

Technological Advances and Challenges to avoid Amazon Deforestation

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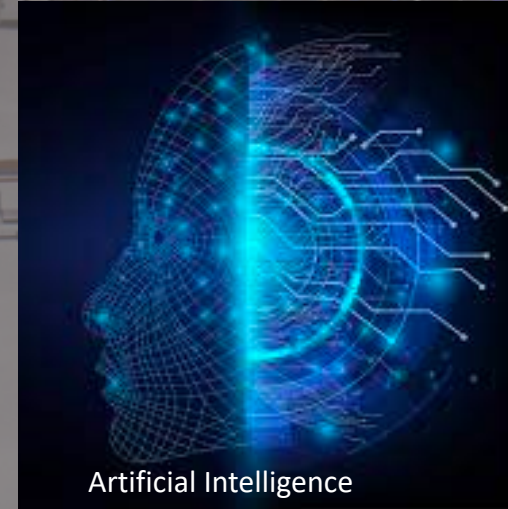
Associate Researcher, Imazon

Innovation pathway for a thriving Amazon

AmazonTEC2021 in Session 2

Thursday, October 21, 2021





Technological Advances

1. Satellite big data
2. Cloud computing
3. Opensource machine learning and Artificial Intelligence algorithms
4. Collaboration Network (Internet)

Annual Land use and Land
Cover Change During 1985
and 2020

1985

- Bosque
- Bosque inundable
- Formación Sabánica
- Manglar
- Formación natural no forestal inundable
- Formación campestre
- Afloramiento rocoso
- Otra formación natural no forestal
- Uso agropecuario
- Infraestructura urbana
- Minería
- Río, lago u océano
- Glaciar



POR UNA VISIÓN INTEGRAL DE LA AMAZONÍA

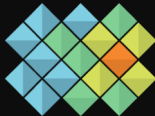
RAISG

RED AMAZÓNICA DE INFORMACIÓN SOCIOAMBIENTAL GEORREFERENCIADA

MÁS INFO



Gaia Amazonas



MAPBIOMAS
AMAZONIA

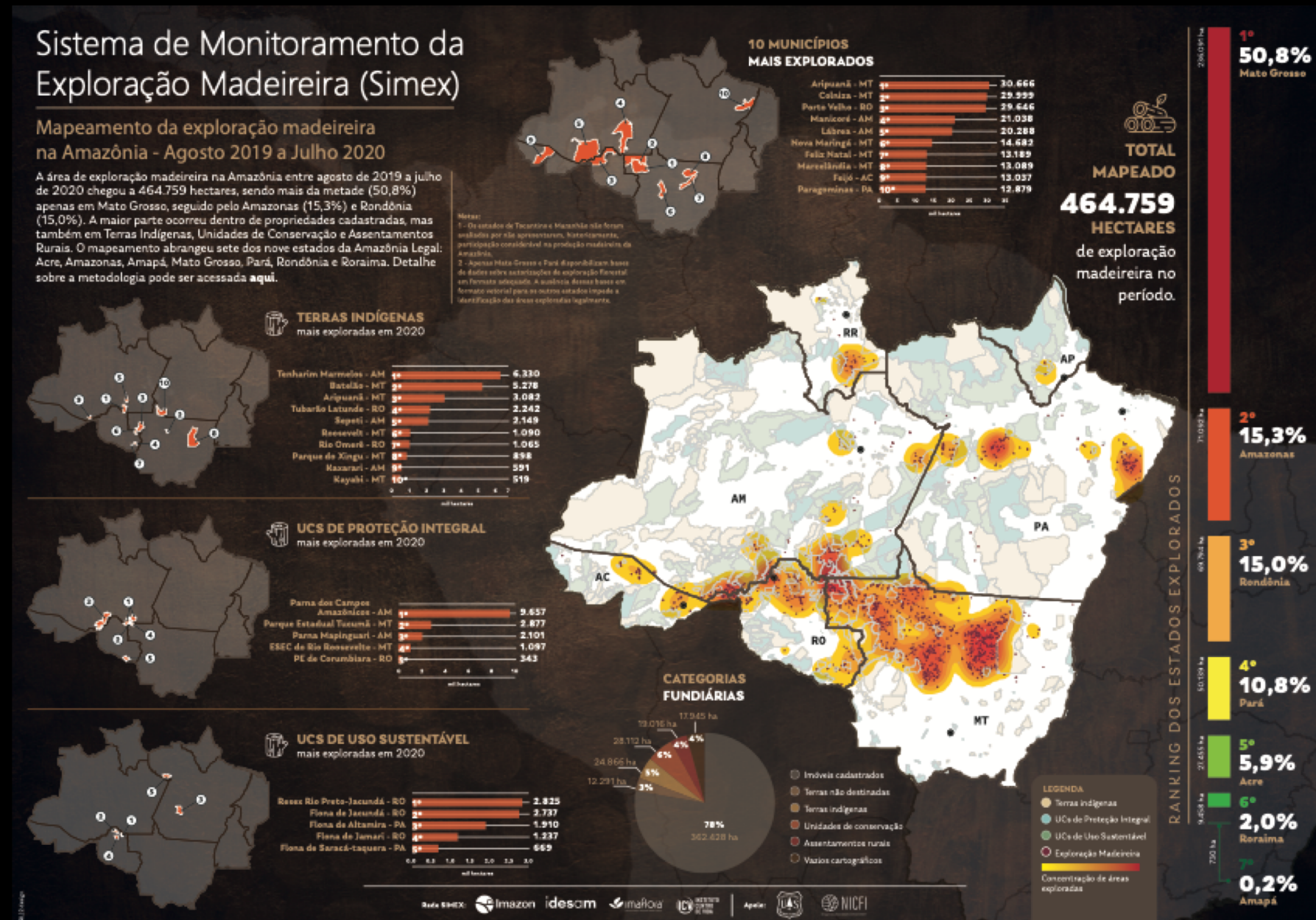


amazonia.mapbiomas.org



Monitoring and Assessment of Logging Legality in the Brazilian Amazon

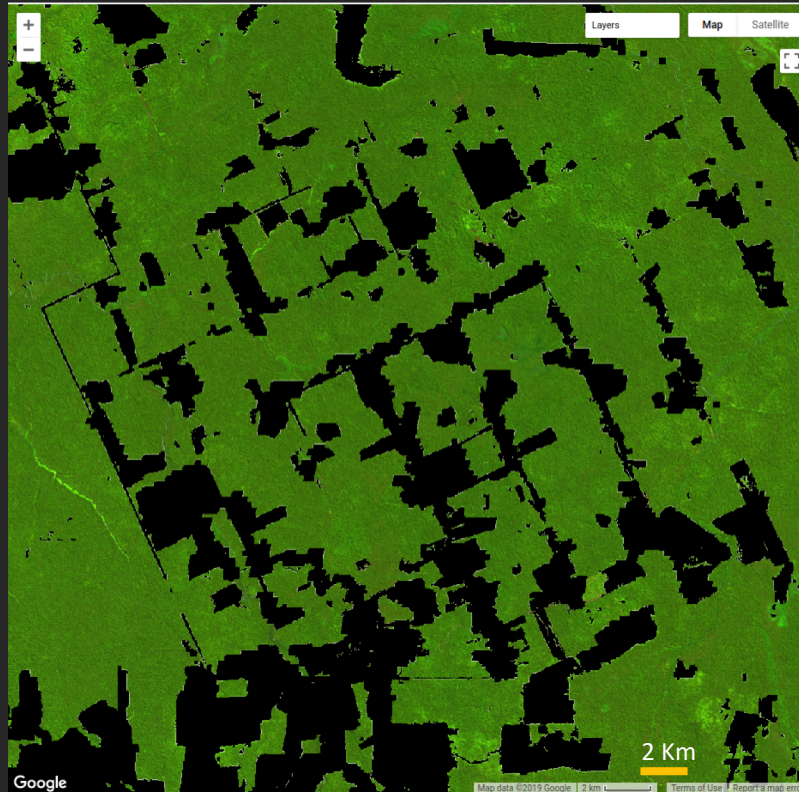
1. Satellite-based monitoring.
2. Logging permits in private lands and concessions.
3. Assessment of the forest management plan and level of transparency.
4. Partnership with state environmental agencies:
 - Access public data
 - Training technicians
 - Provide the technology and information to the states.
 - Report assessment with the environmental agencies.



Imazon's Deforestation Alert Monitoring System



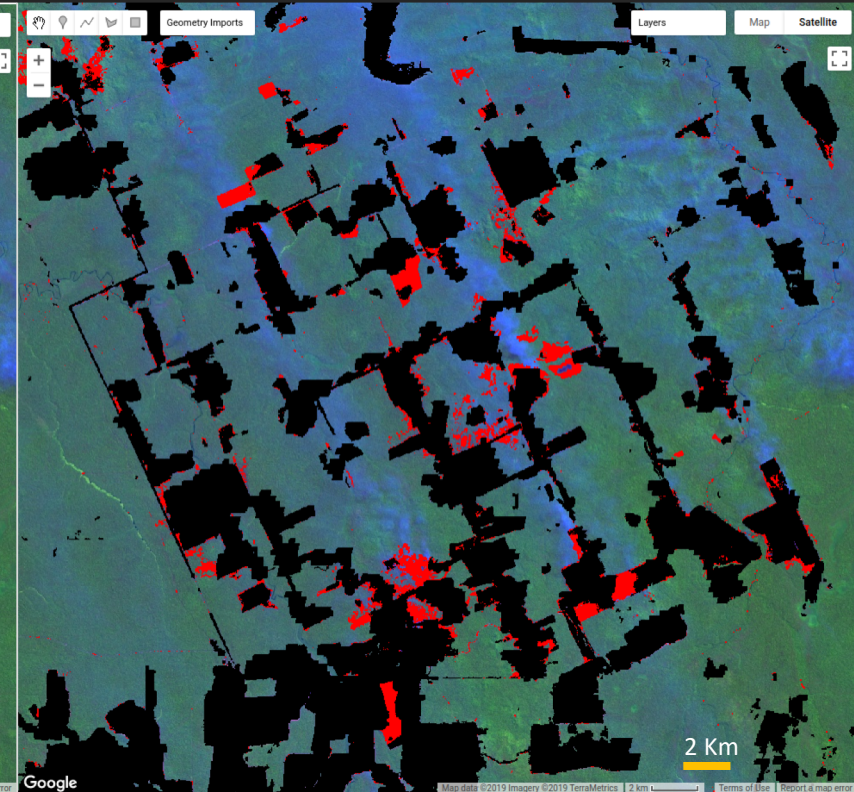
SAD Alerts Sep 2019, Aripuanã – MT
-62.4567, -8.8593



Aug 2019



Sep 2019

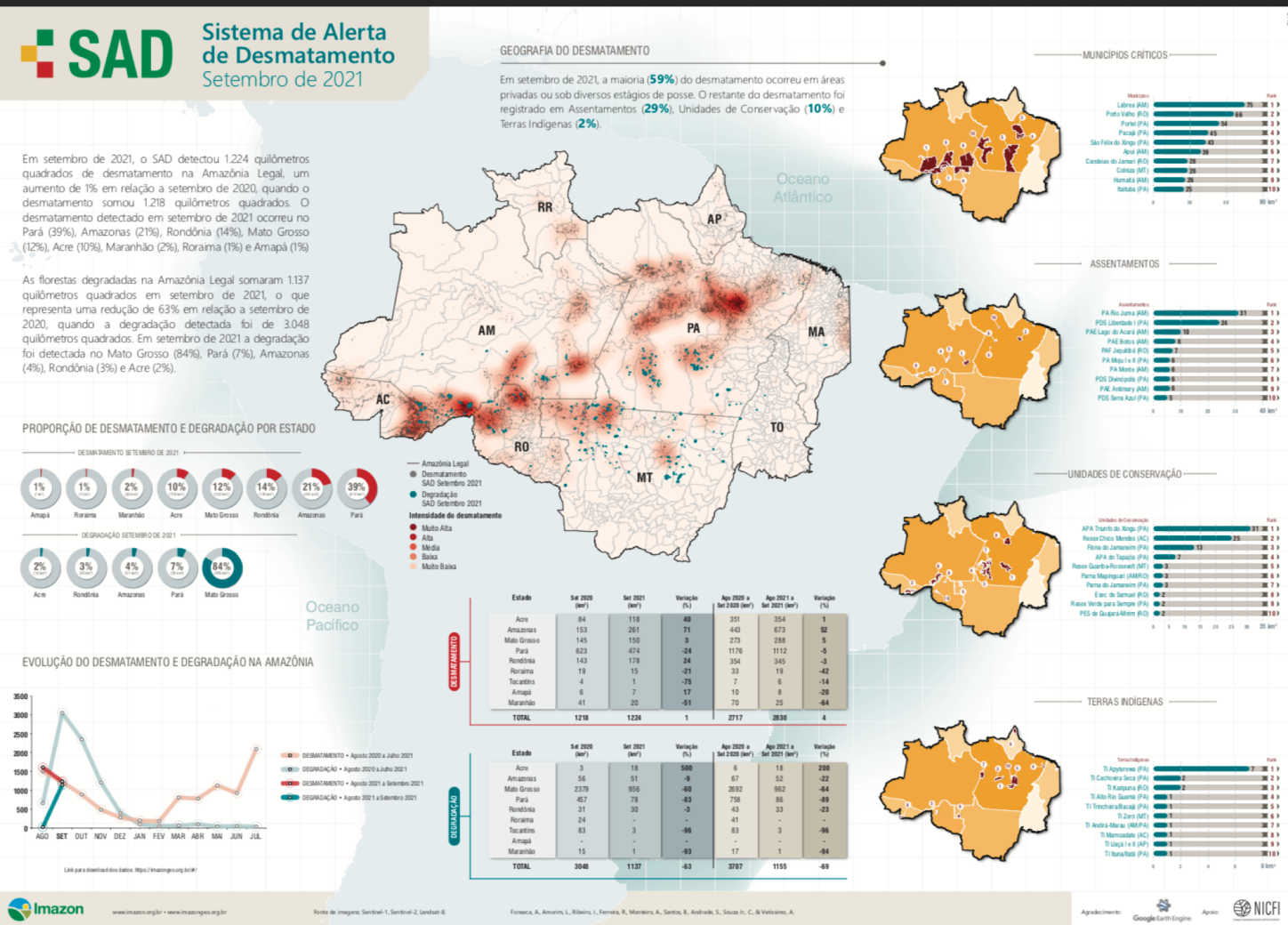


Deforestation Alerts (red)

g1

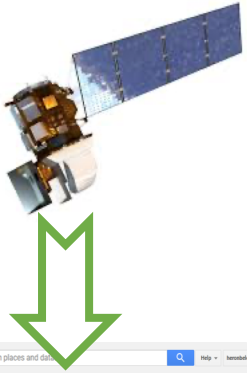
Desmatamento na Amazônia em setembro foi o pior para o mês em 10 anos, diz Imazon

20/10/2021 20h49 · Atualizado há 7 horas

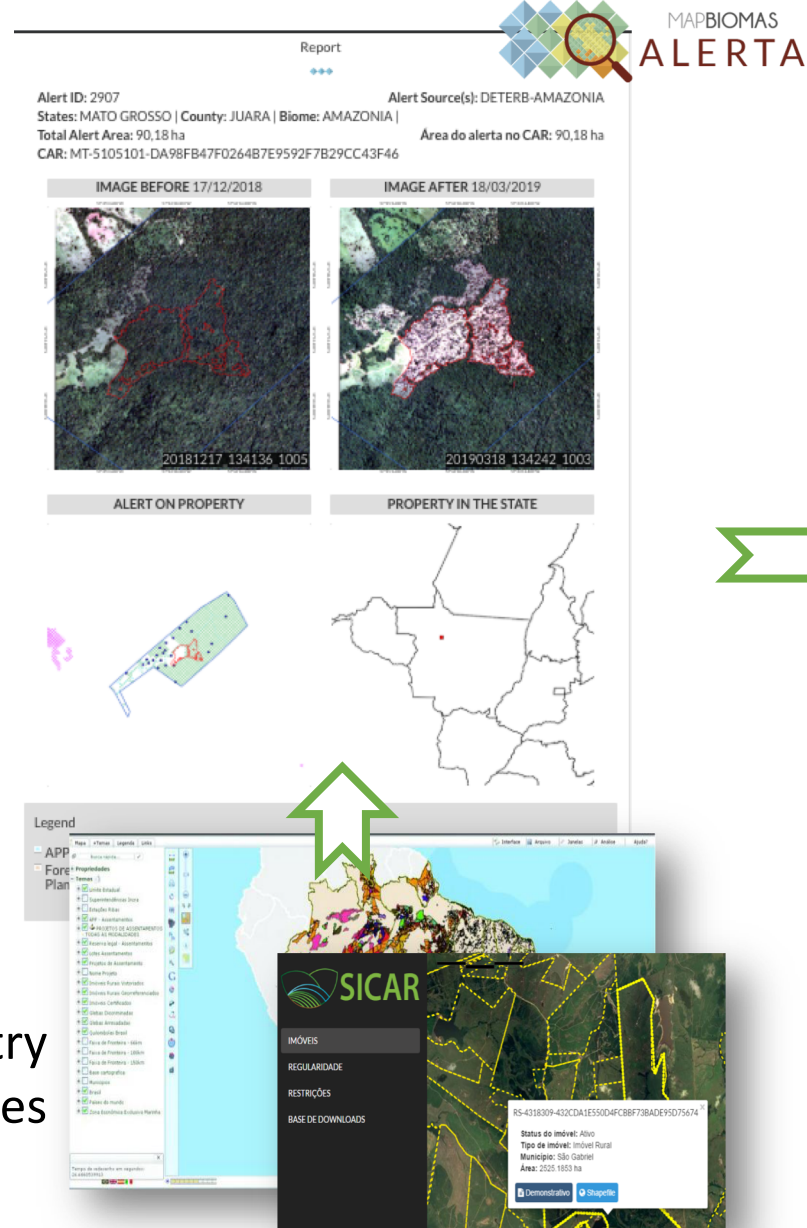


Law Enforcement Application

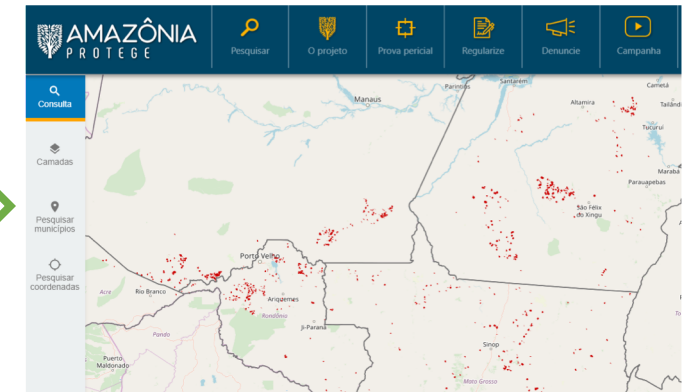
PRODES
DETER
SAD
GLAD



Land Registry
Databases



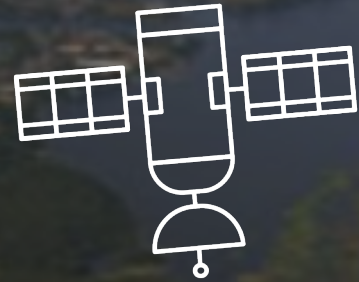
www.amazoniaprotege.mpf.mp.br



Law Enforcement



previsia



1. Monitoring



Sentinel 2



Microsoft Planetary Computer

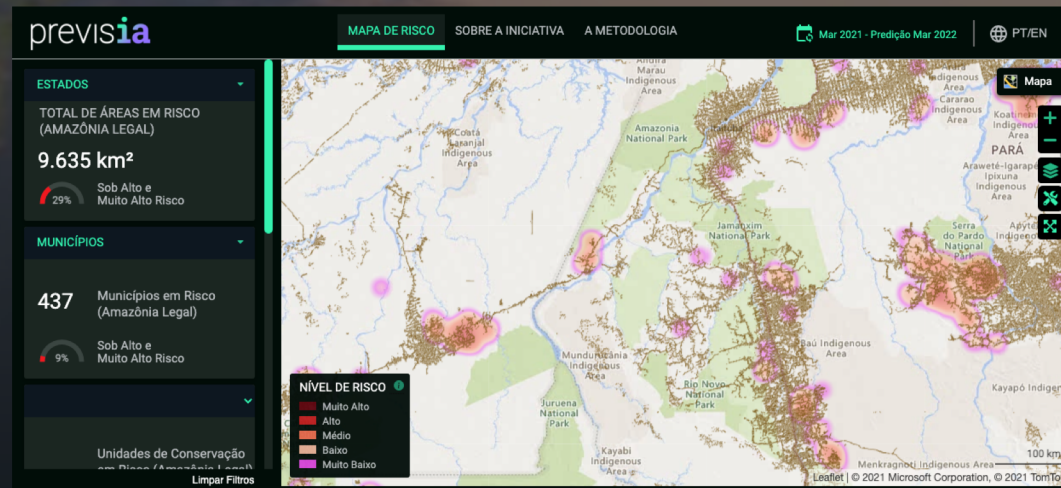


2. Technology



3. The Science of Prediction

- Geostatistics
- Spatial Modeling

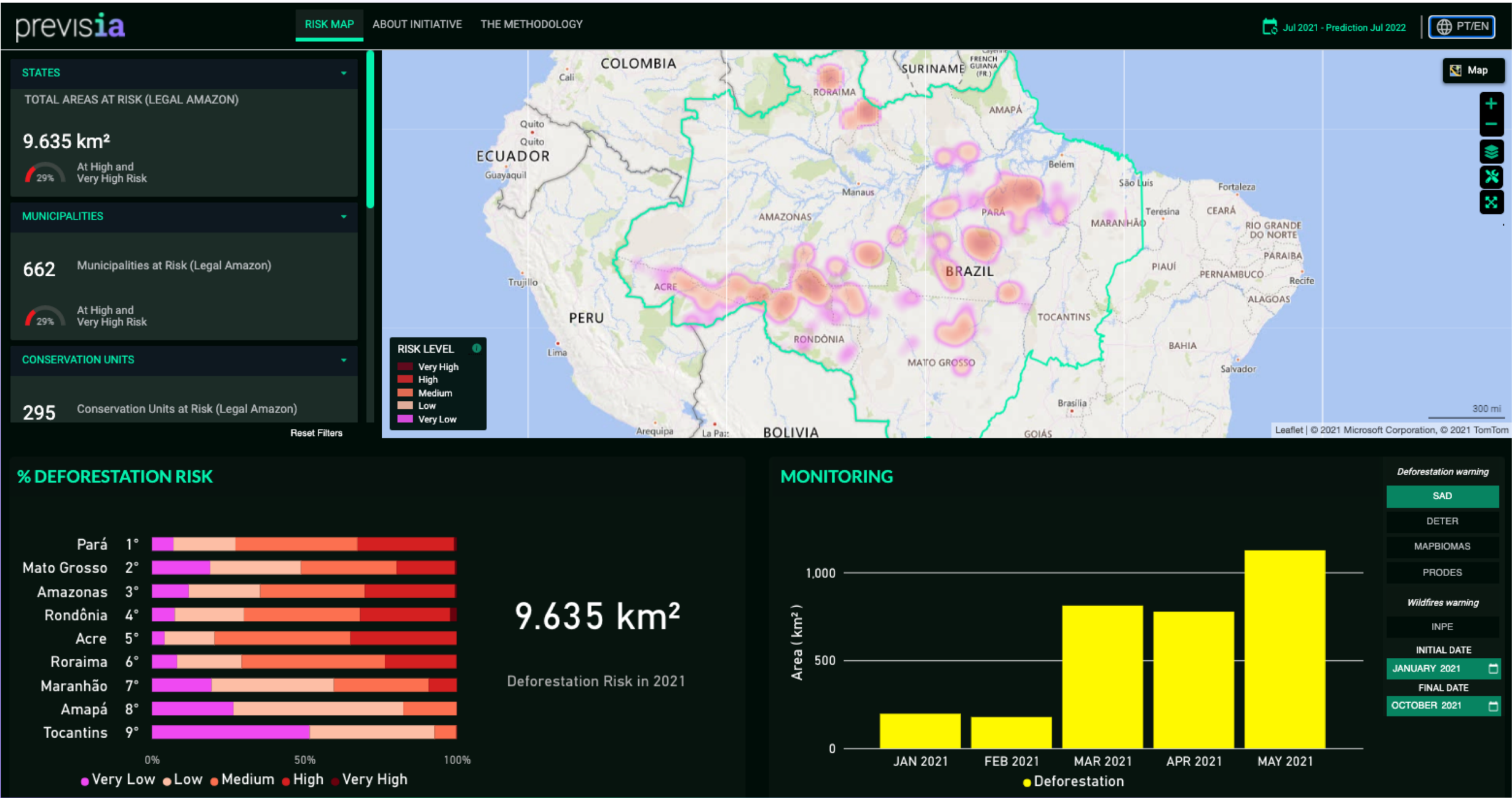


Powered by AI for Earth

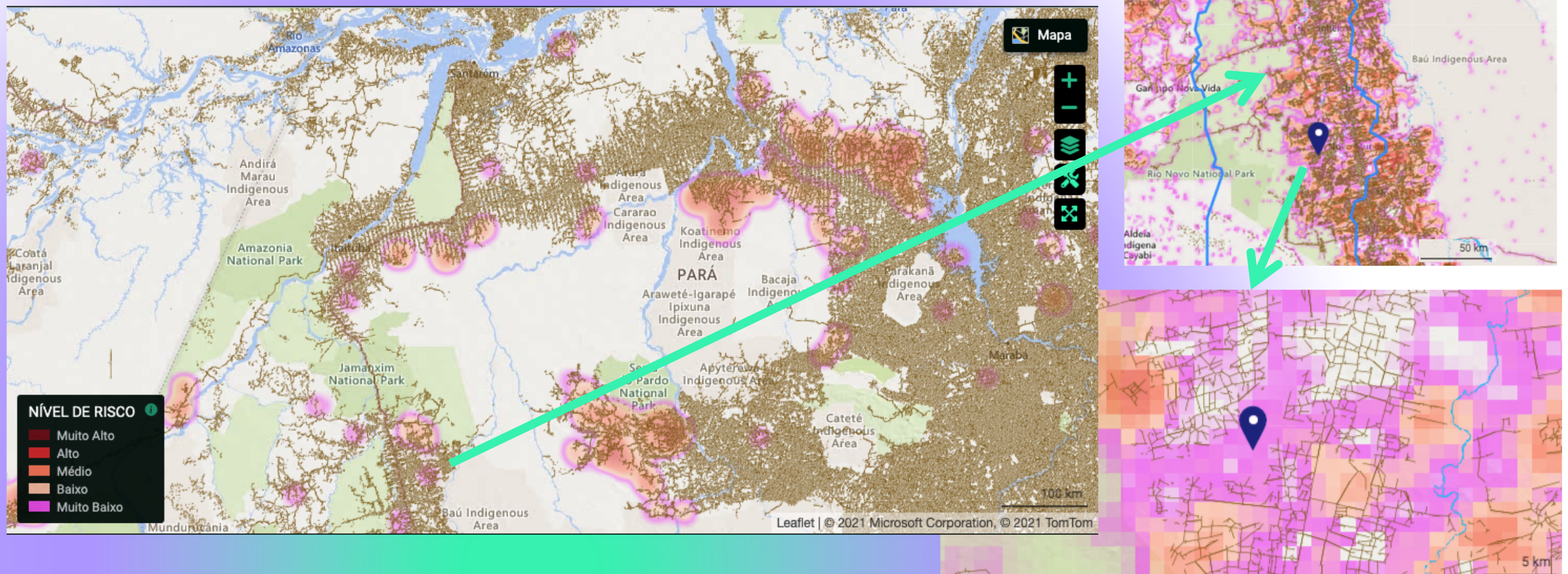
4. User Engagement

- Co-creating
- Actions to prevent
- Impact assessment



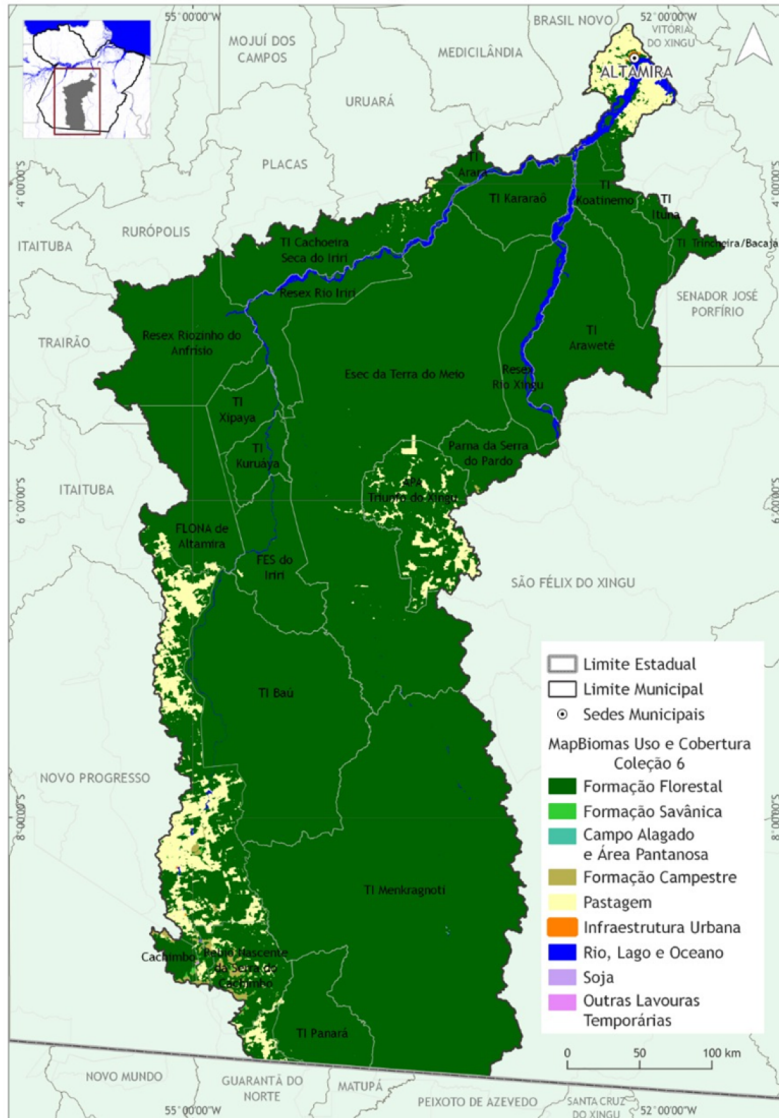


Roads are the most important vector of deforestation in the Amazon!

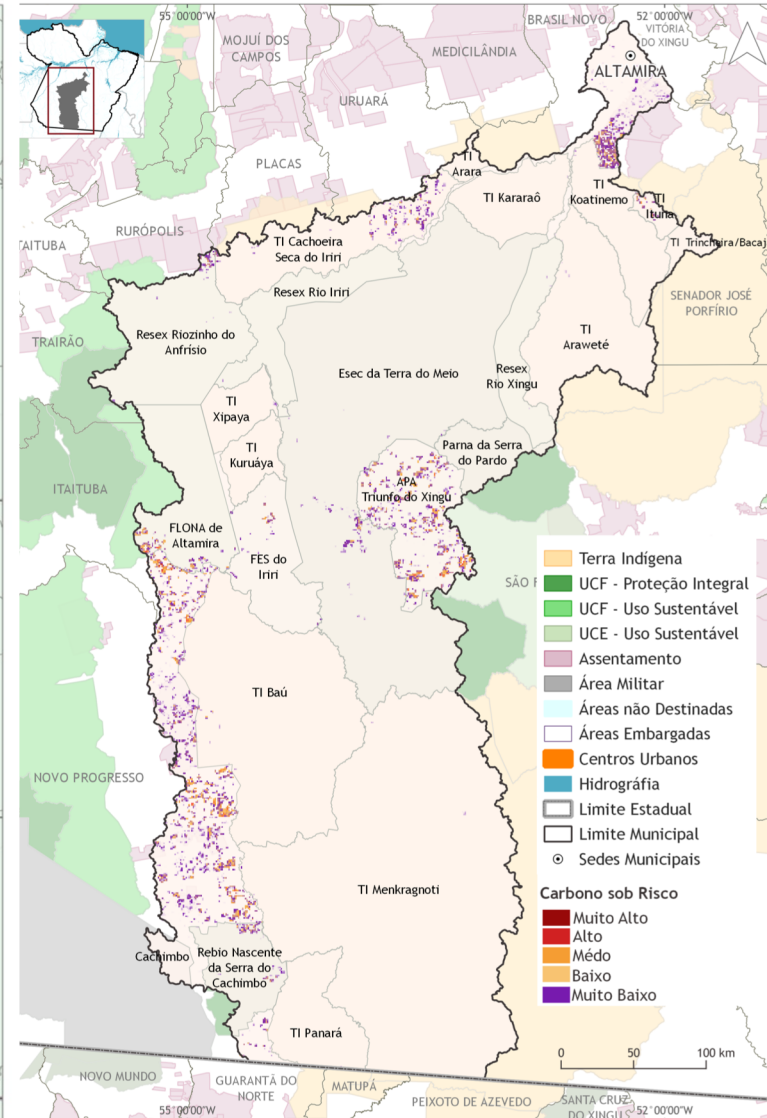


Preventing Deforestation at the Municipal Level

Forest Cover, MapBiomas



Deforestation Risk, PrevisIA



- Altamira, PA, Brazil is the third largest municipality in the world.

159.534 km²

- The municipality with the largest forest reserves!

91% of forest cover

- Most of the territory is legally protected!

48.6% Indigenous Lands

22.8% Conservation Unit

12.4% Sustainable Use

452,2 km²

under deforestation risk in 2022:

23 M tons of CO₂

of avoided emissions!

Challenges

1. *Effective use of geospatial information by government and private sector to implement environmentally sound policies.*
2. *Increase transparency and access to public information.*
3. *Use satellite data-derived information to enforce the law.*
4. *Implement an actionable preventive plan to avoid deforestation.*
5. *Unlock payment for environmental services.*

A hand is reaching up from the water, with fingers spread, against a sunset background. The water is calm, reflecting the light from the sky. The sky is a mix of orange, yellow, and blue, with some clouds visible in the distance.

Não é tarde para mudar. Ainda.

It is not too late to change. Yet.

No es demasiado tarde para cambiar. Todavía.