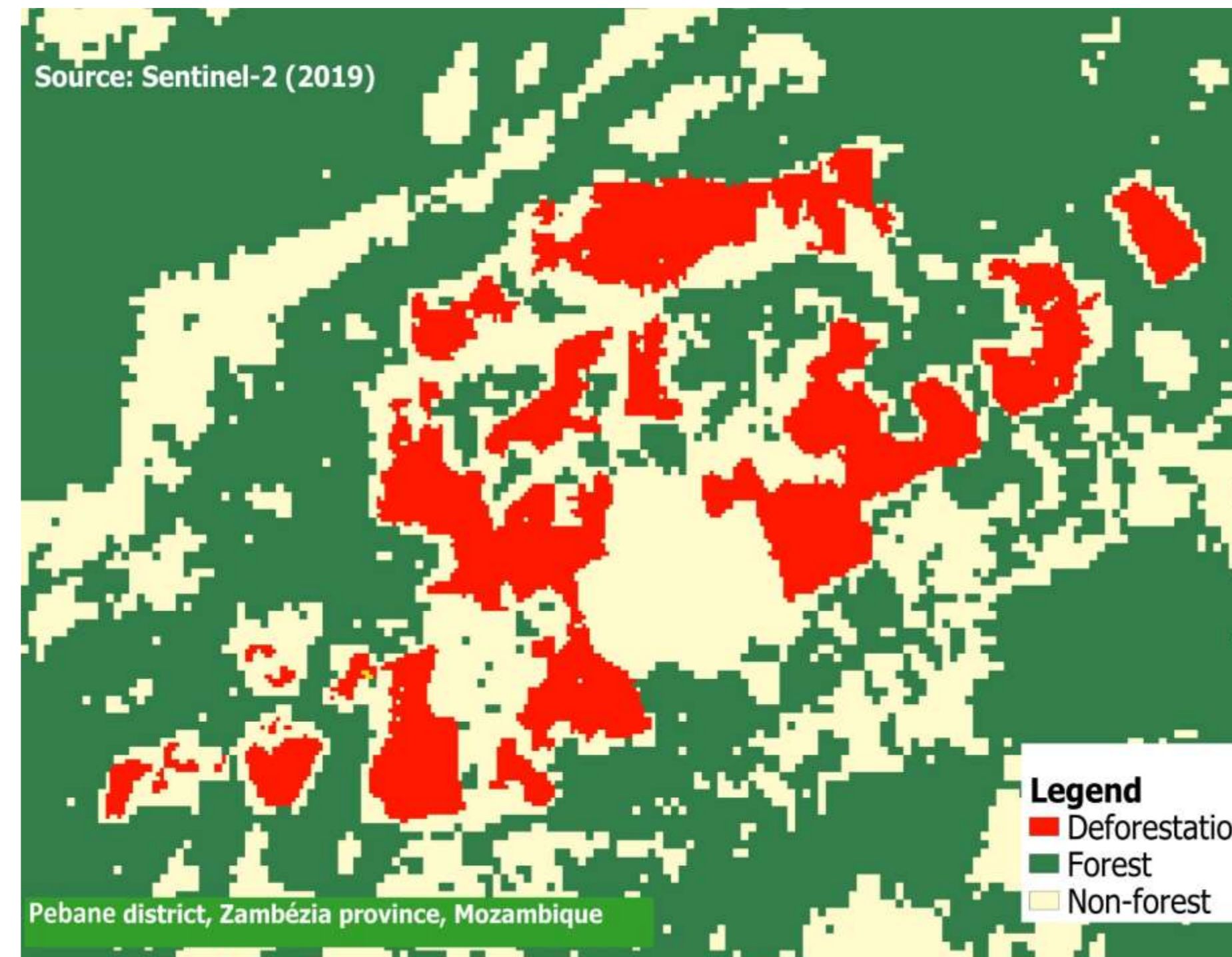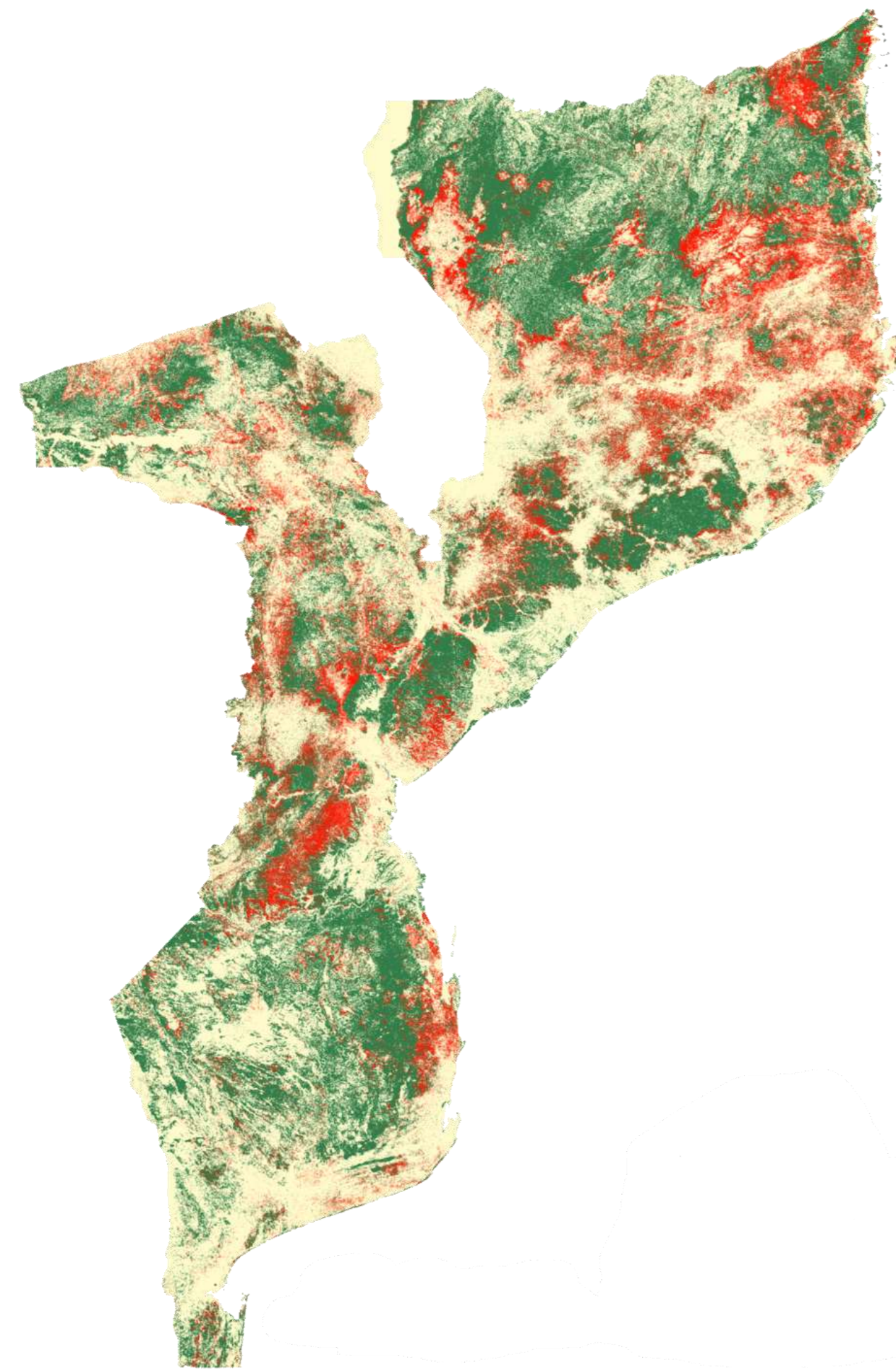
- Random forest classifier

Sample-based area estimation

- Statistically robust estimates of area

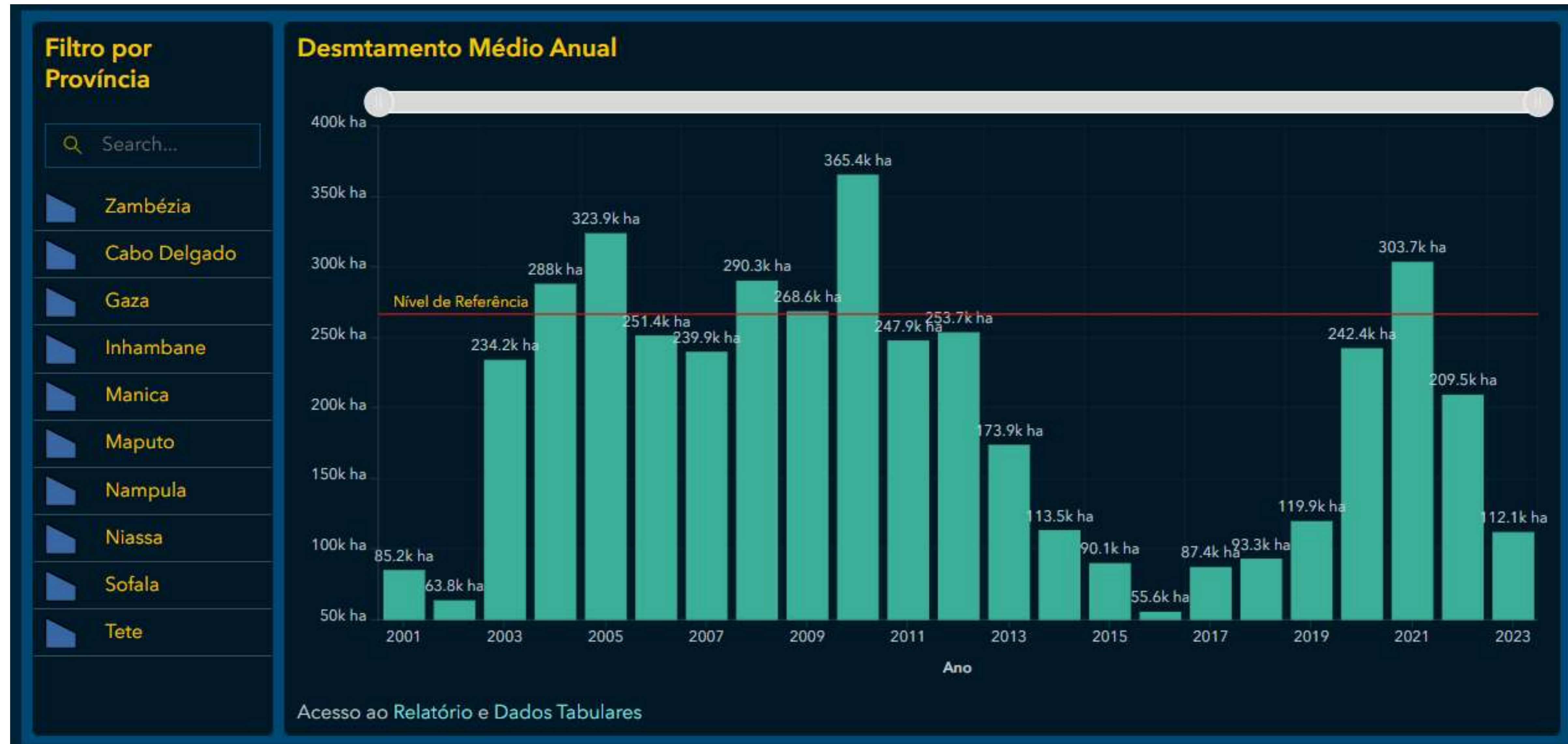- Validation using Planet, Sentinel-2 and Google Earth satellite imagery

Annual forest monitoring tool (2)

Source: Sentinel-2 (2019)

Legend
Deforestation
Forest
Non-forest

Pebane district, Zambézia province, Mozambique

Source Image:
Sentinel-2 (Change Detection)
PlanetScope (Validation)
Coordinates:
X 38.561238;
Y -16.730739

Pebane distrcit, Zambezía province, Mozambique - December 20, 2019

Deforestation statistics web portal

Results of forest monitoring system for REDD+ reporting

2018

- 1st FREL submission

2020

- 1st Monitoring Report for FCPF ER Program

2022

- 1st BUR REDD+ Technical Annex
- 2nd MR for FCPF ER Program

2024

- 2nd BUR REDD+ Technical annex
- 3rd MR for FCPF ER Program

MINISTÉRIO DA AGRICULTURA E DESENVOLVIMENTO RURAL

FNDS — Fundo Nacional de Desenvolvimento Sustentável

MRV

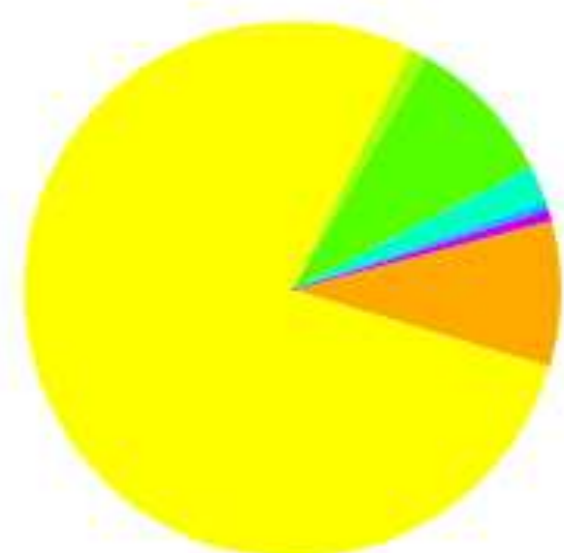https://bit.ly/pmrvfndsredd

Pontos Verificados

841

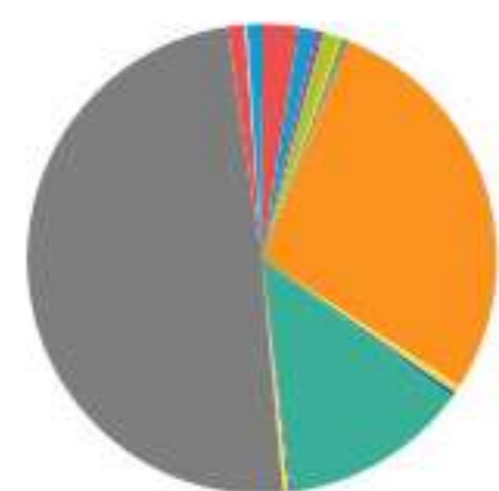## % de Confimação de Desmatamento

- Não 3.99%
- Sim 96.01%

Causas de Desmatamento

- Agricultura Comercial — 8.8%
- Agricultura Itinerante — 77.66%
- Assentamento Humanos — 1.05%
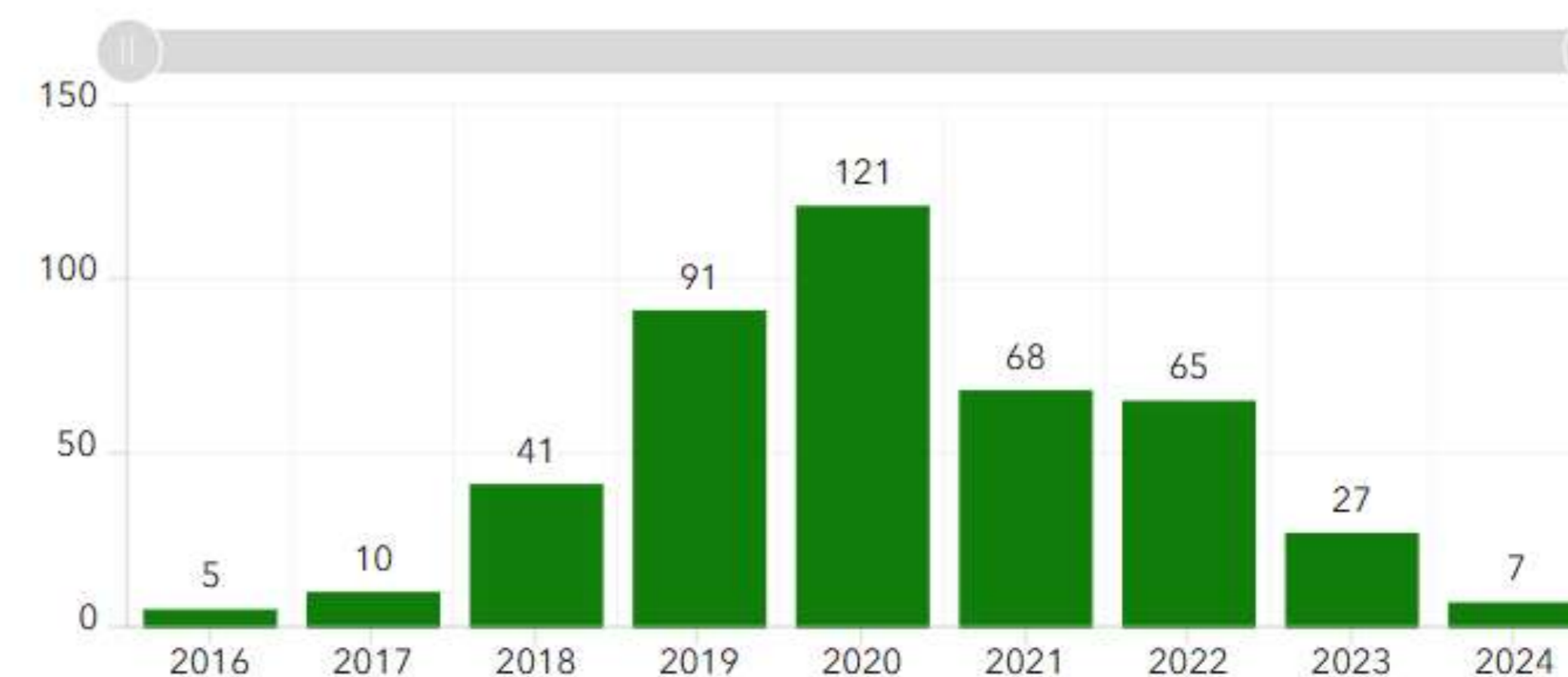- Exploração Florestal — 9.07%

Culturas praticadas nas áreas desmatadas

- Amendoim — 2.52%
- Arroz — 1.18%
- Bananeira — 0.5%
- Batata Doce — 1.18%
- Cajueiro — 0.17%
- Cebola — 0.34%

Last update: 2 seconds ago

Pontos Verificados por Ano de Desmatamento

- 2016 — 5
- 2017 — 10
- 2018 — 41
- 2019 — 91
- 2020 — 121
- 2021 — 68
- 2022 — 65
- 2023 — 27
- 2024 — 7

Last update: 2 seconds ago

Ano de desmatamento | Provincia | Distrito | Comunidade

Earthstar Geographics | Esri, HERE, Garmin

Powered by Esri

Conclusions

- Establishment of a national MRV team capable of monitoring forests was key

- Monitoring system allows generation of data for both national LULUCF inventory and jurisdictional REDD+ reporting

- Application of international best practices enabled a system that could pass both UNFCCC technical reviews but also validation and verification by international auditing firms

- Freely available imagery (Sentinel 2 - ESA, Planet – NICFI) and tools (Google Earth Engine, Collect Earth – FAO) allowed for cost-effective monitoring system

Visit us: http://www.fnds.gov.mz/mrv/