CARBON DECISIONS INTERNATIONAL

Technical Workshop
on National Reference Levels
World Bank, Washington DC
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# Piloting national-subnational relationship on RLs in Peru and Guatemala

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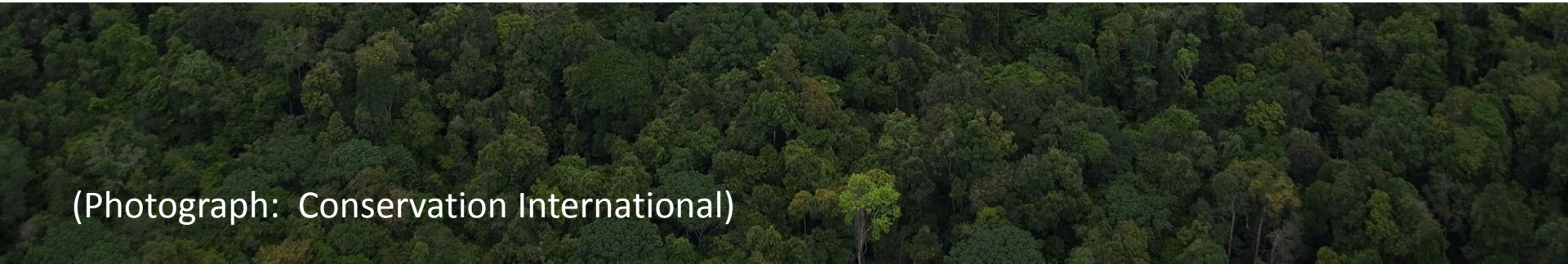
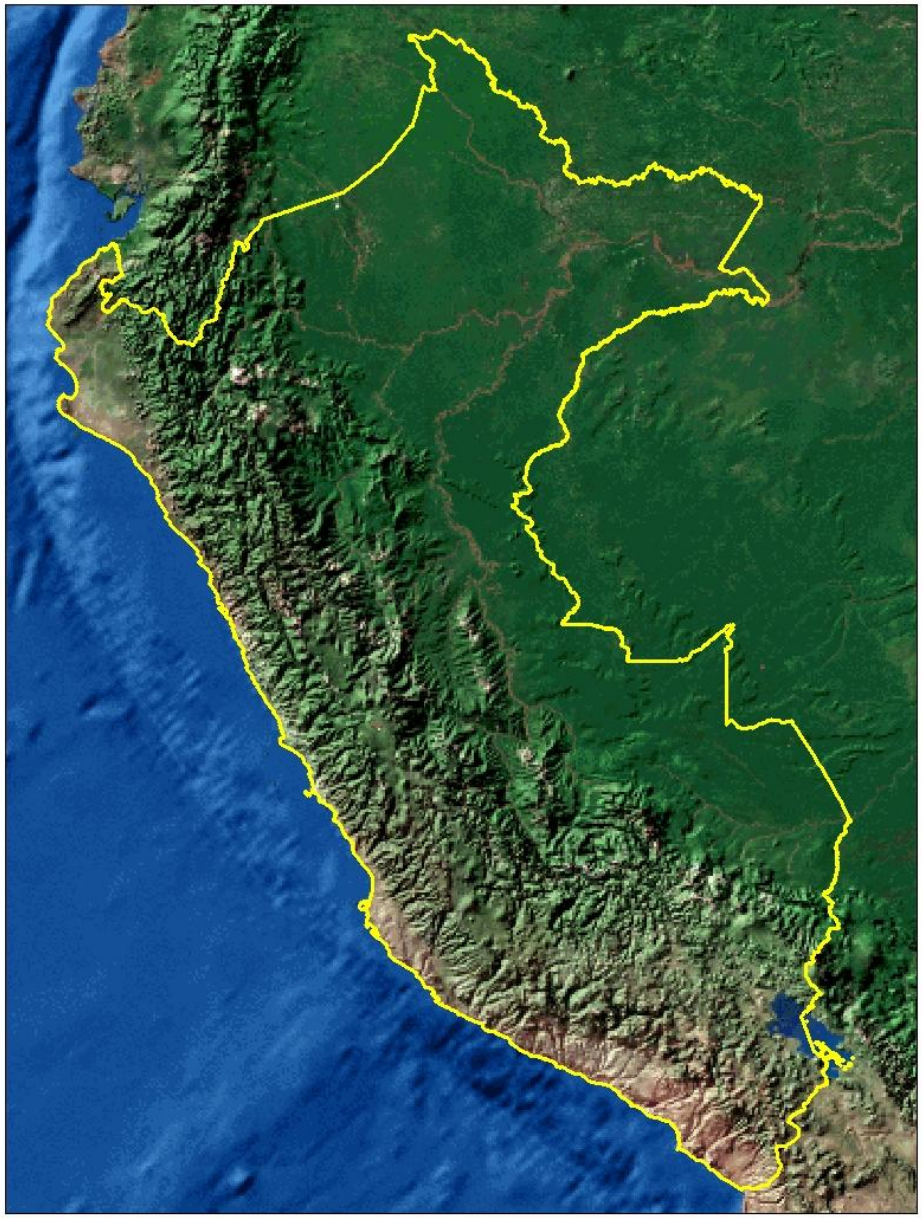


(Photograph: Conservation International)

# Peru

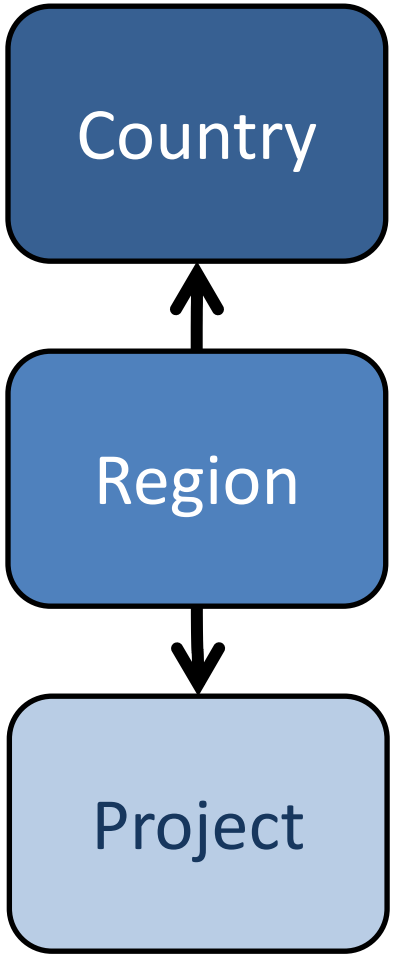


- Diverse country (deserts, dry forest, rainforest, mountain forest, paramo…).
- ~68 Mha of forests.
- Ranks 4$^{th}$ among tropical countries with more forest.

# Peru

- Ongoing decentralization.
- Reference levels are being established at the sub-national level:
  - Madre de Dios (8.52 Mha)
  - San Martin (5.16 Mha)
  - Selva Central (10.36 Mha)
  - Cusco (6.60 Mha)
- Roughly 1/3 of the forested area is being covered.
- 100% civil society funded.
- Governments participate and learn.
- More than 40 REDD projects in preparation.

# Nested Approach in Peru




The national reference emission level (REL) will be calculated as the sum of regional reference emission levels.

The “Region” is the scale at which reference emission levels are established. What is a “region” is tbd by the country.

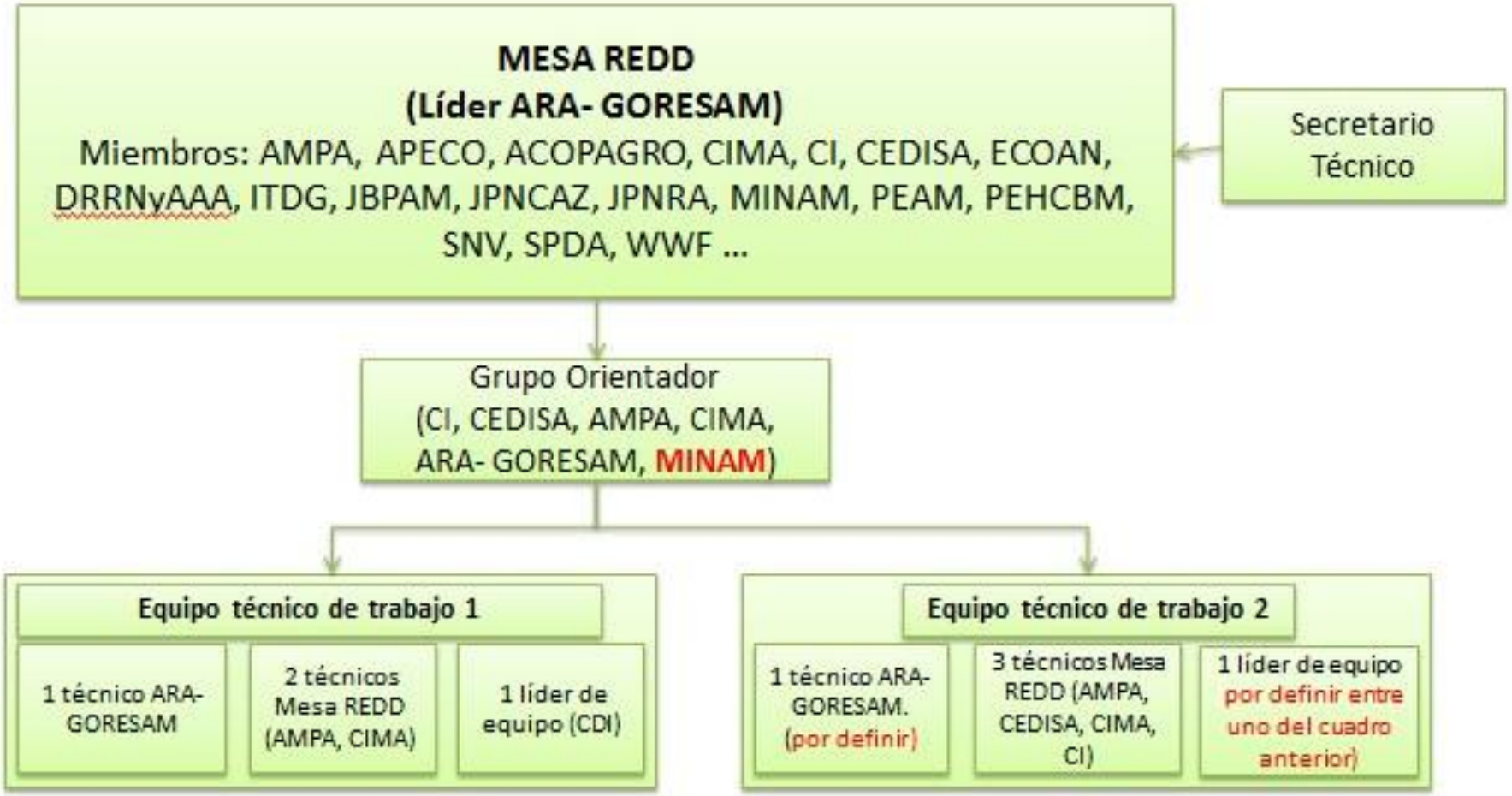
At the local level (or project level) RELs are derived directly from the regional REL (“cookie cut” method)

# Peru

Governance of the readiness process:

- Central Government
- National Civil Society REDD+ Round Table
- Regional REDD+ round tables:
  - Cusco
  - Loreto
  - Madre de Dios
  - Piura
  - San Martin
  - Ucayali
  - …

# REDD+ Round Table of San Martín

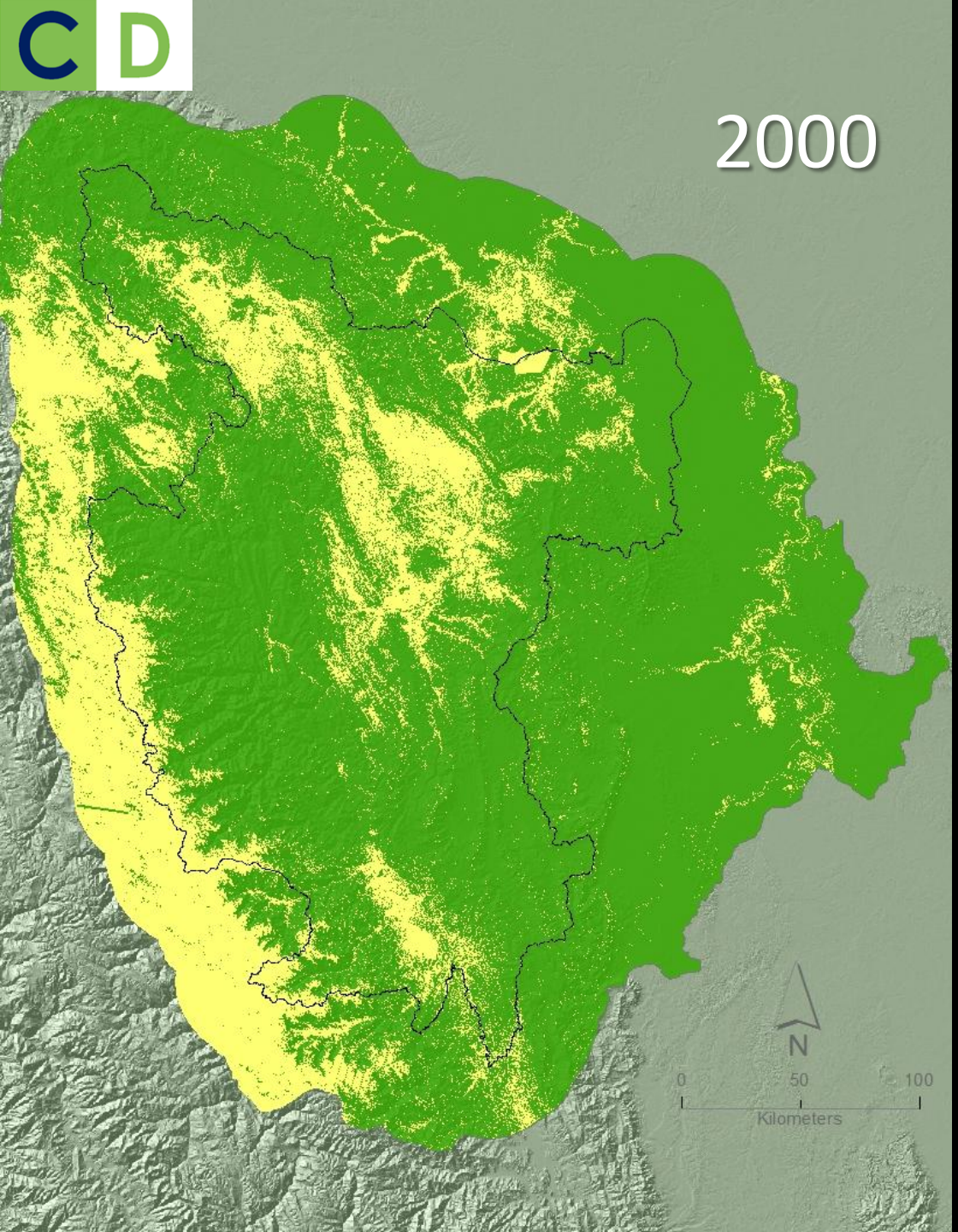



Working Group 1: Reference Levels

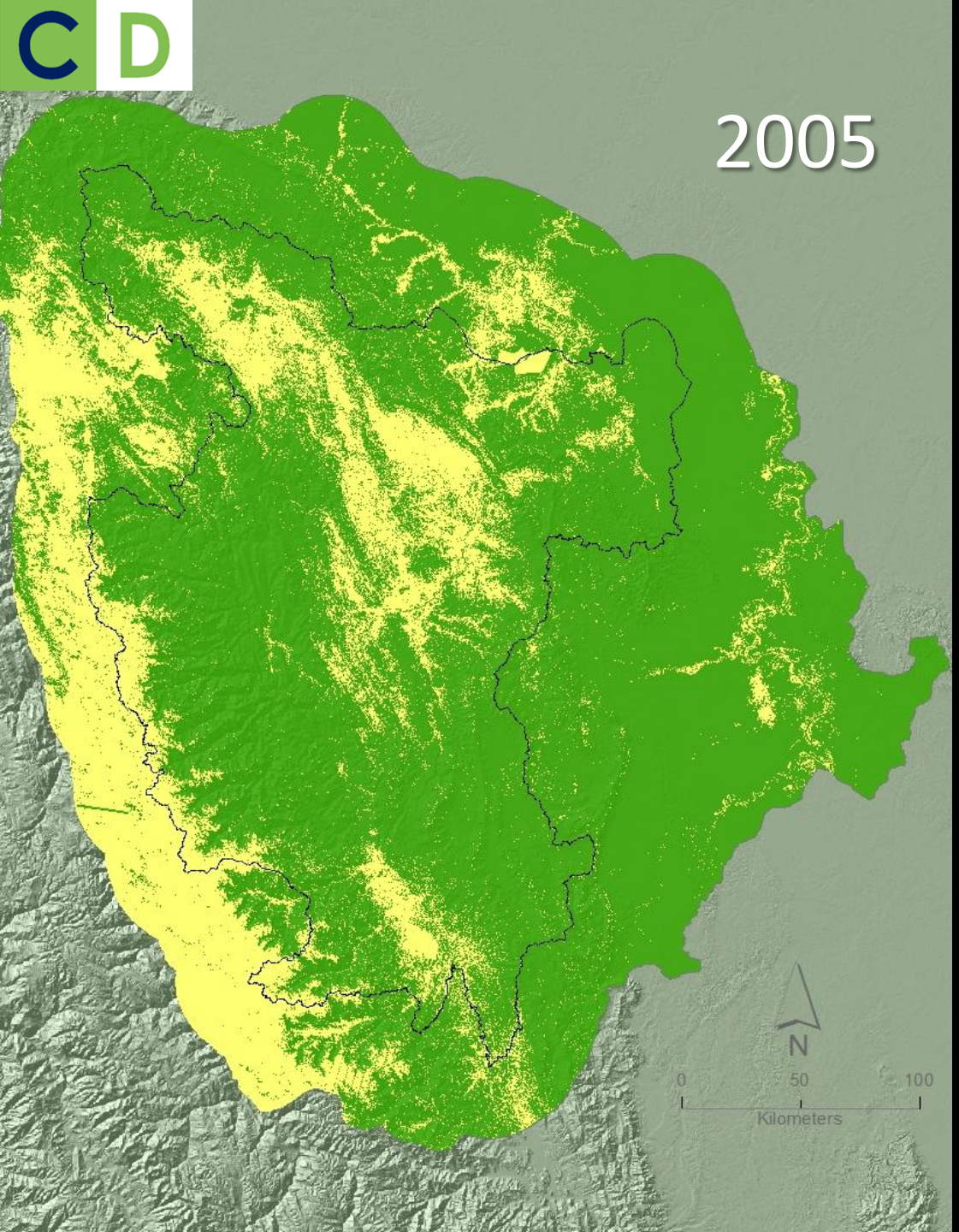
Working Group 2: Community Aspects

# Development of the reference emission level

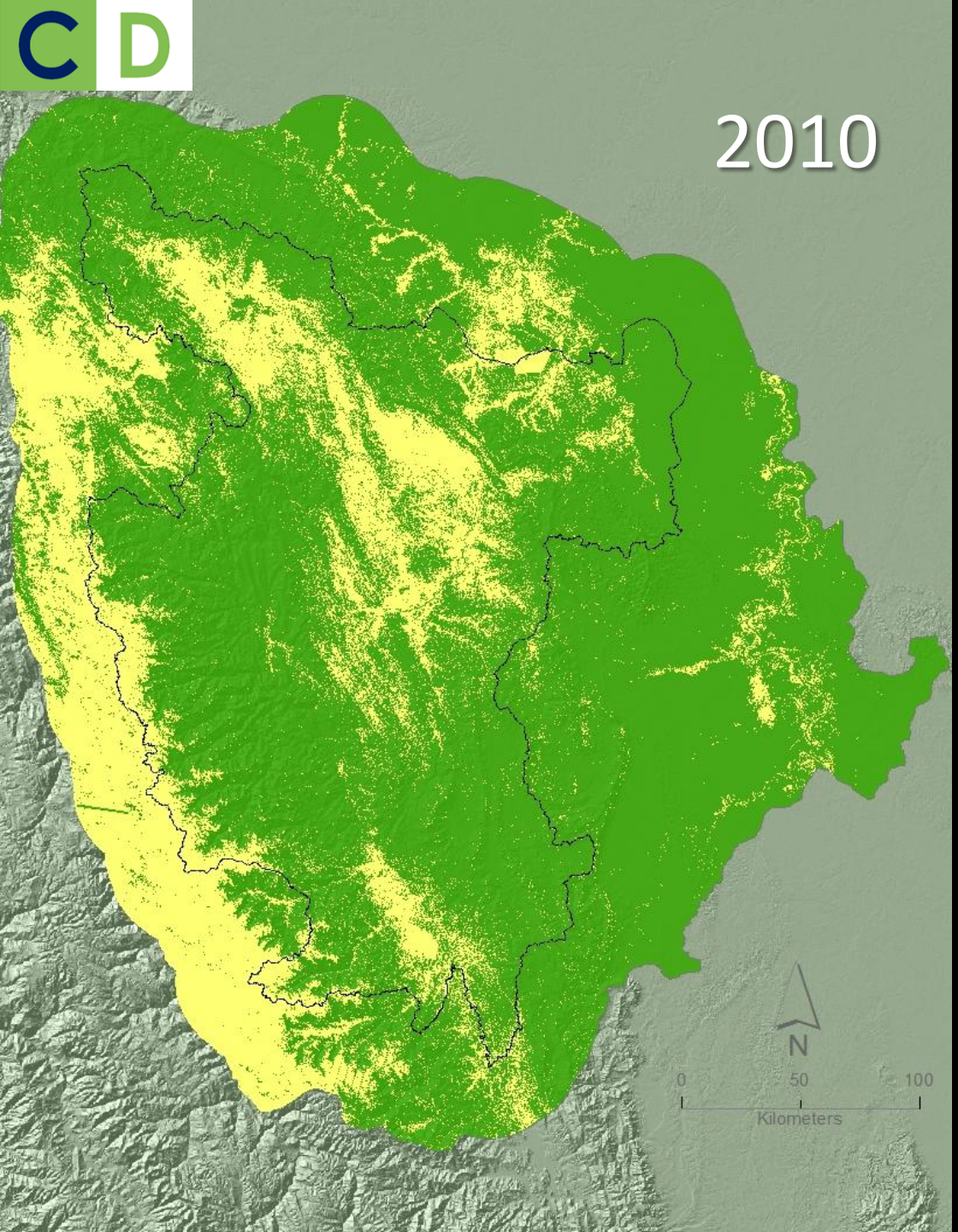
1. Analysis of historical deforestation
2. Participative and literature-based analysis of agents and drivers of deforestation
3. Estimation of Emission Factors
   - Carbon stocks in forests
   - Carbon stocks in post-deforestation land uses
4. Projection of Activity Data:
   - Stratified projection of the rate
   - Location modeling



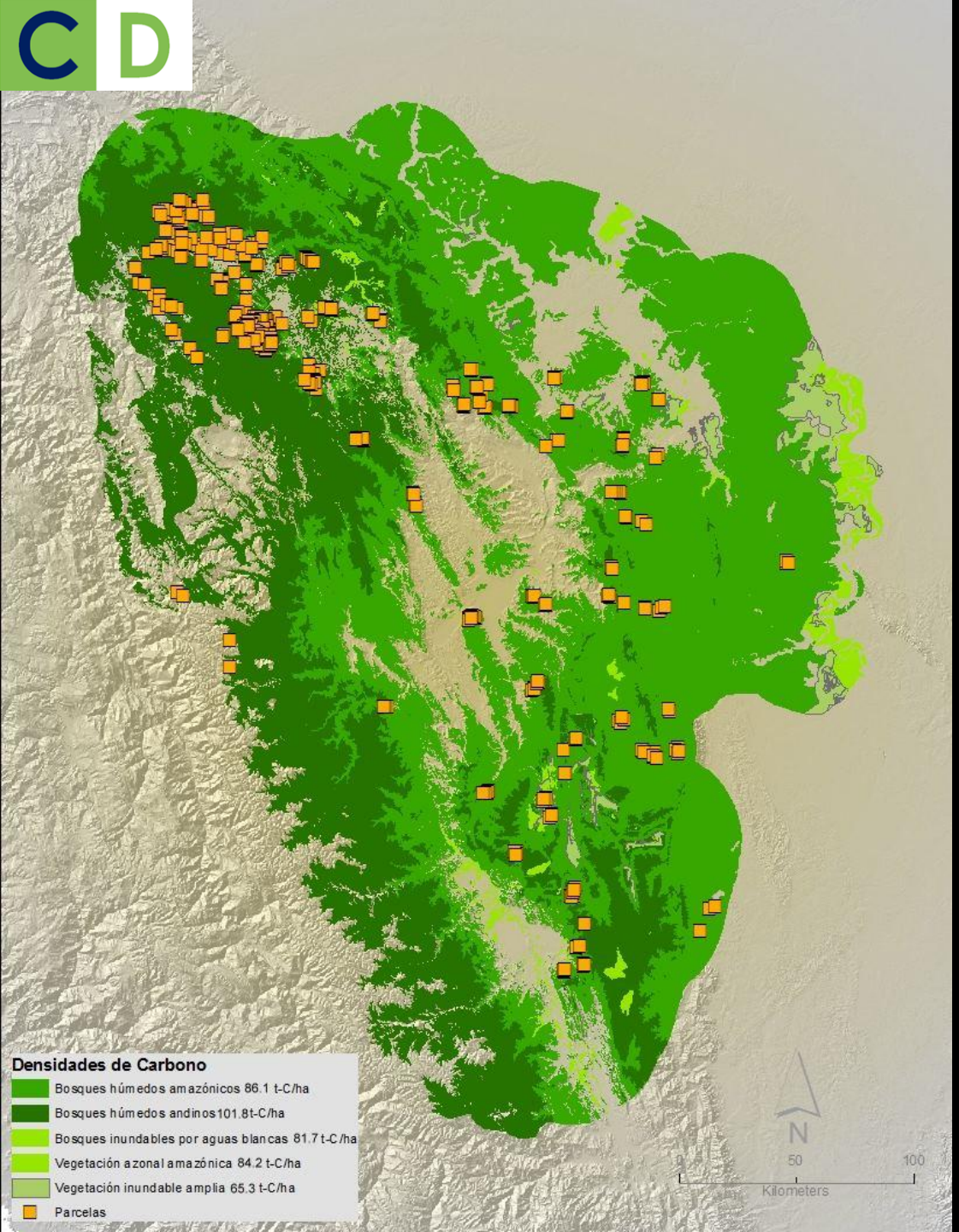

# Historical deforestation




# Historical deforestation

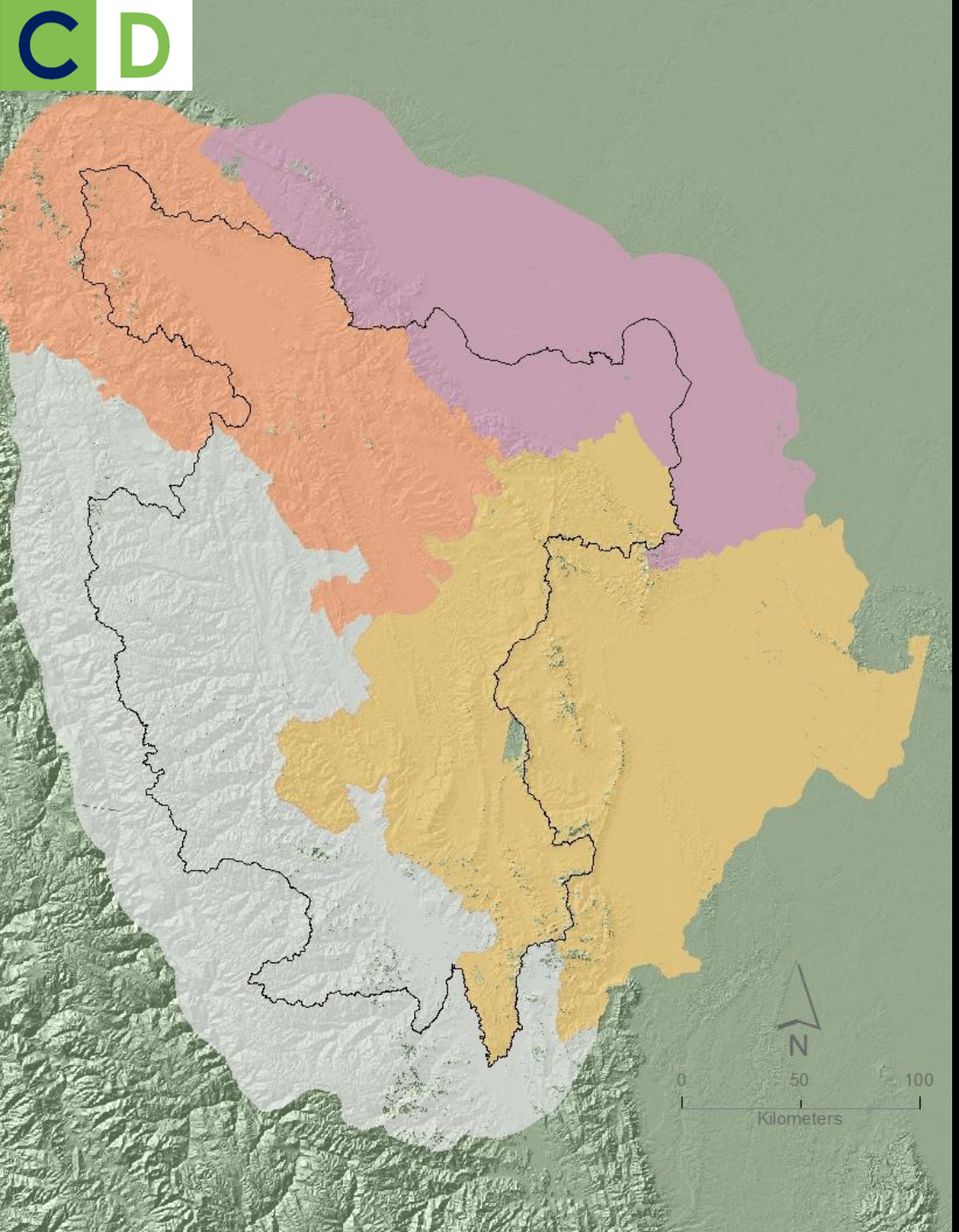



# Historical deforestation




# Carbon stocks

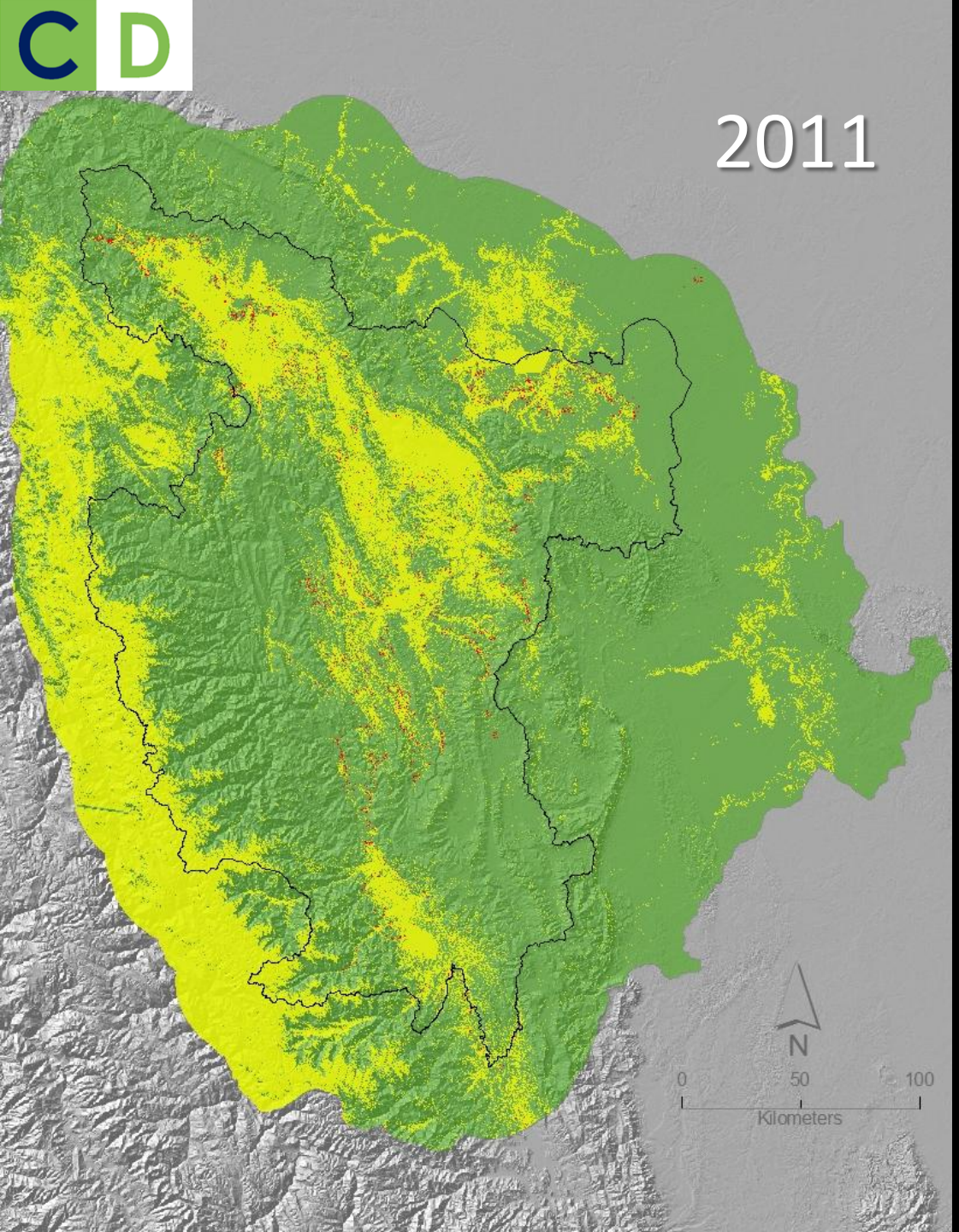
- 466 existing plots
- 433 passed screening
- Carbon stock densities ($CO_2$-e/ha):
  - 267.2 ± 11.0
  - 317.0 ± 12.8
  - 253.3 ± 53.5
  - 261.4 ± 96.4
  - 201.8 ± 78.7



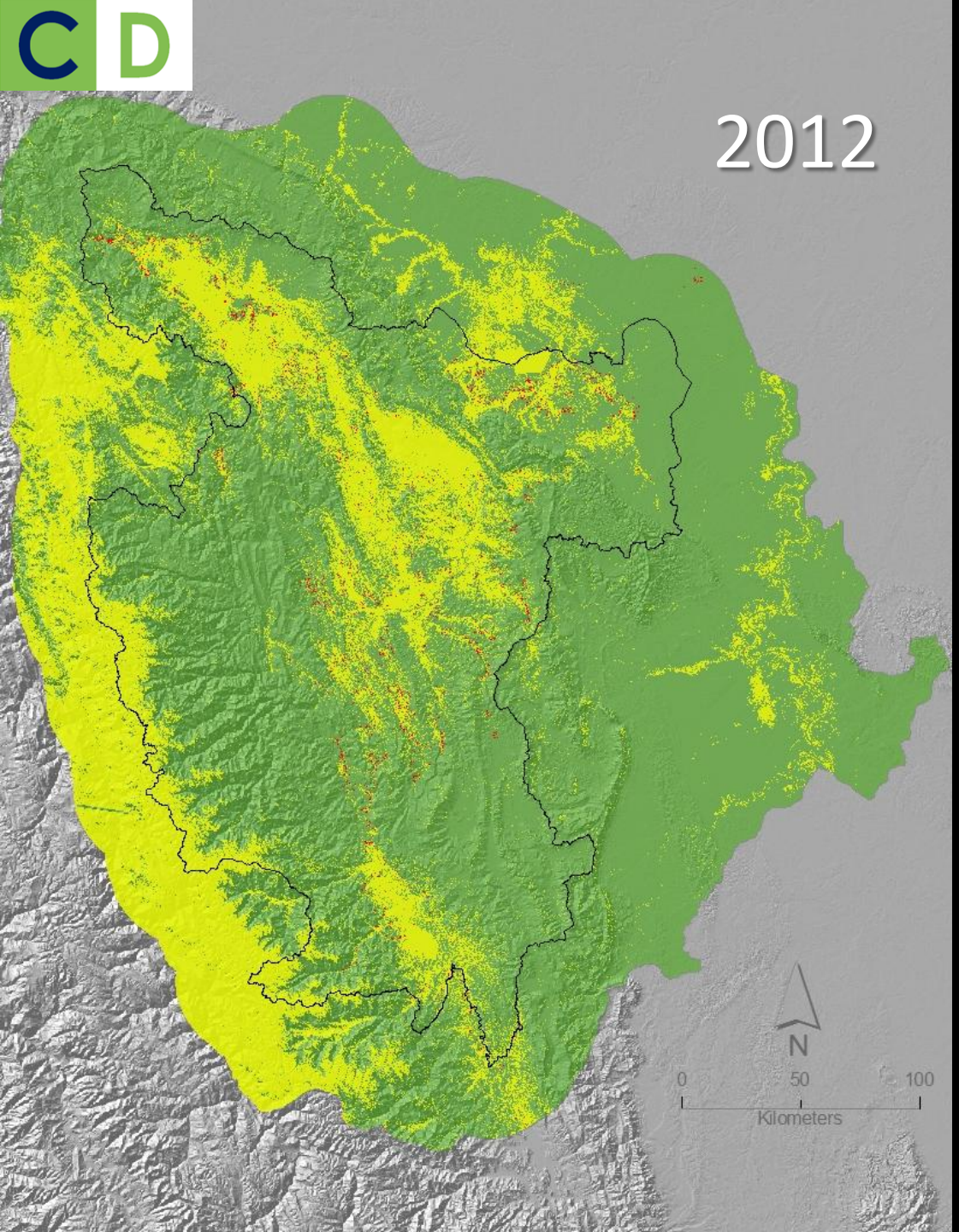

Stratification for projecting the rate.

Factor maps for projecting the location:

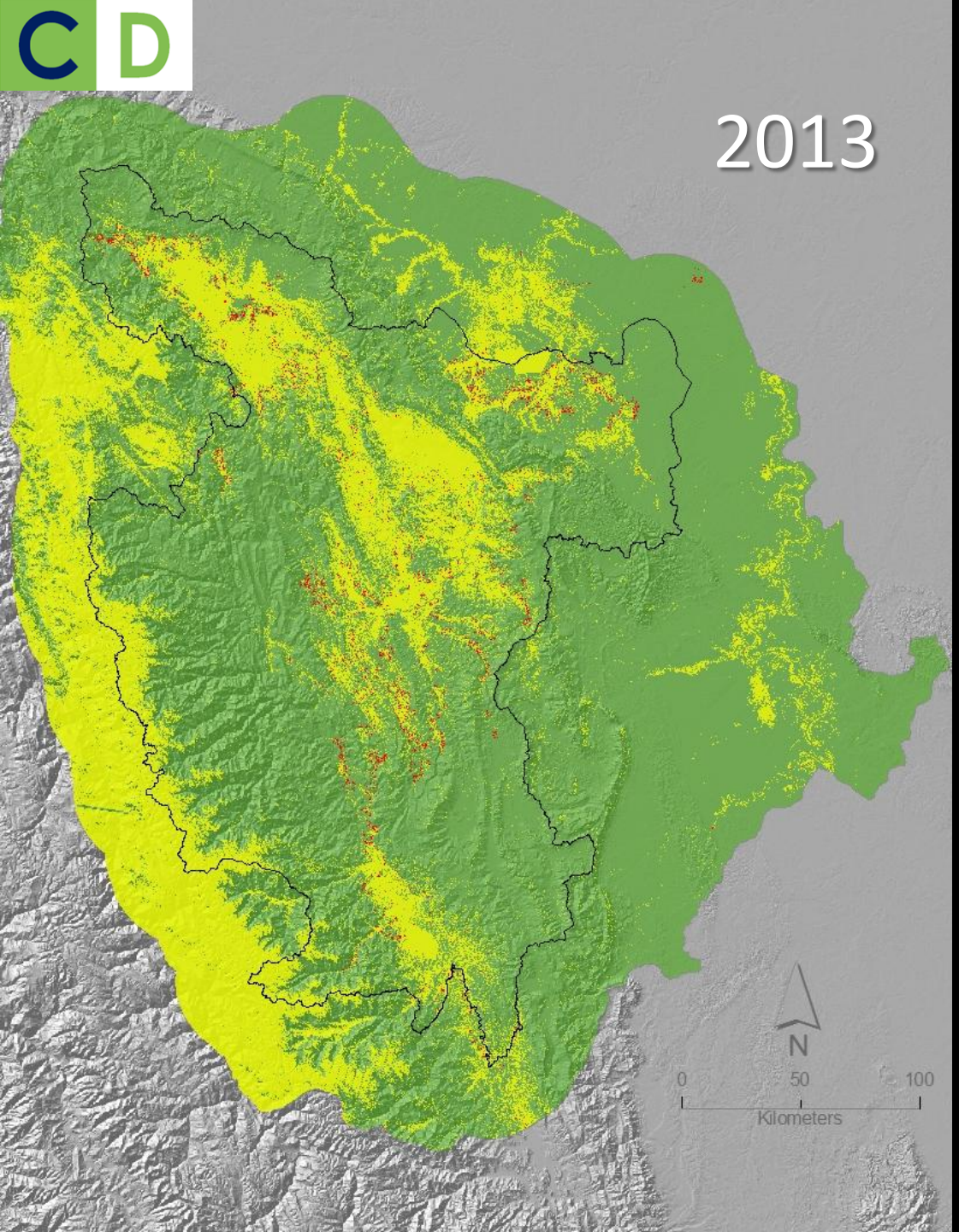
- Distance to roads
- Elevation
- Slope
- Distance to settlements
- etc.




# Deforestation projection for San Martin




# Deforestation projection for San Martin

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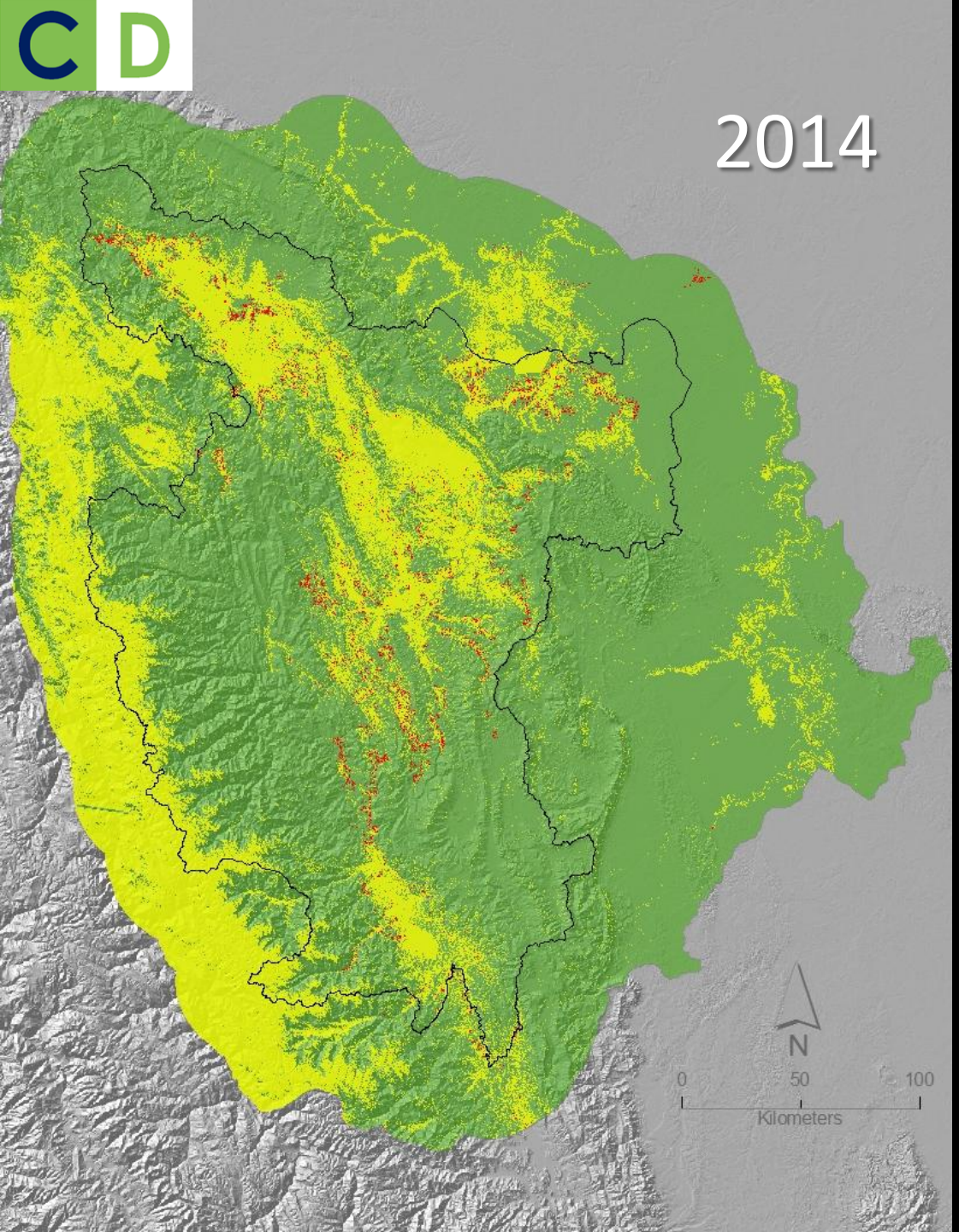


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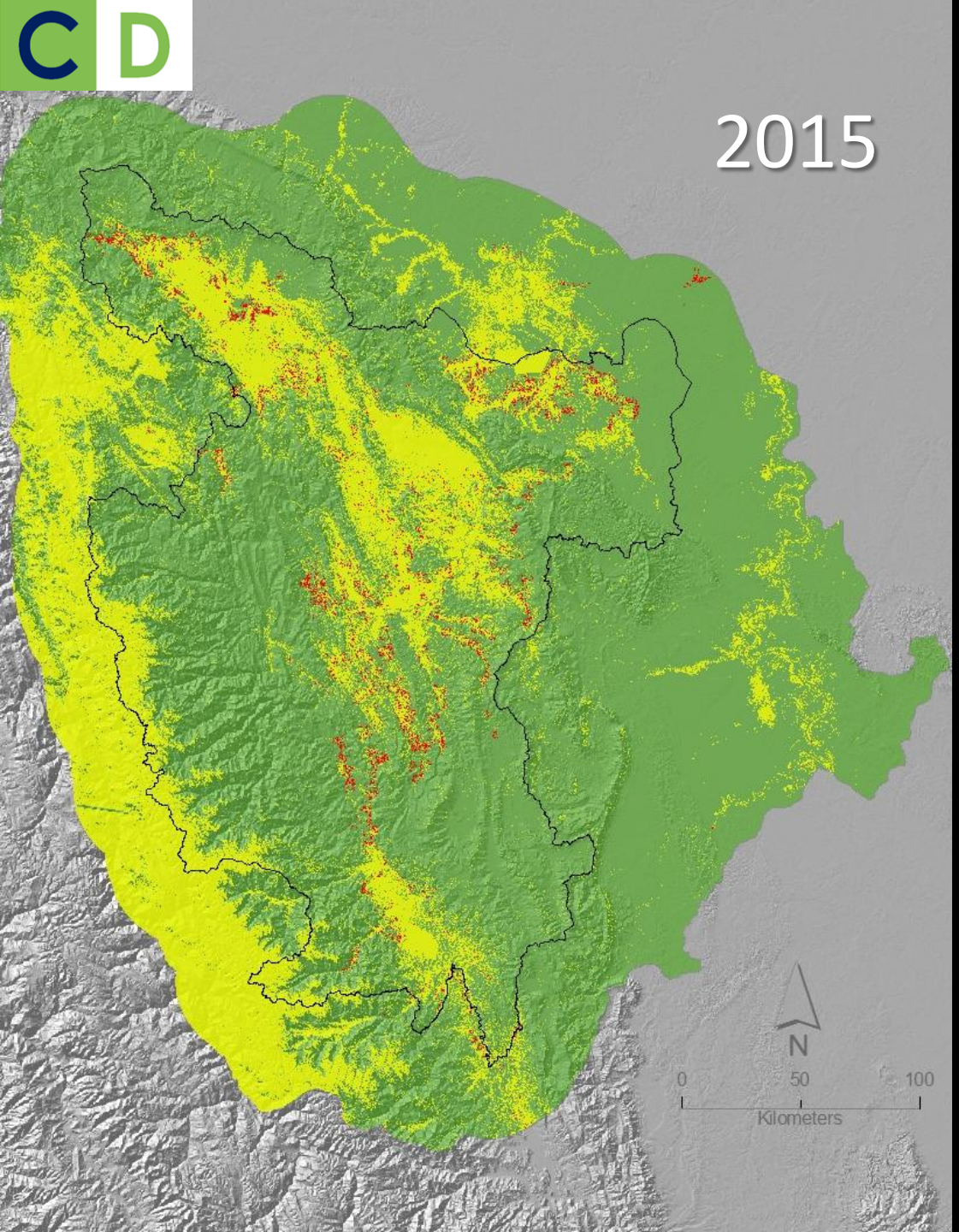


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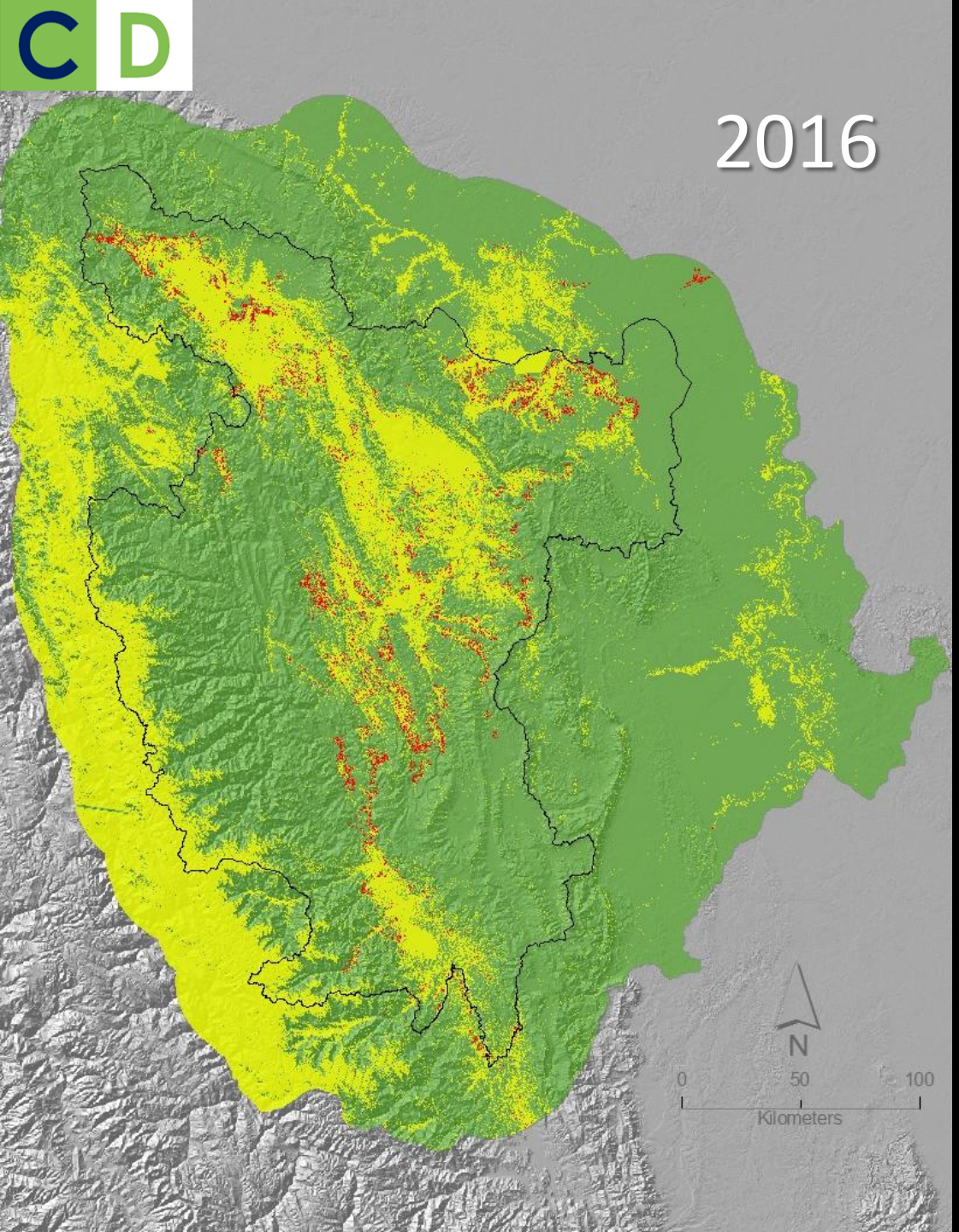


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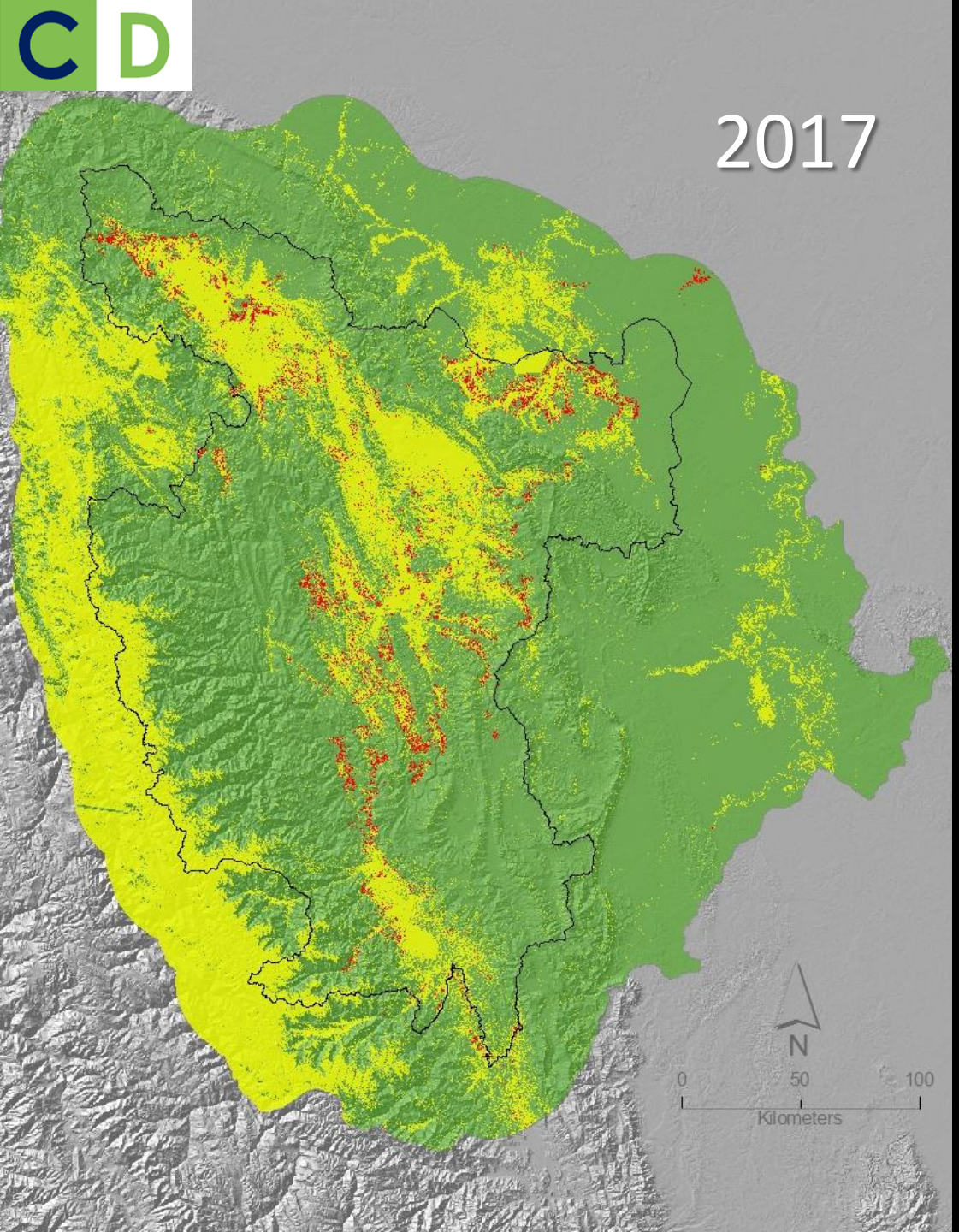


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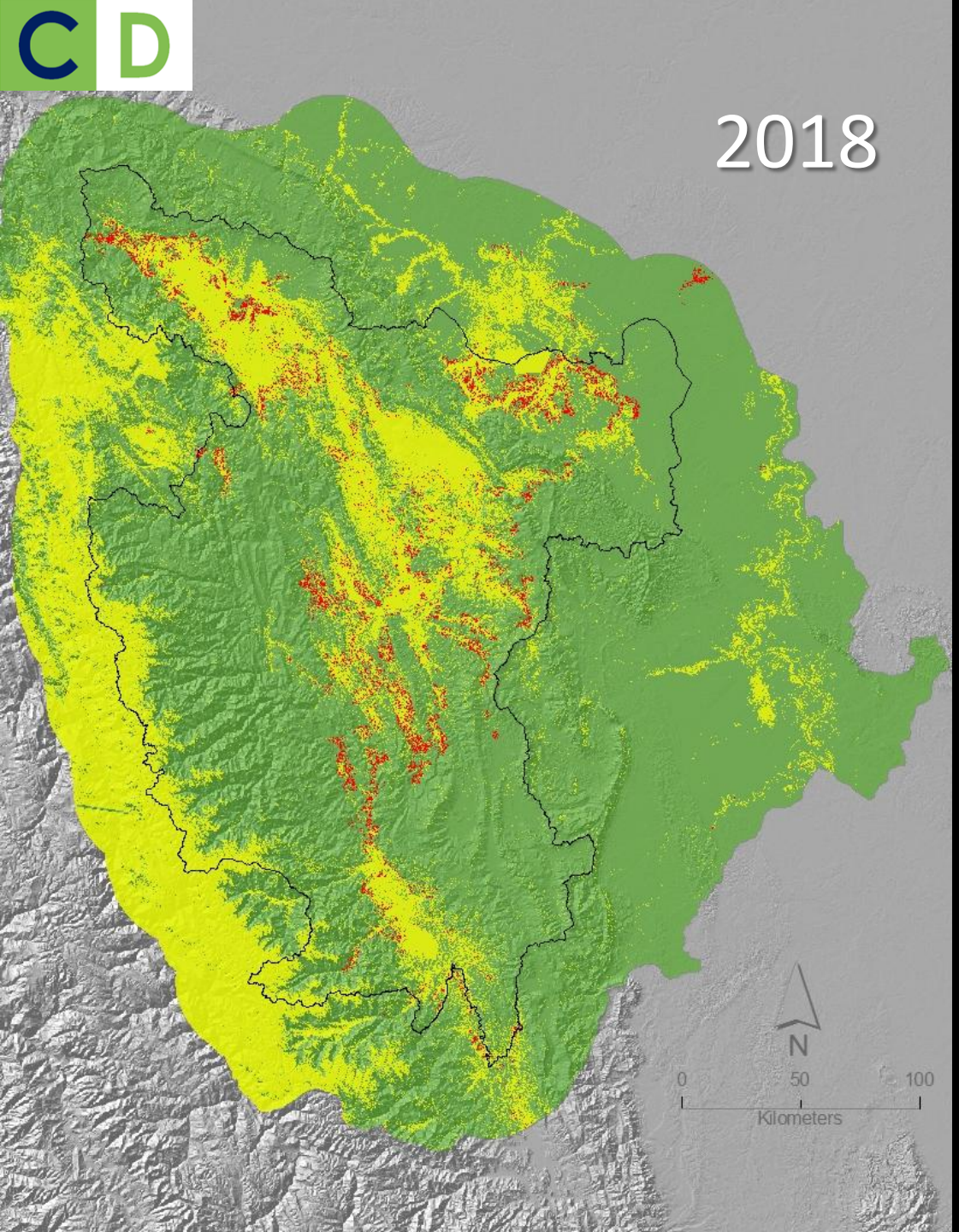


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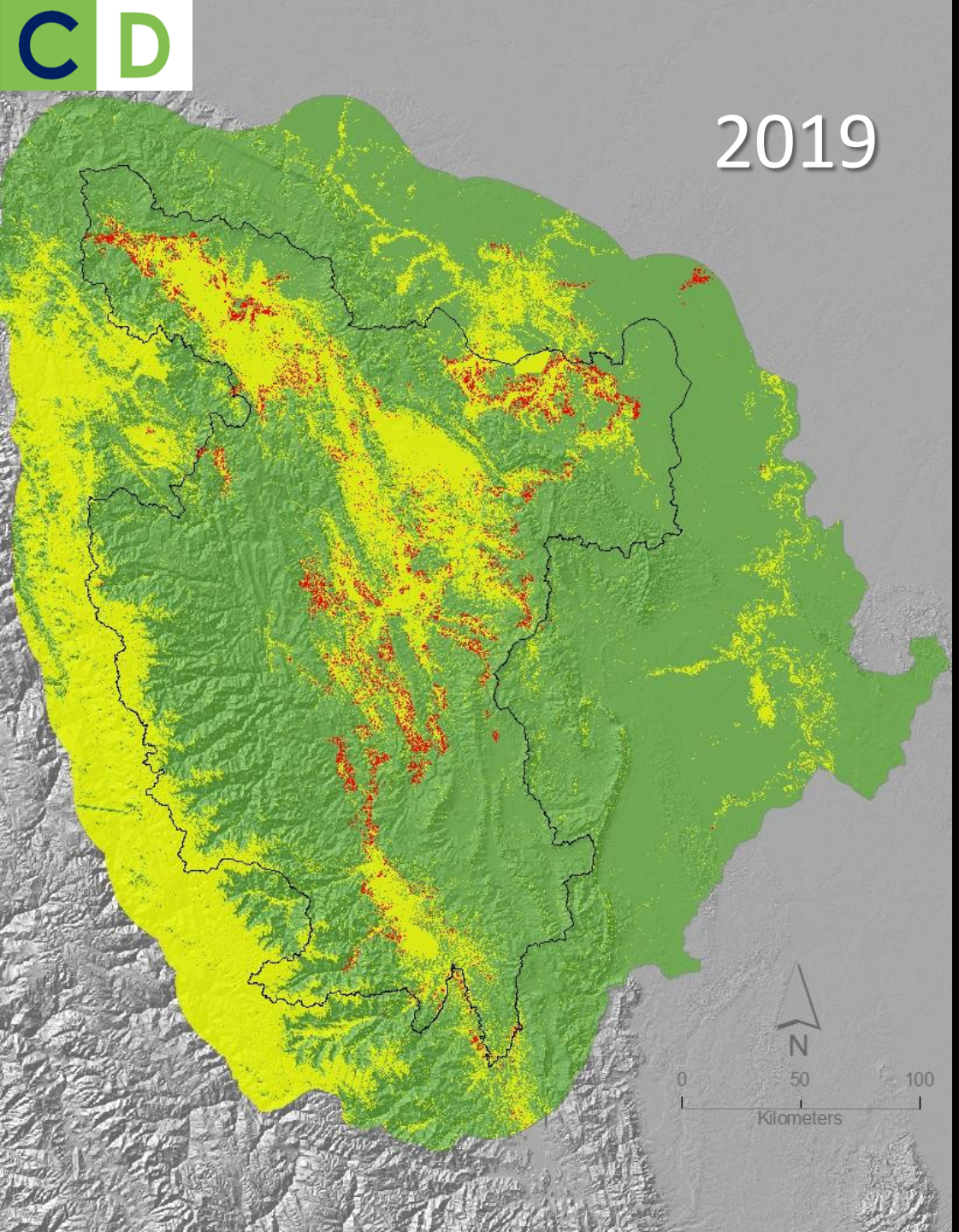


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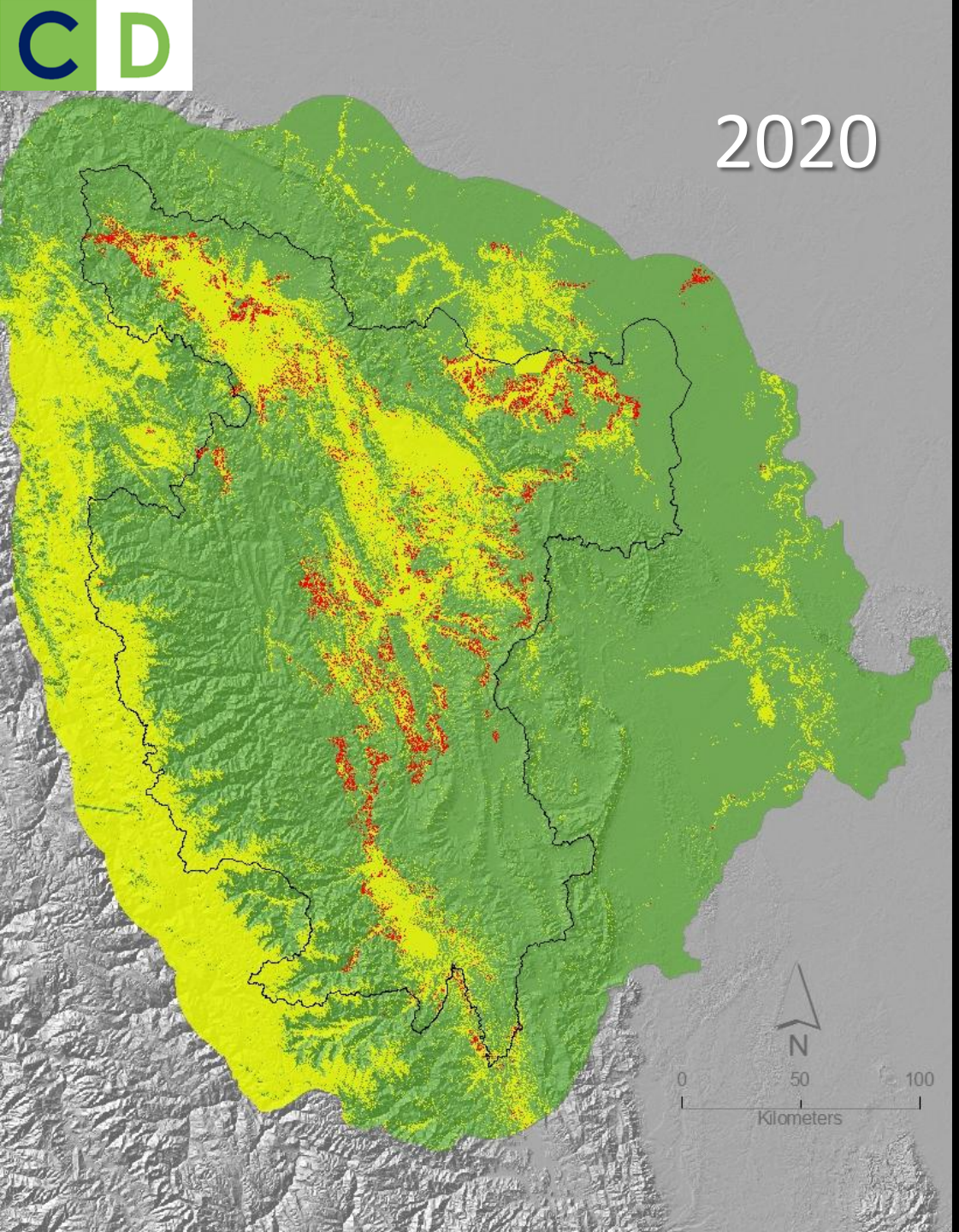


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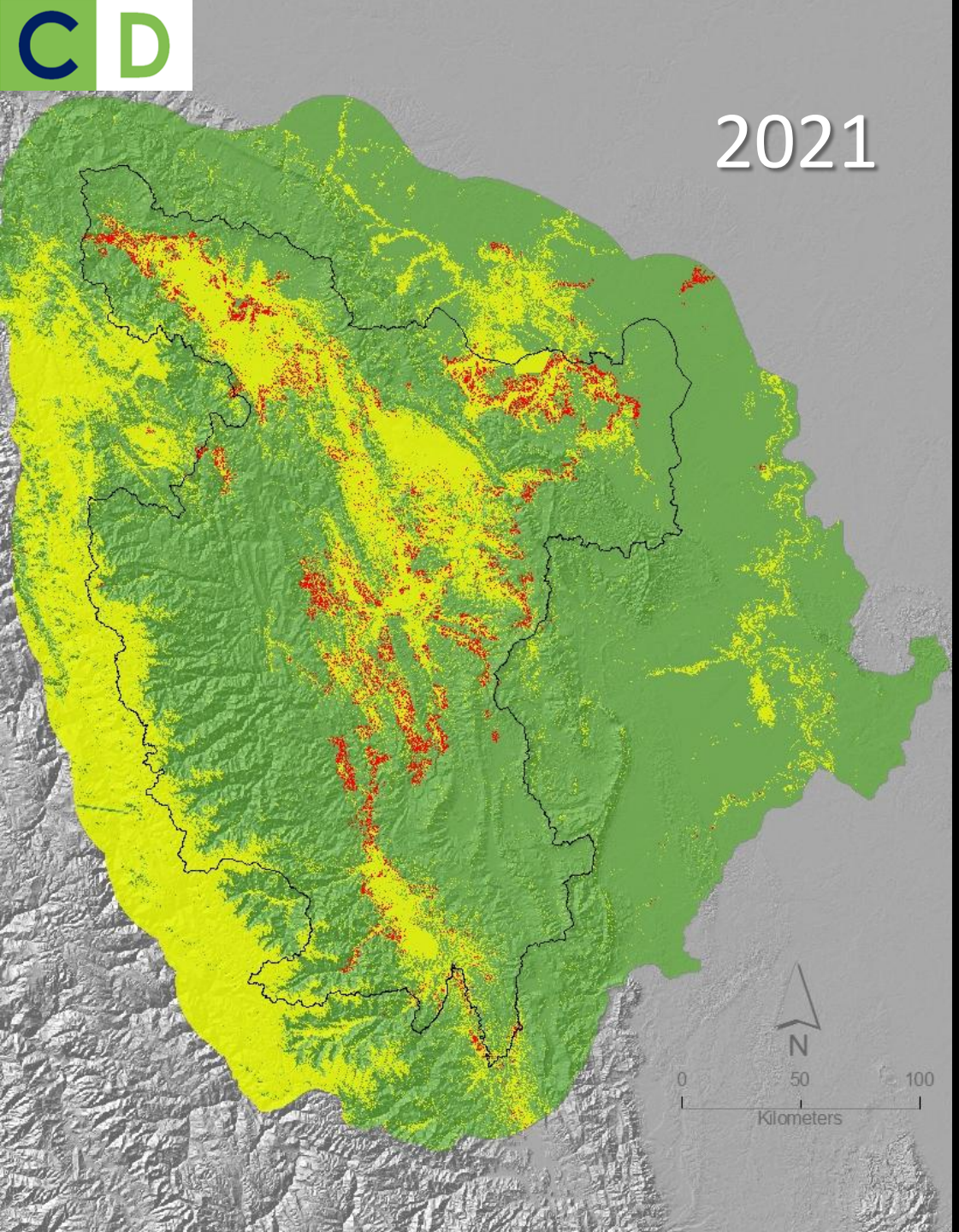


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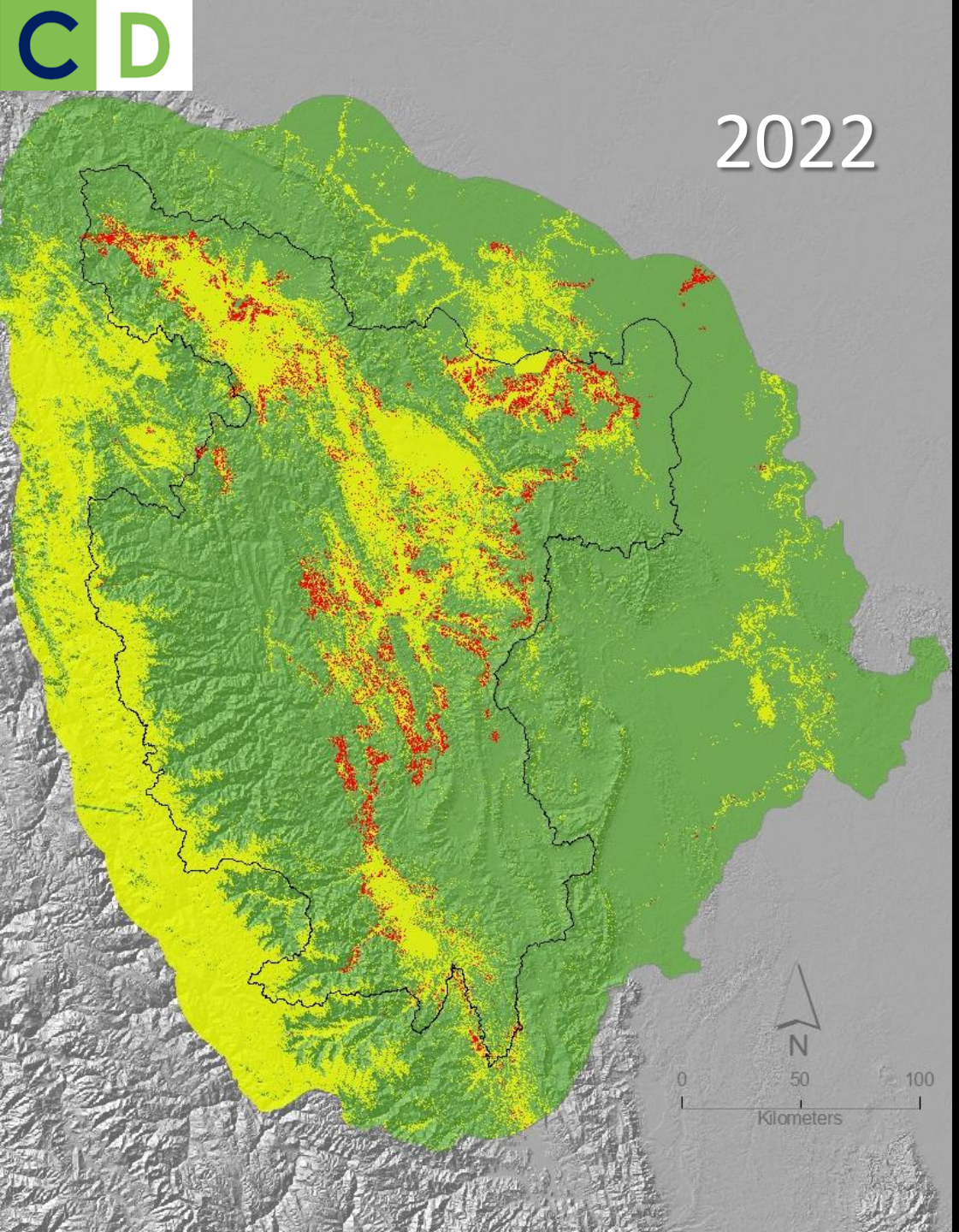


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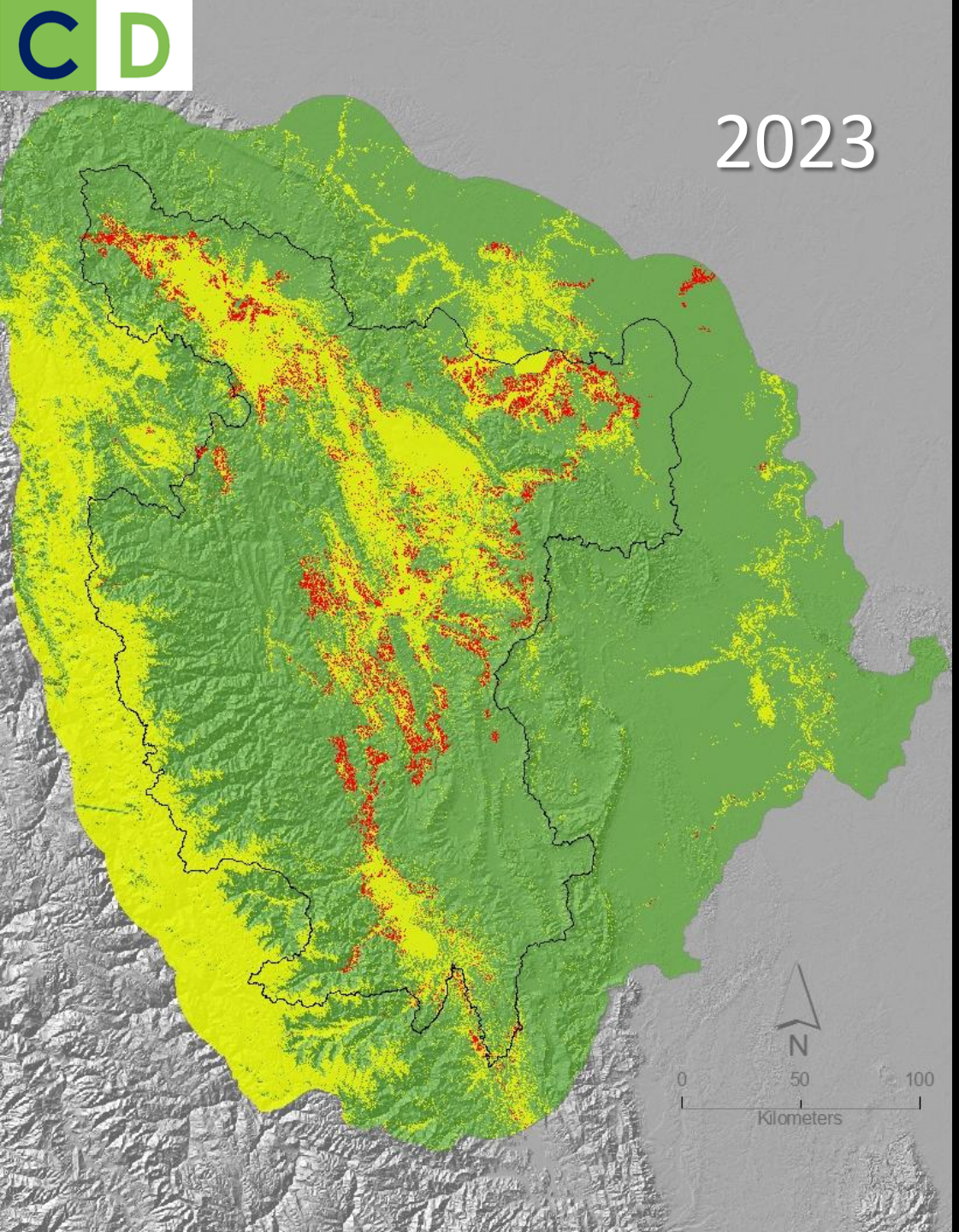


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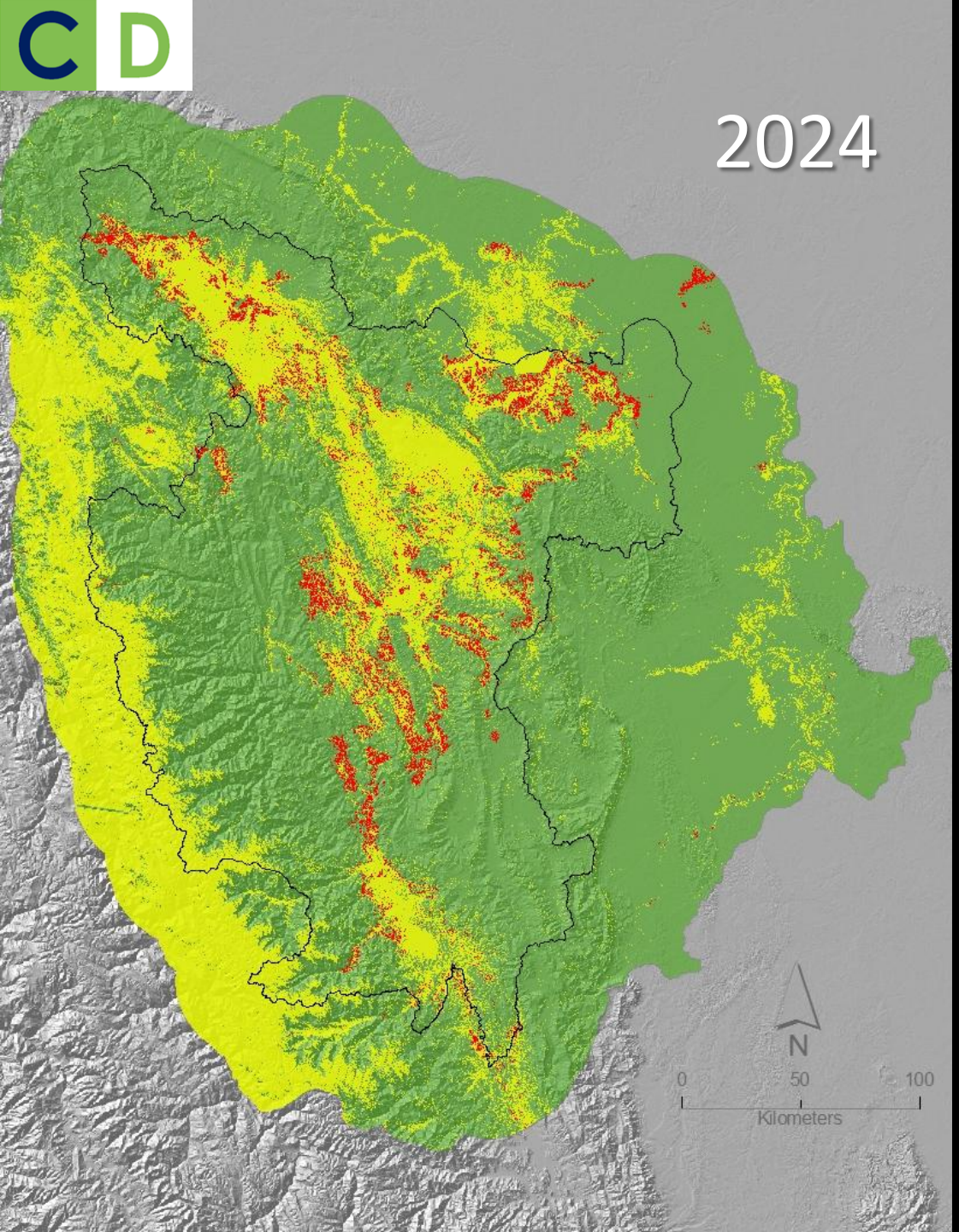


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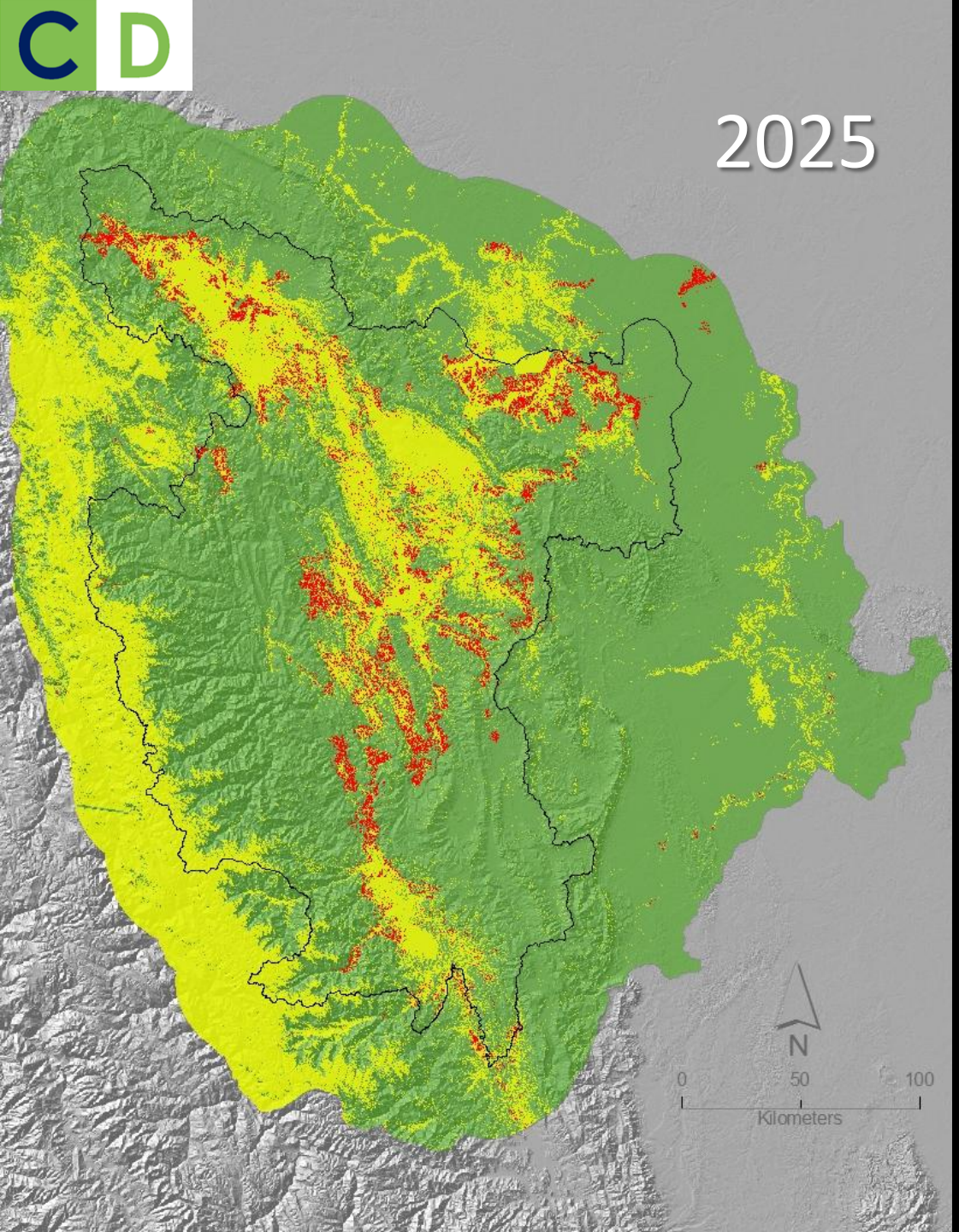


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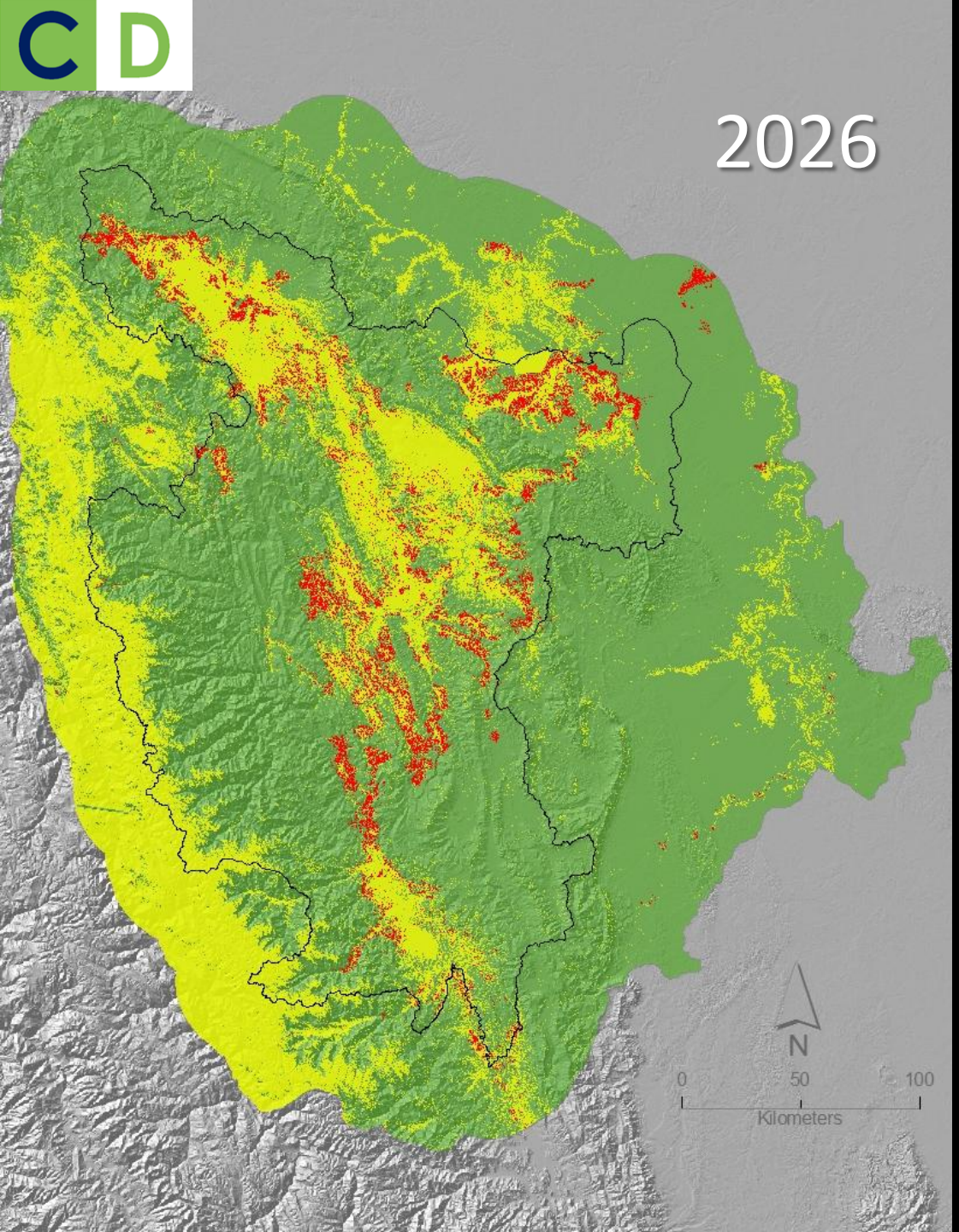


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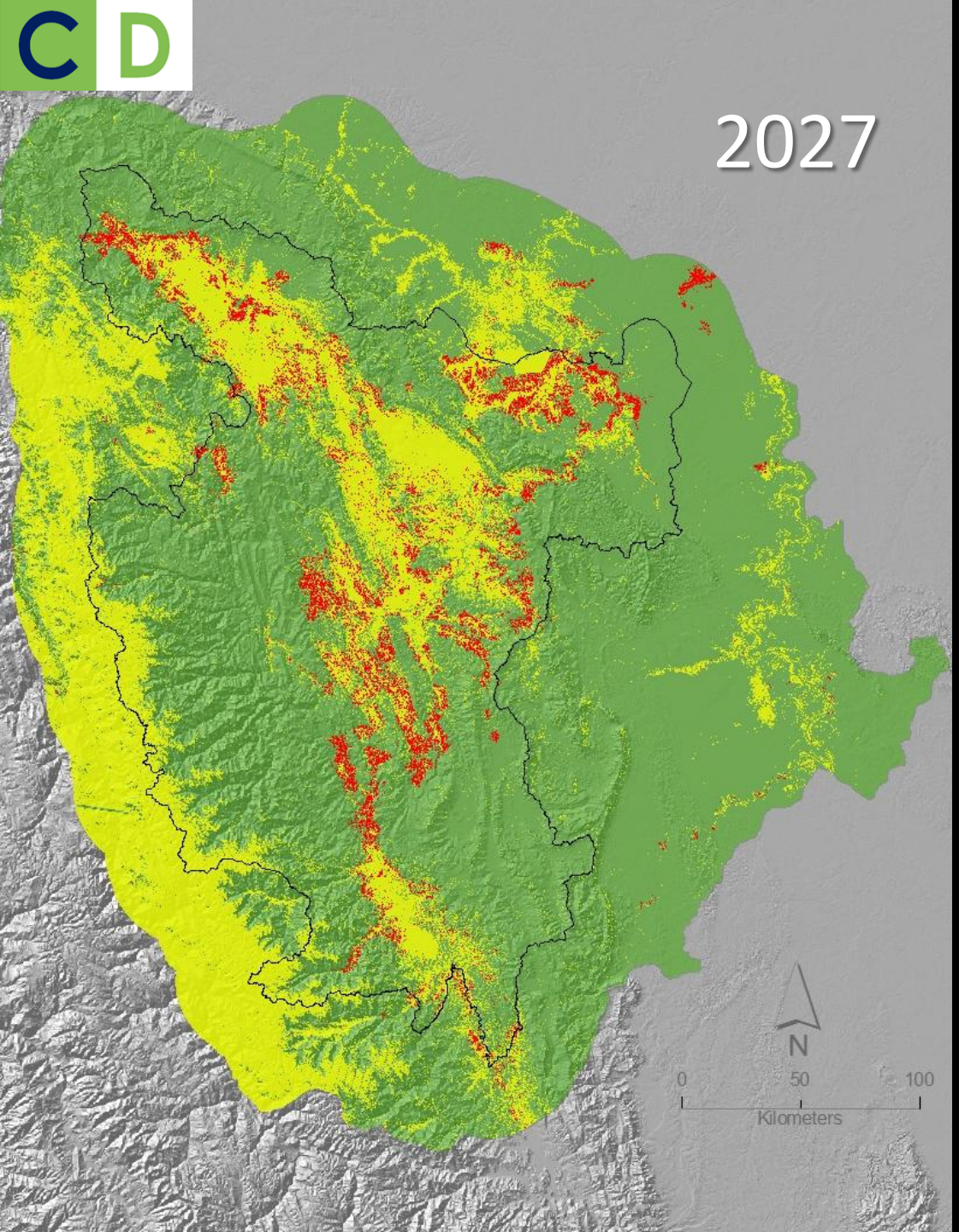


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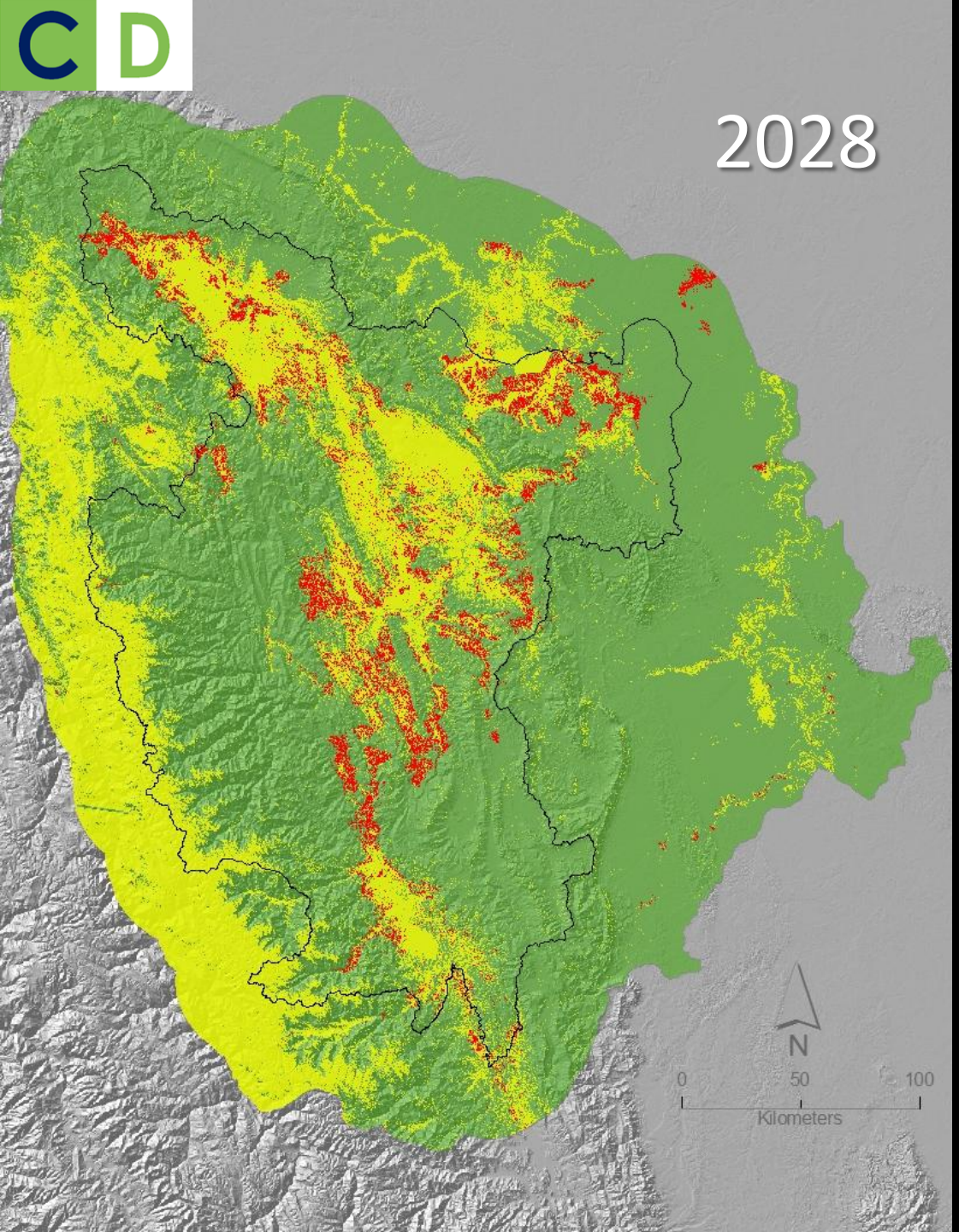


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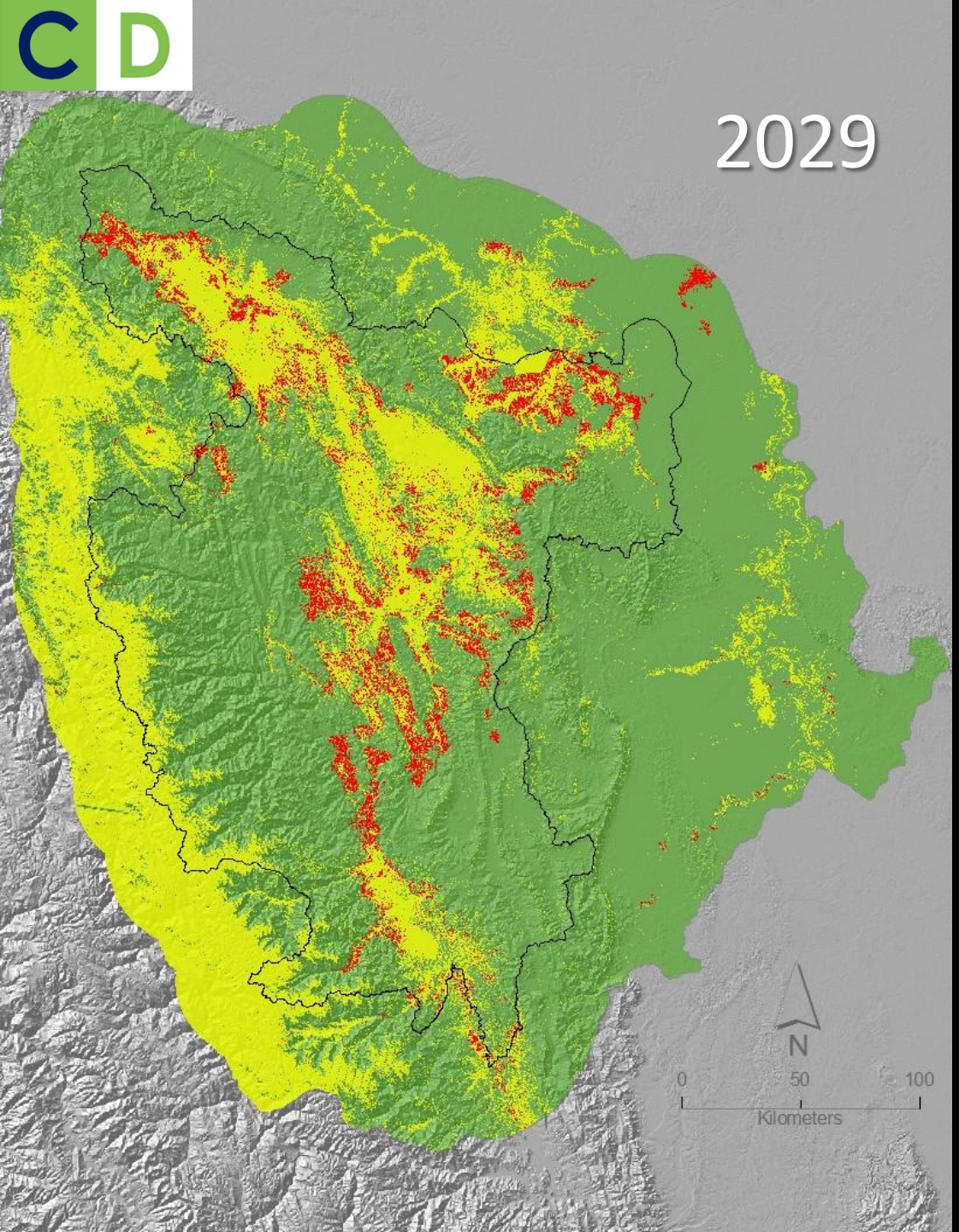


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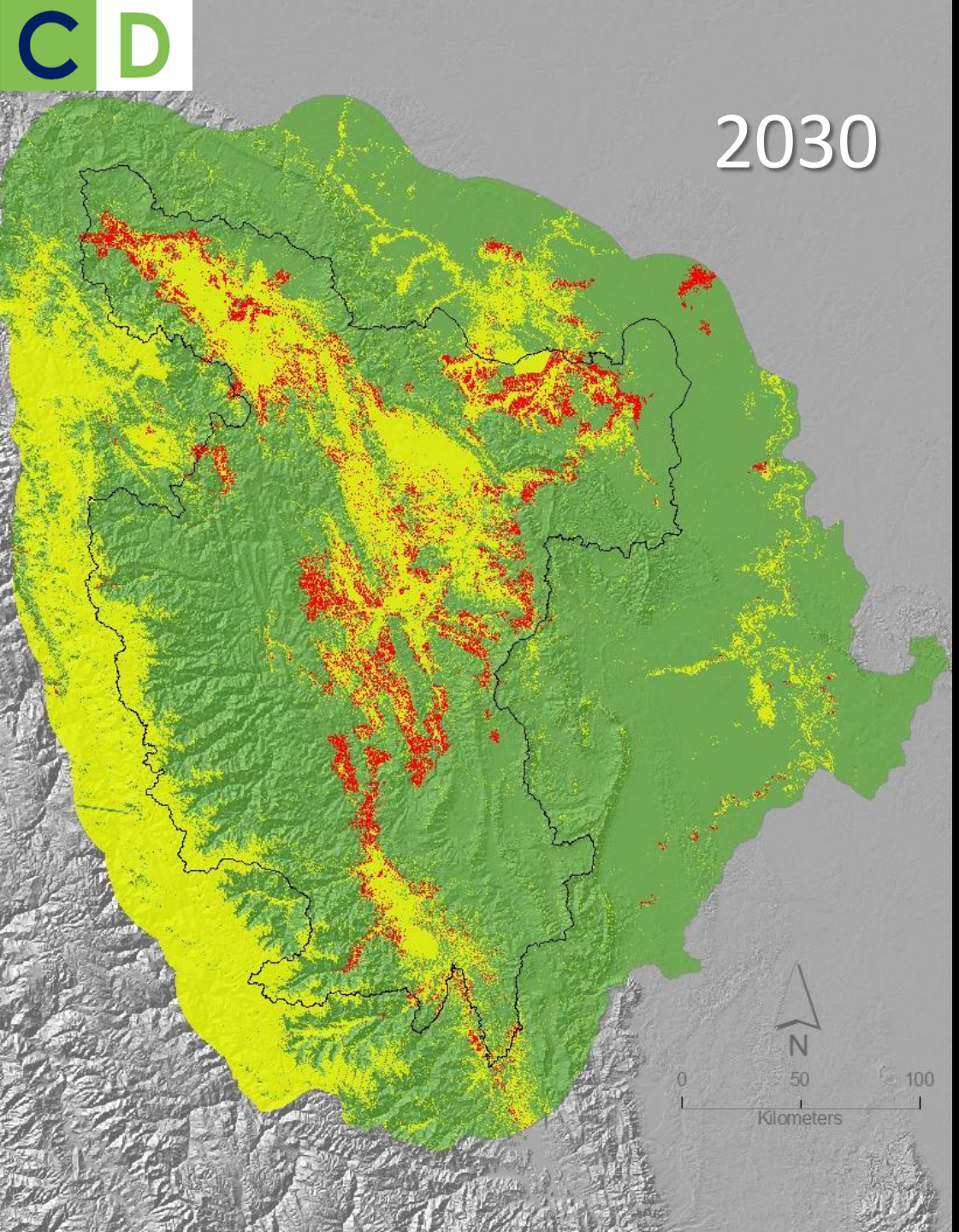
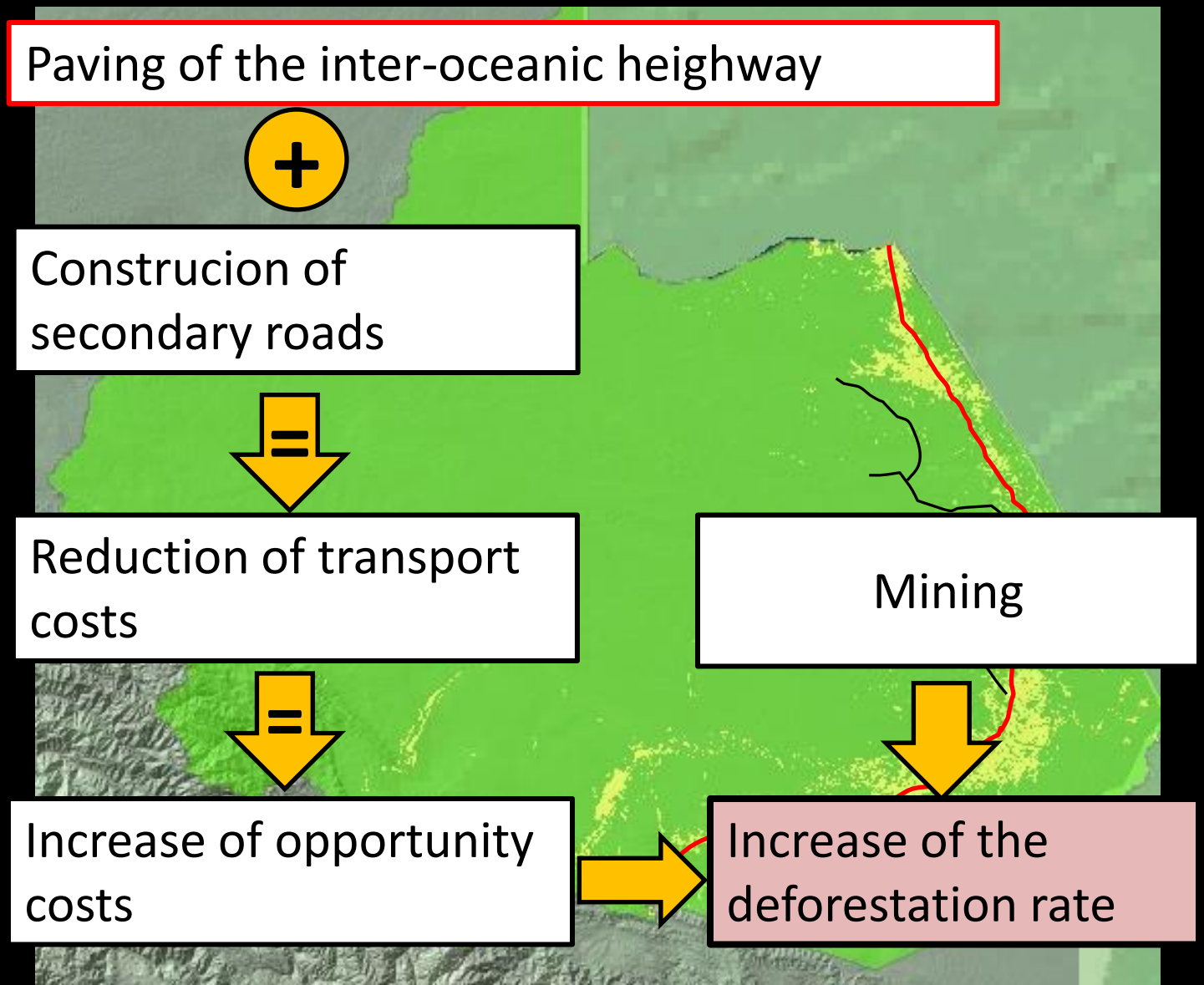


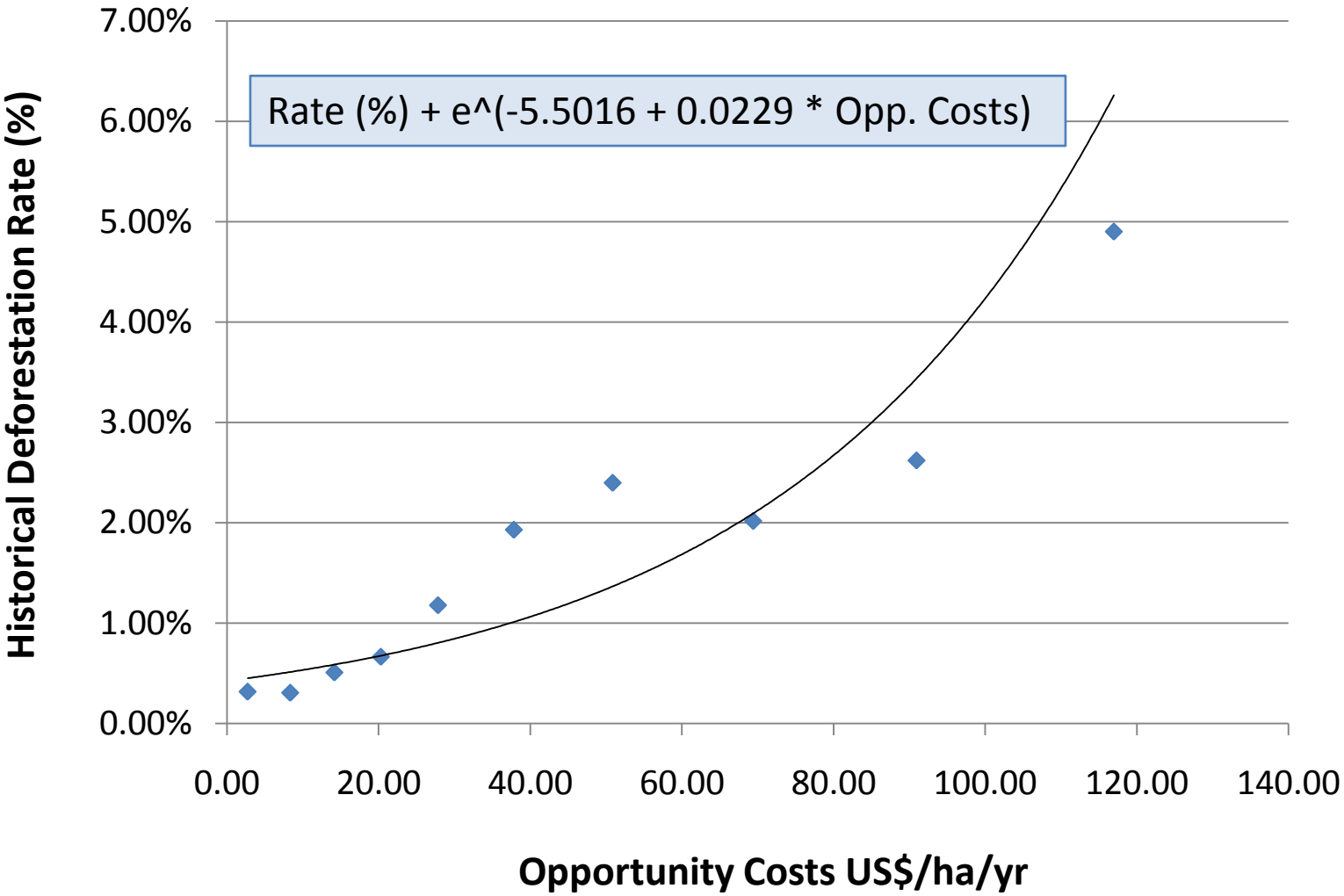

# Deforestation projection for San Martin

# Projection of the deforestation rate in Madre de Dios

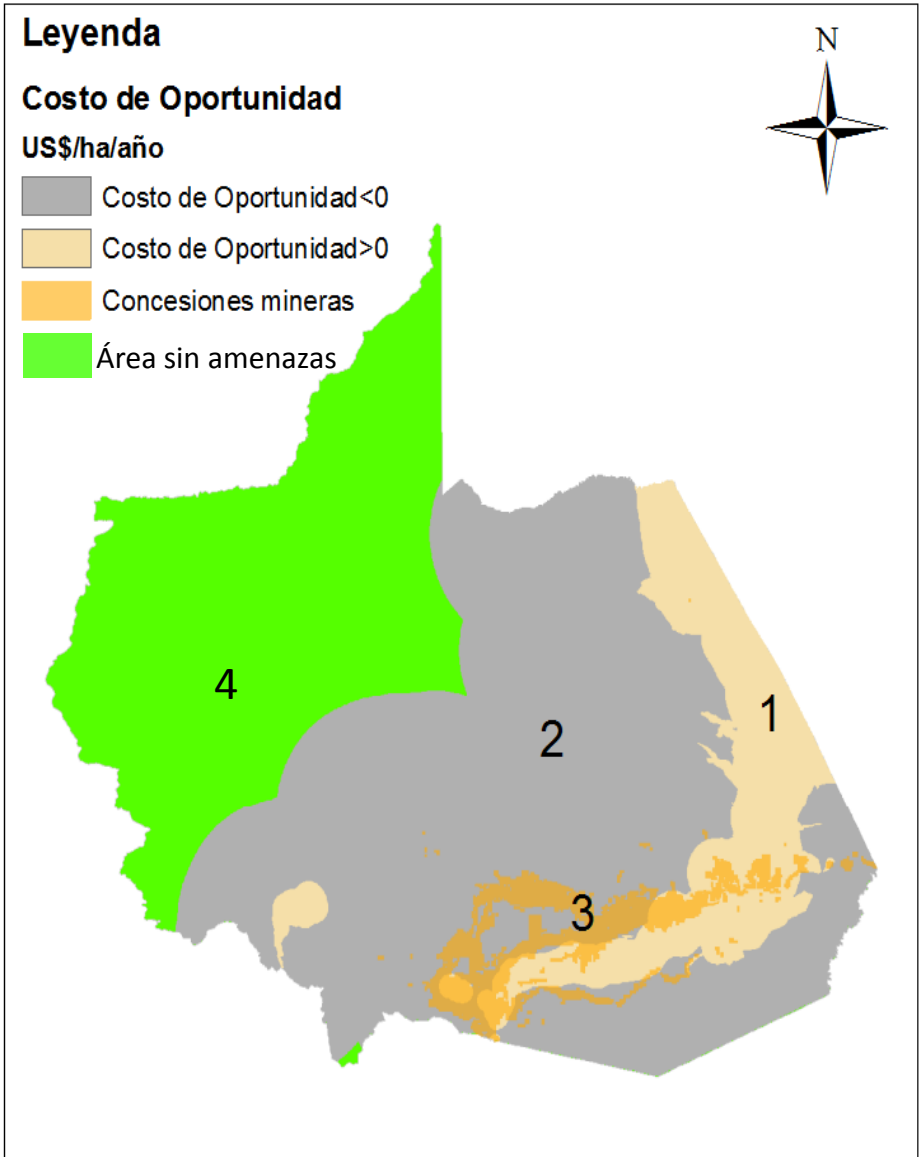


# Economic logic of deforestation

# Deforestation and opportunity costs (meat, corn) in Madre de Dios



# Strata for the projection of the deforestation rate




1) **Close to roads (+ positive opportunity costs)**

rate = f (opportunity costs)

2) **Far from roads (= negative opportunity costs)**

rate = average historic rate (very low rate)

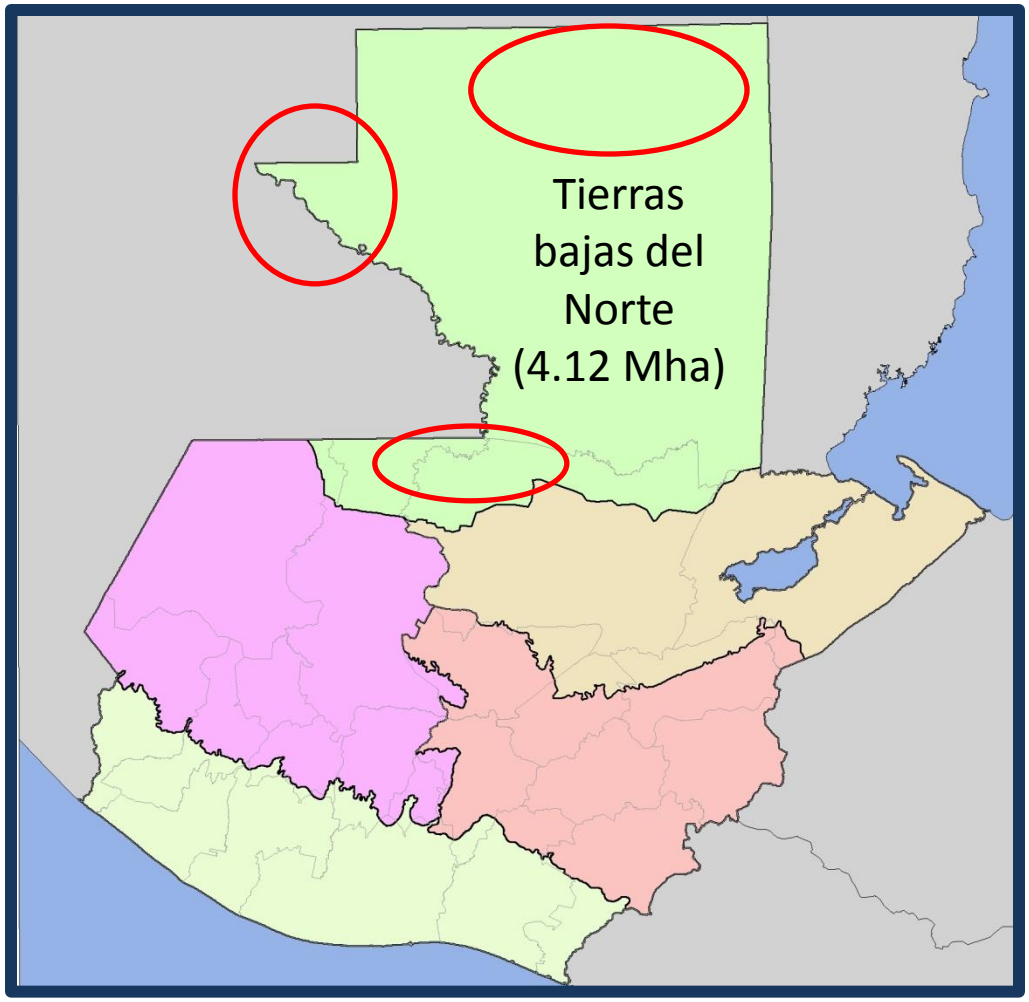
3) **Mining concessions**

rate = average historic rate (very high rate)

4) **More than 50 km from roads**

rate = 0

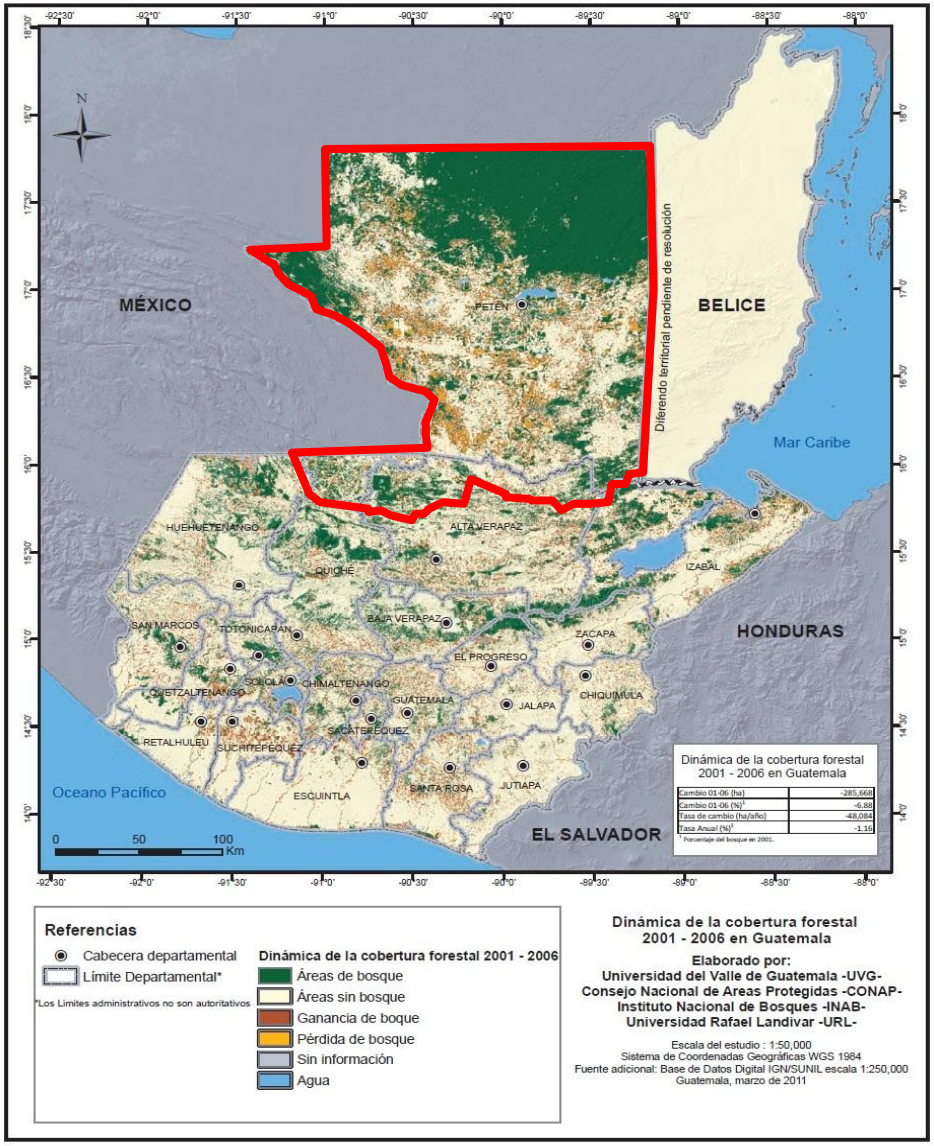
# Guatemala
## 5 sub-national regions




Nested REDD projects

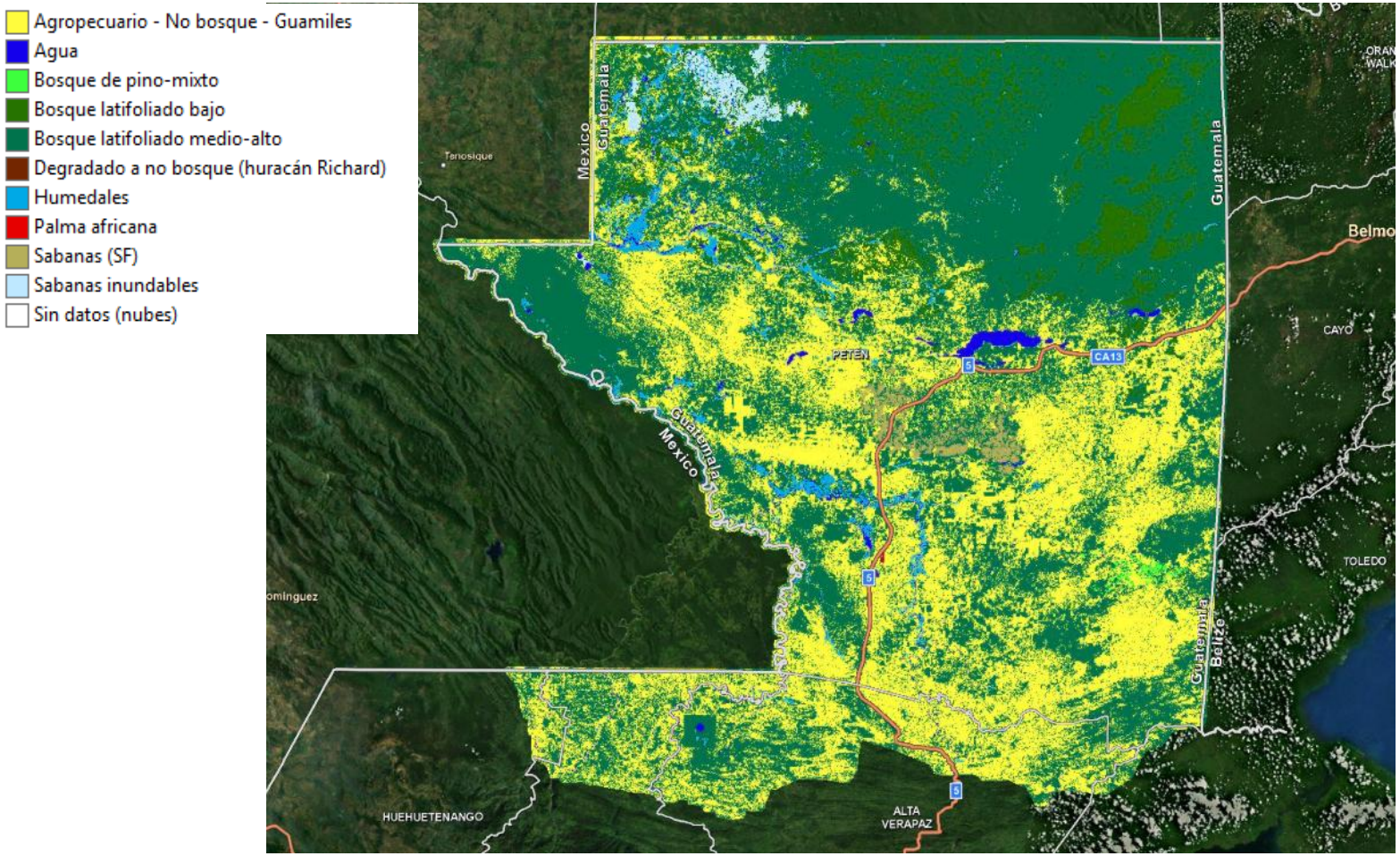
- 2 national workshops to define the regions.
- Each region has different circumstances.
- A REL will be developed for each region.
- The sum of regional RELs will be the national REL.

# Guatemala



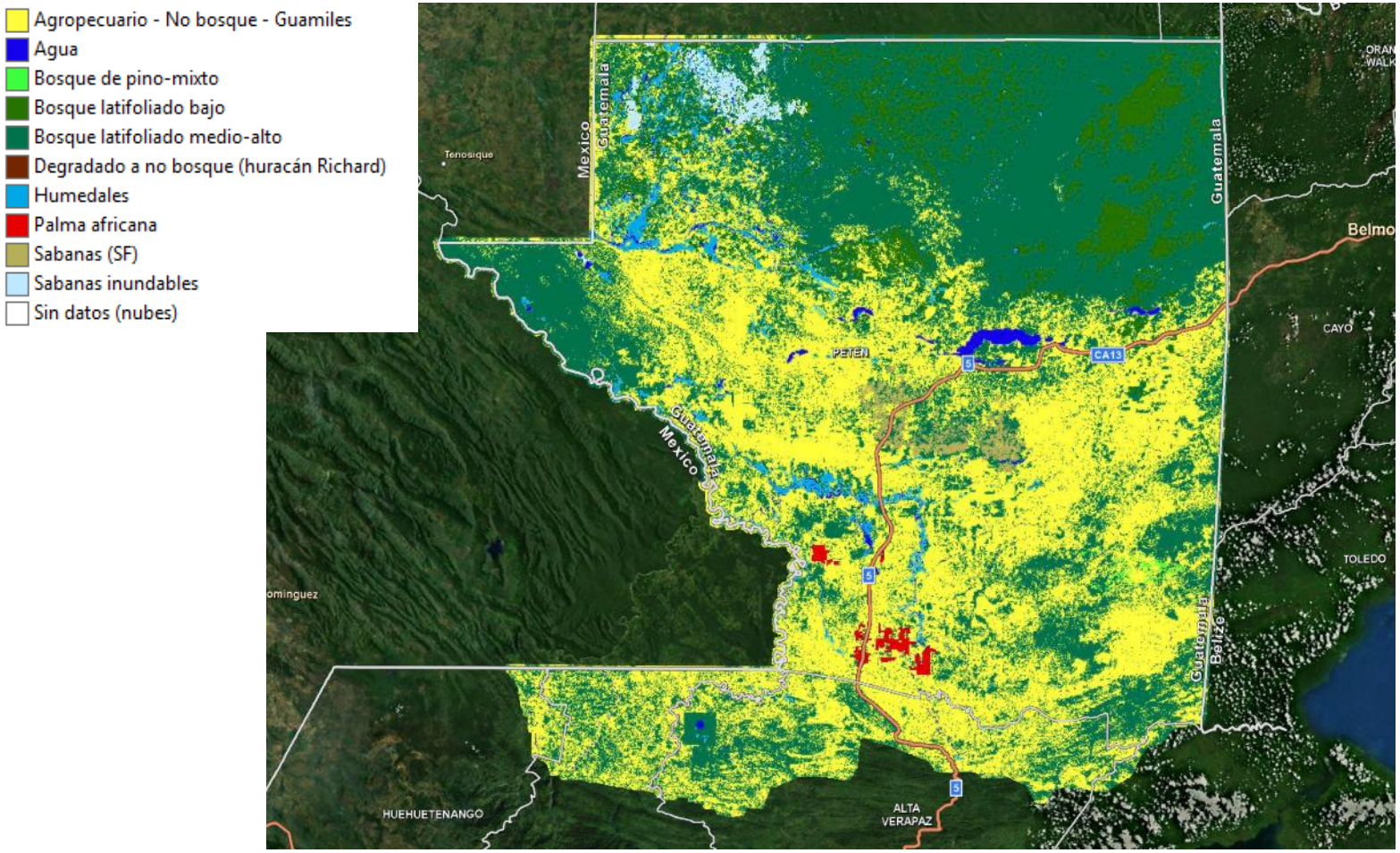

Most of the remaining forest is located in the “Tierras bajas del Norte”

# Historical Activity Data



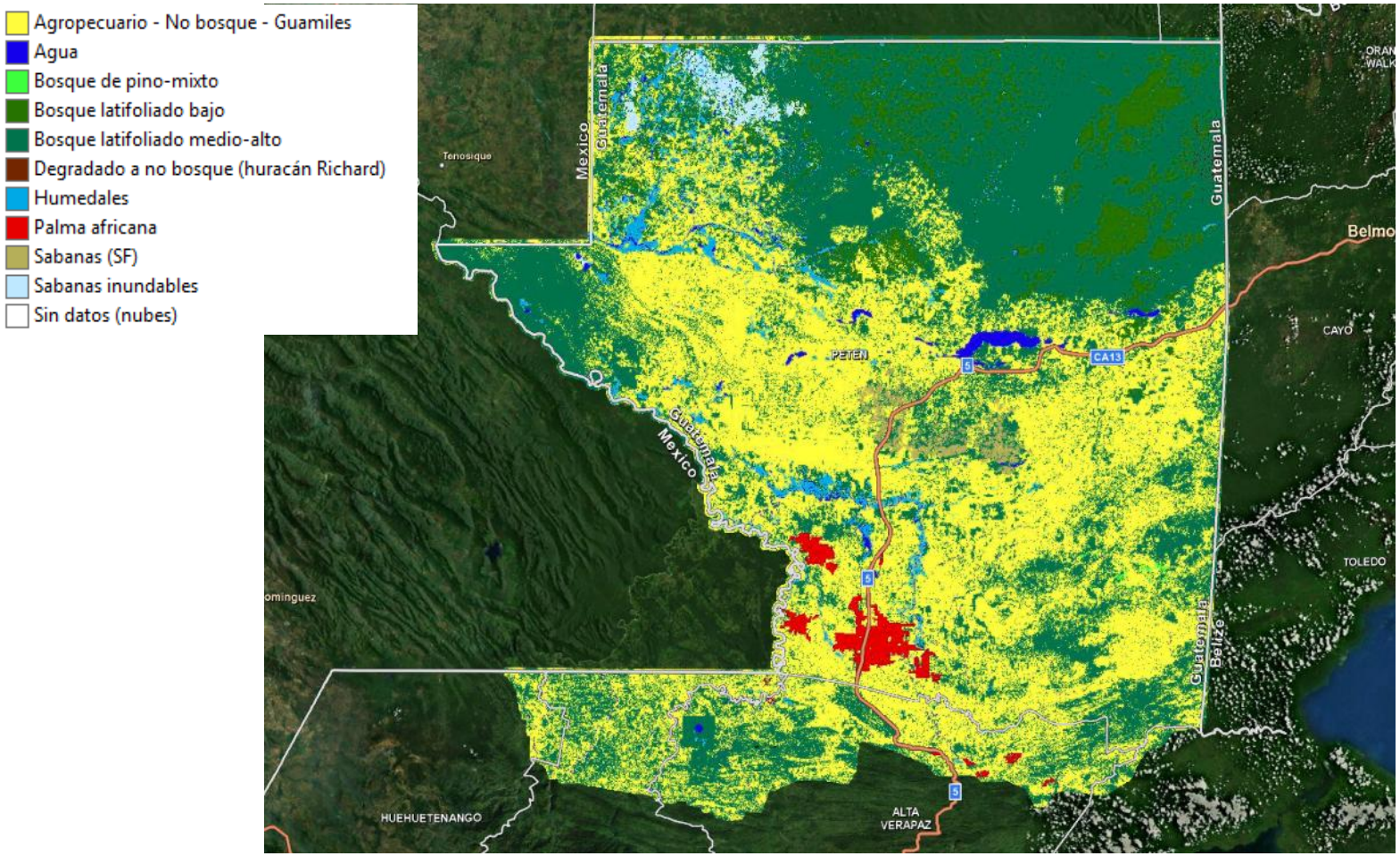

2000

# Historical Activity Data




2006

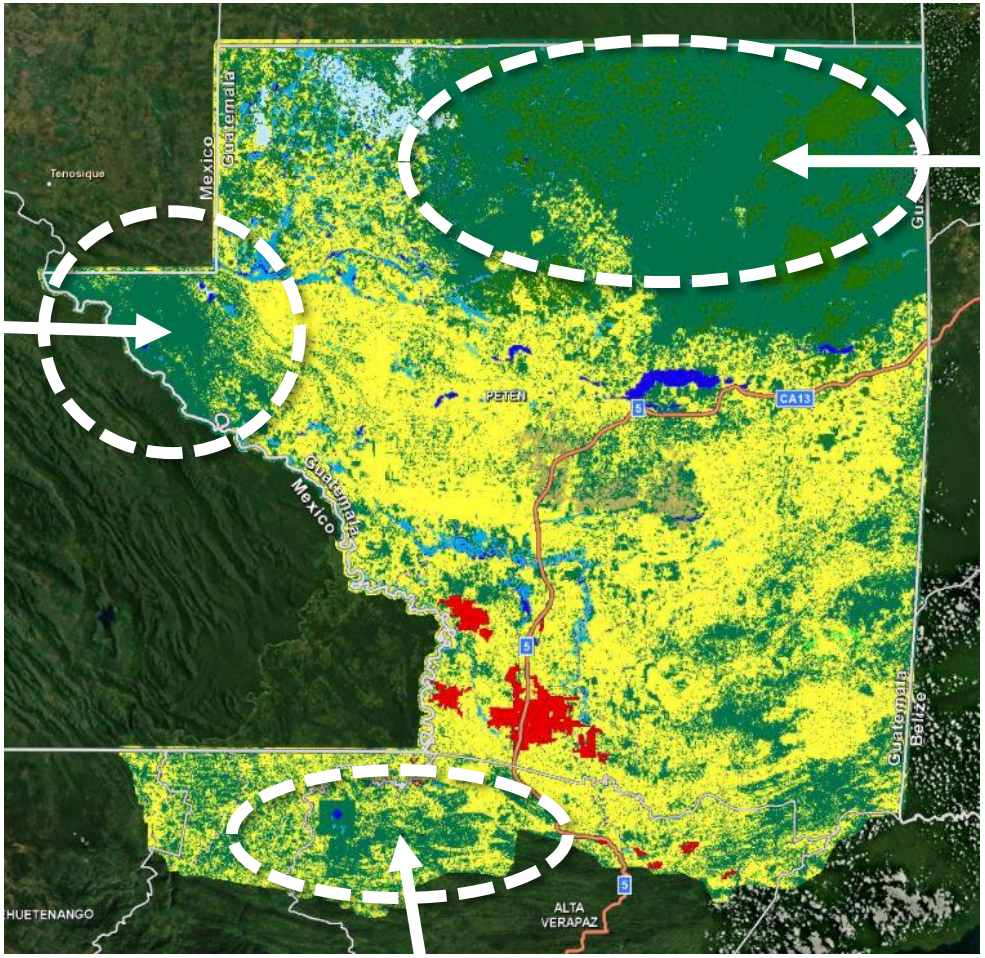
# Historical Activity Data




2010

# REDD projects in preparation

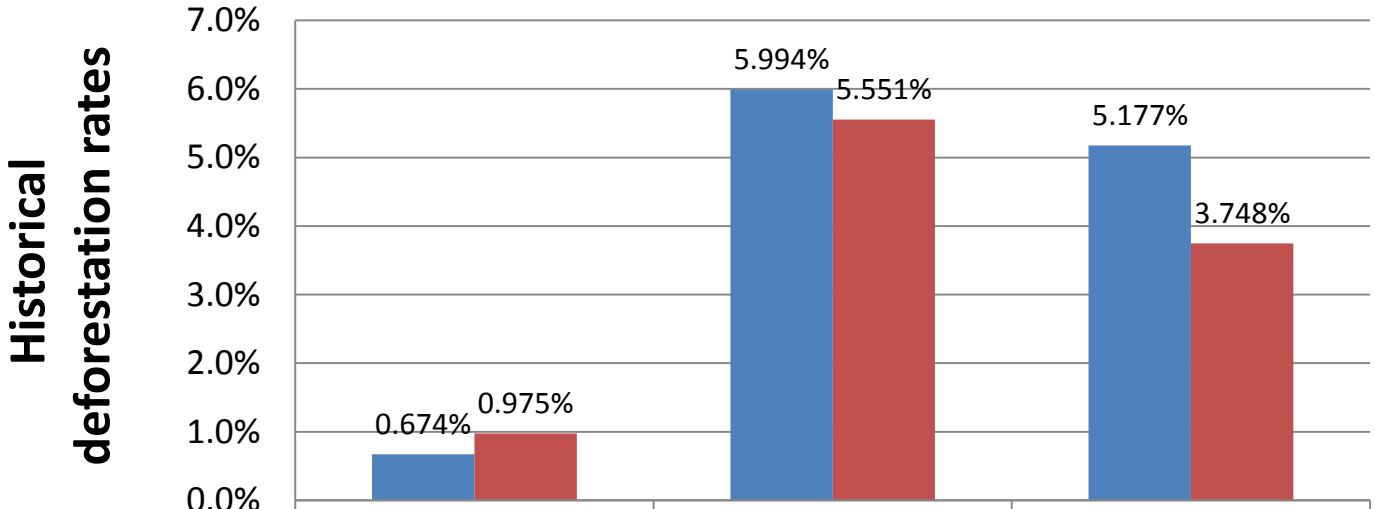
National Park Sierra del Lacandón



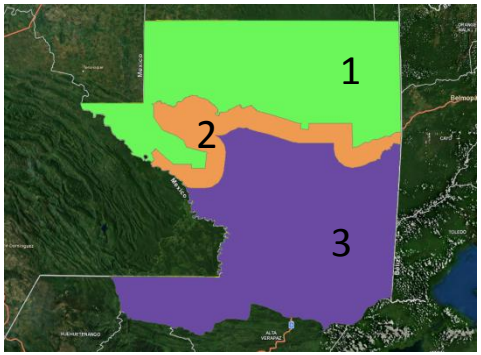

Forestry Concessions Zona de Uso Múltiple de la RBM

Lachuá Ecoregion

# Stratification to project rates




| | Estrato 1 | Estrato 2 | Estrato 3 |
|---|---|---|---|
| Periodo de análsis 2000-2006 | 0.674% | 5.994% | 5.177% |
| Periodo de análsis 2006-2010 | 0.975% | 5.551% | 3.748% |

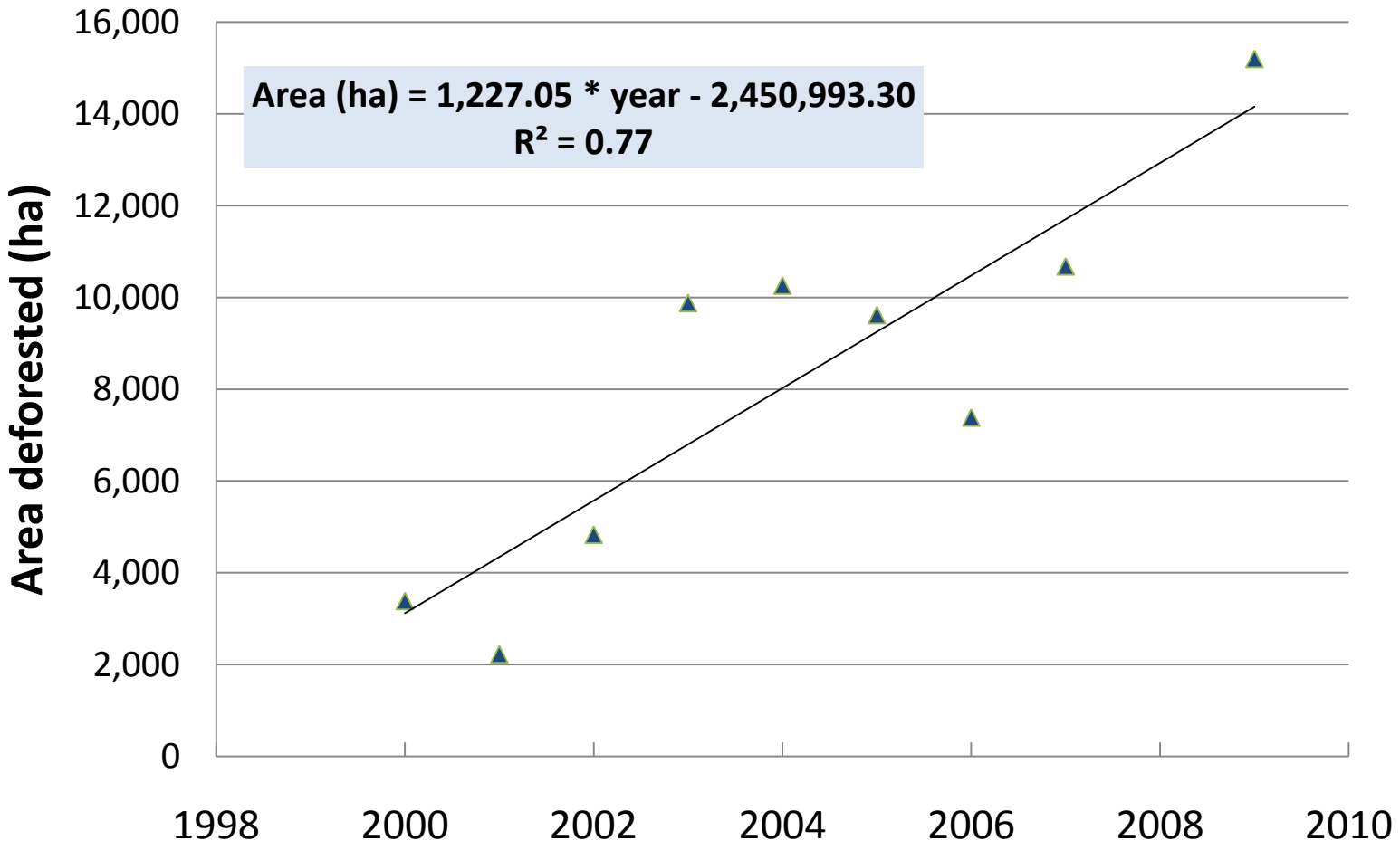


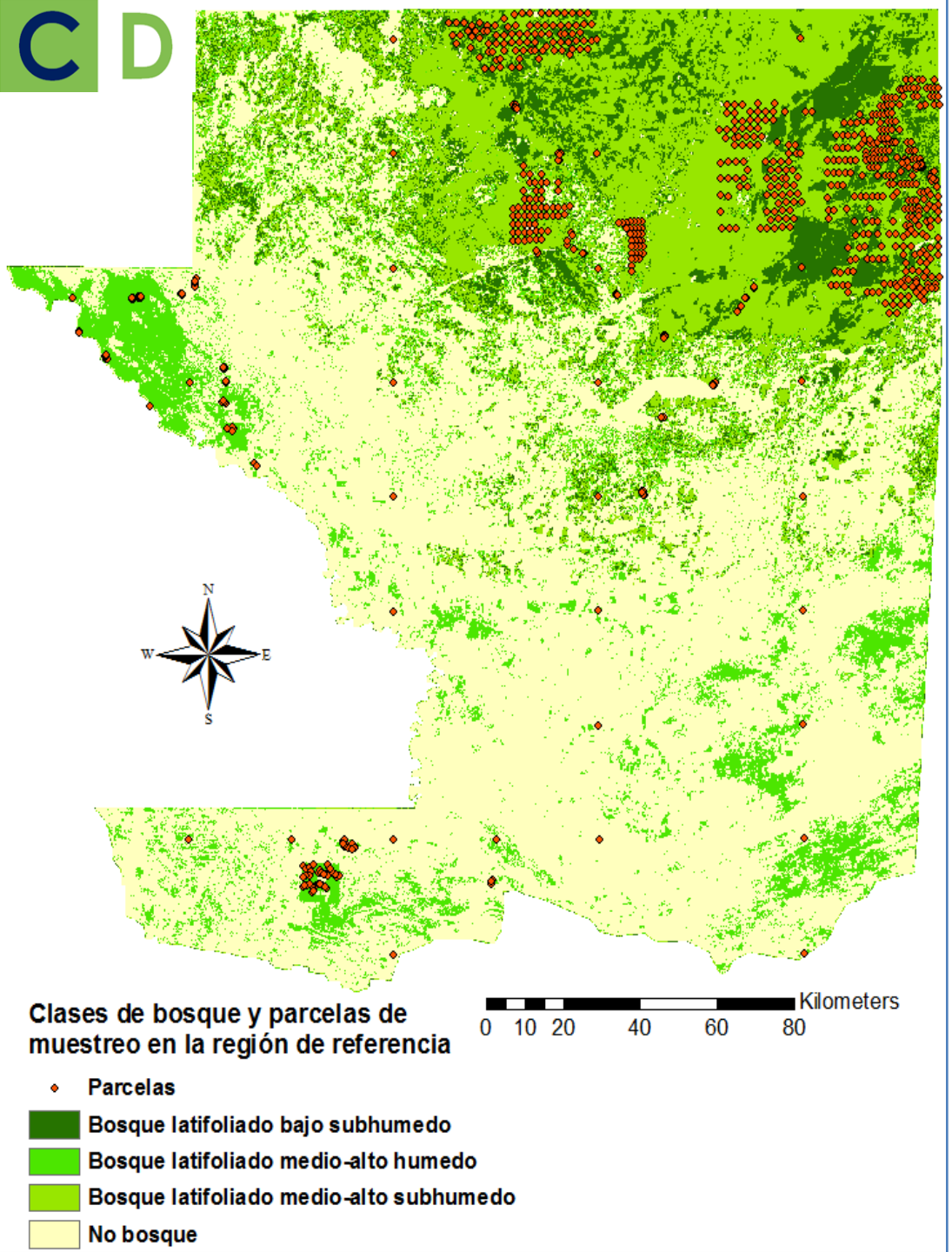

**Stratum 1: increasing rate**

**Stratum 2: about constant rate**

**Stratum 3: decreasing rate**

# Projection in stratum 1

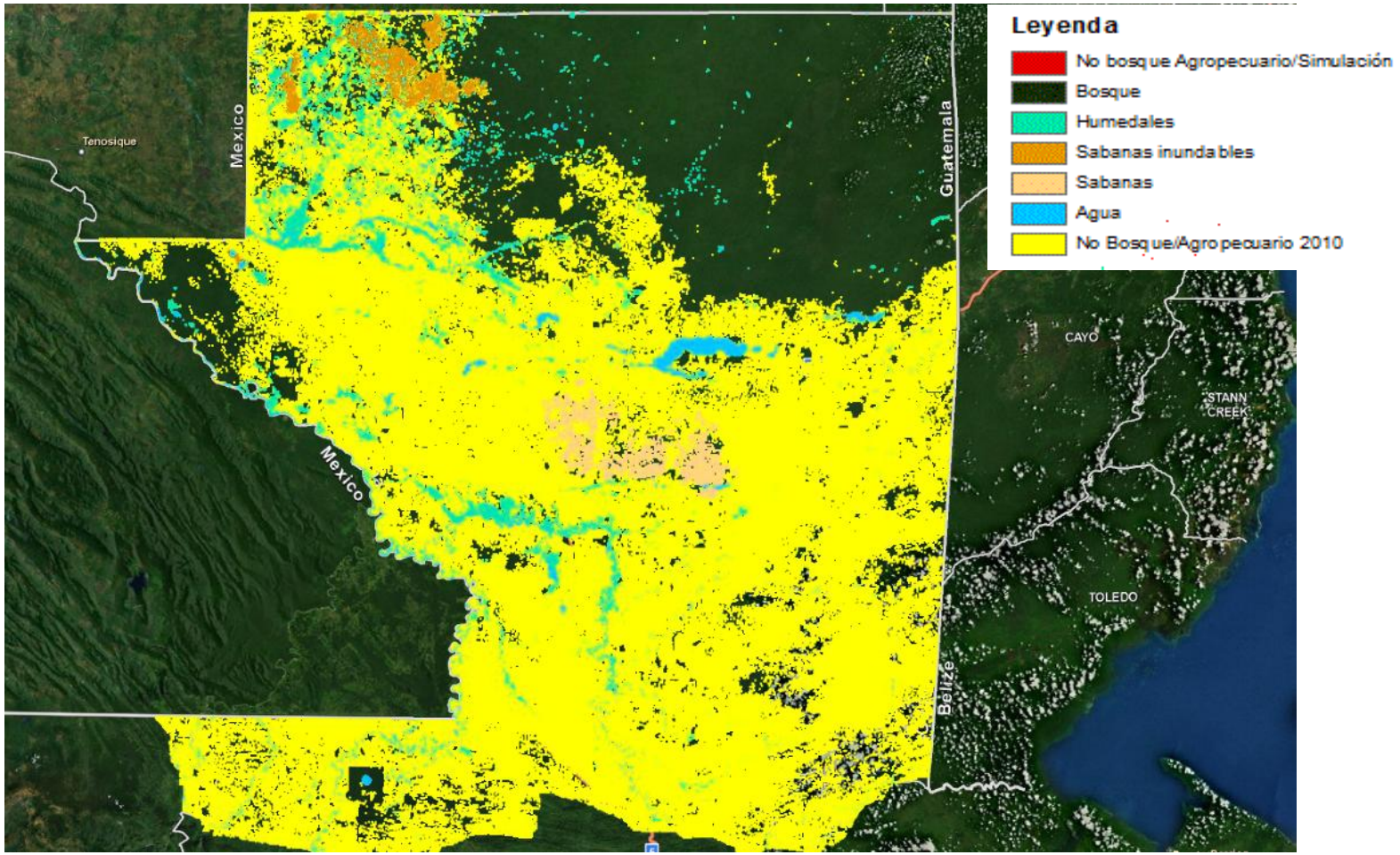





Carbon Stocks:

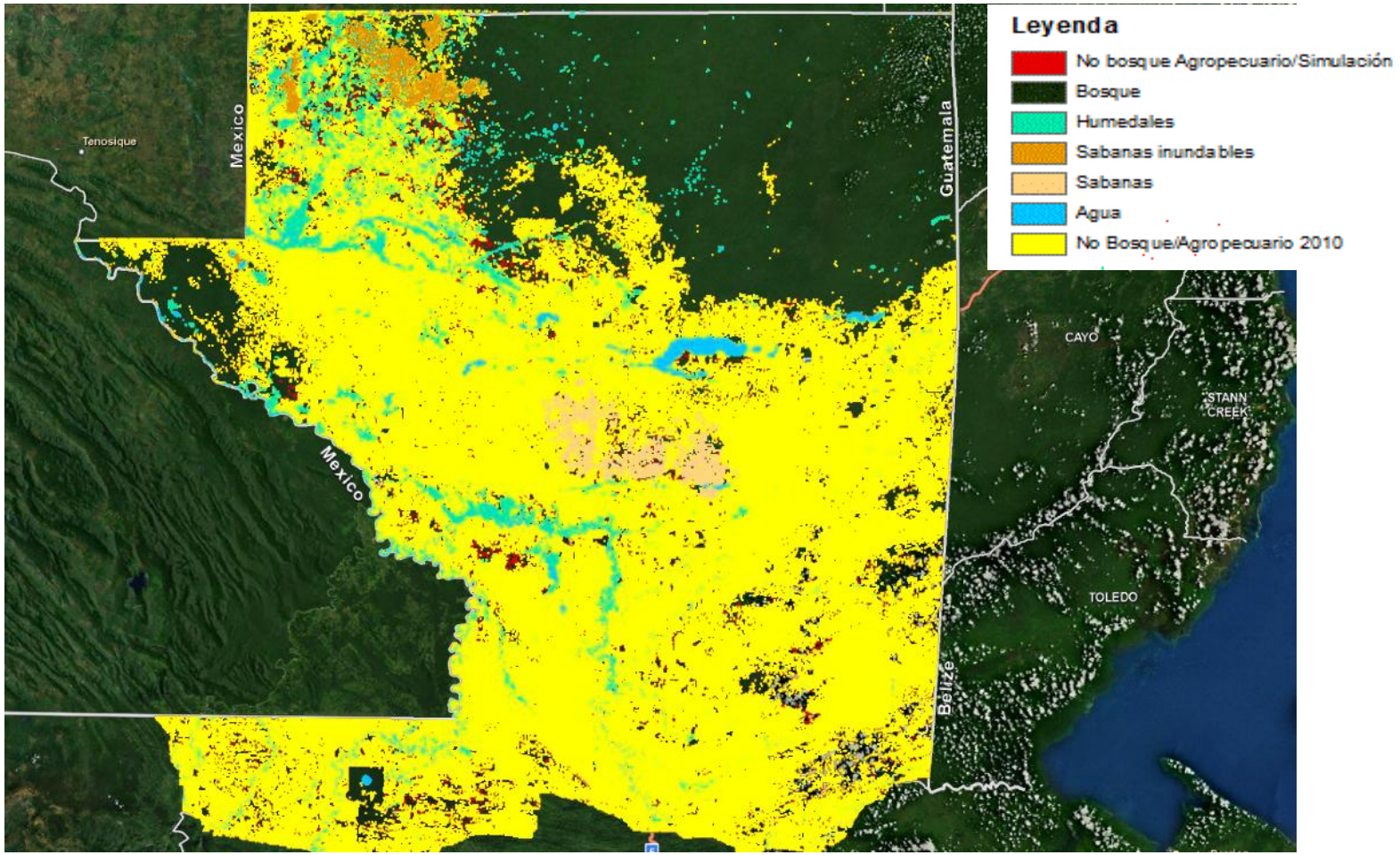
- 762 plots.
- $CO_2$-e/ha:
  - 274.7 ± 19.1
  - 181.3 ± 0.3
  - 344.7 ± 18.6

# Deforestation projection



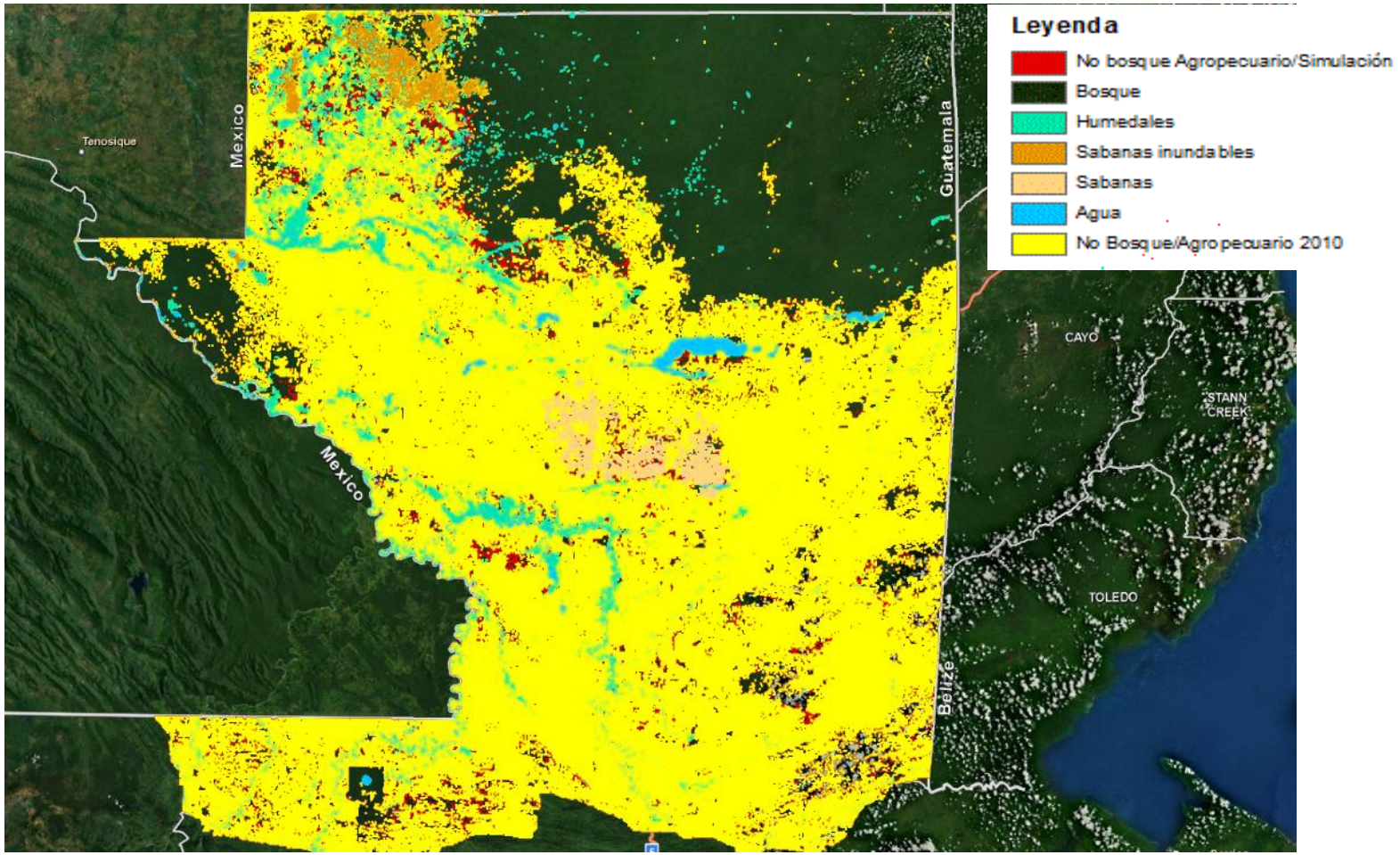

2010

# Deforestation projection



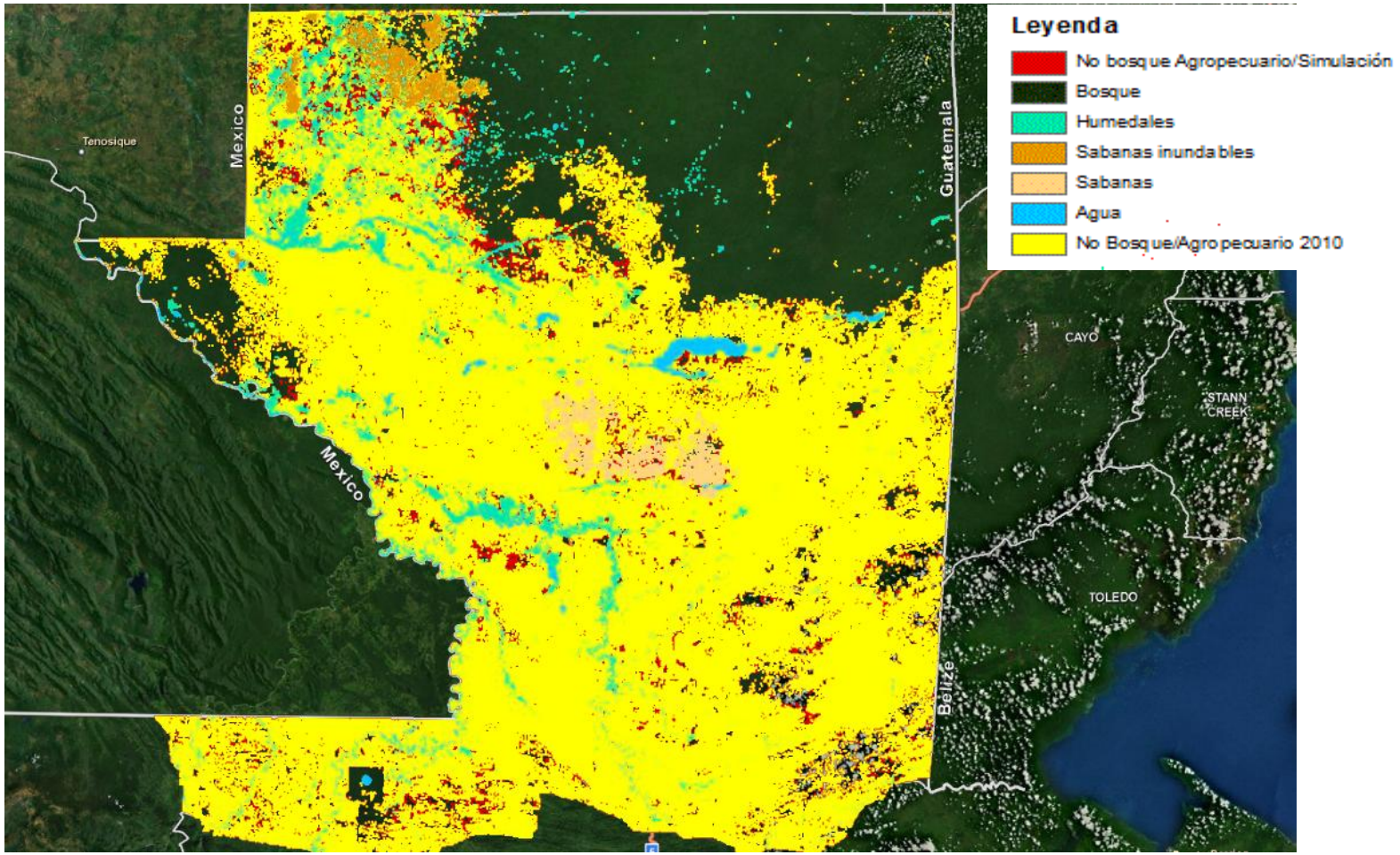

2011

# Deforestation projection



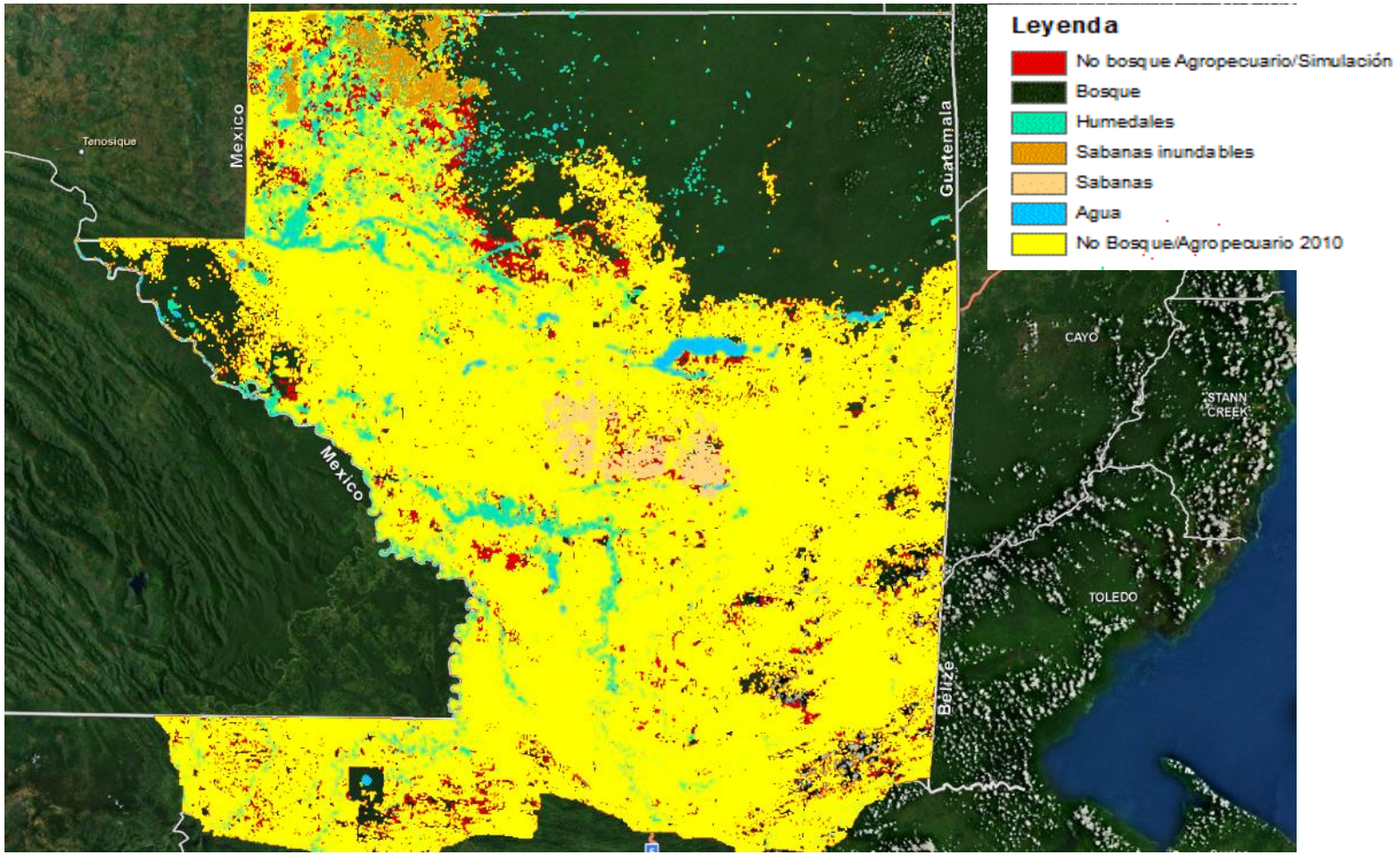

2012

# Deforestation projection



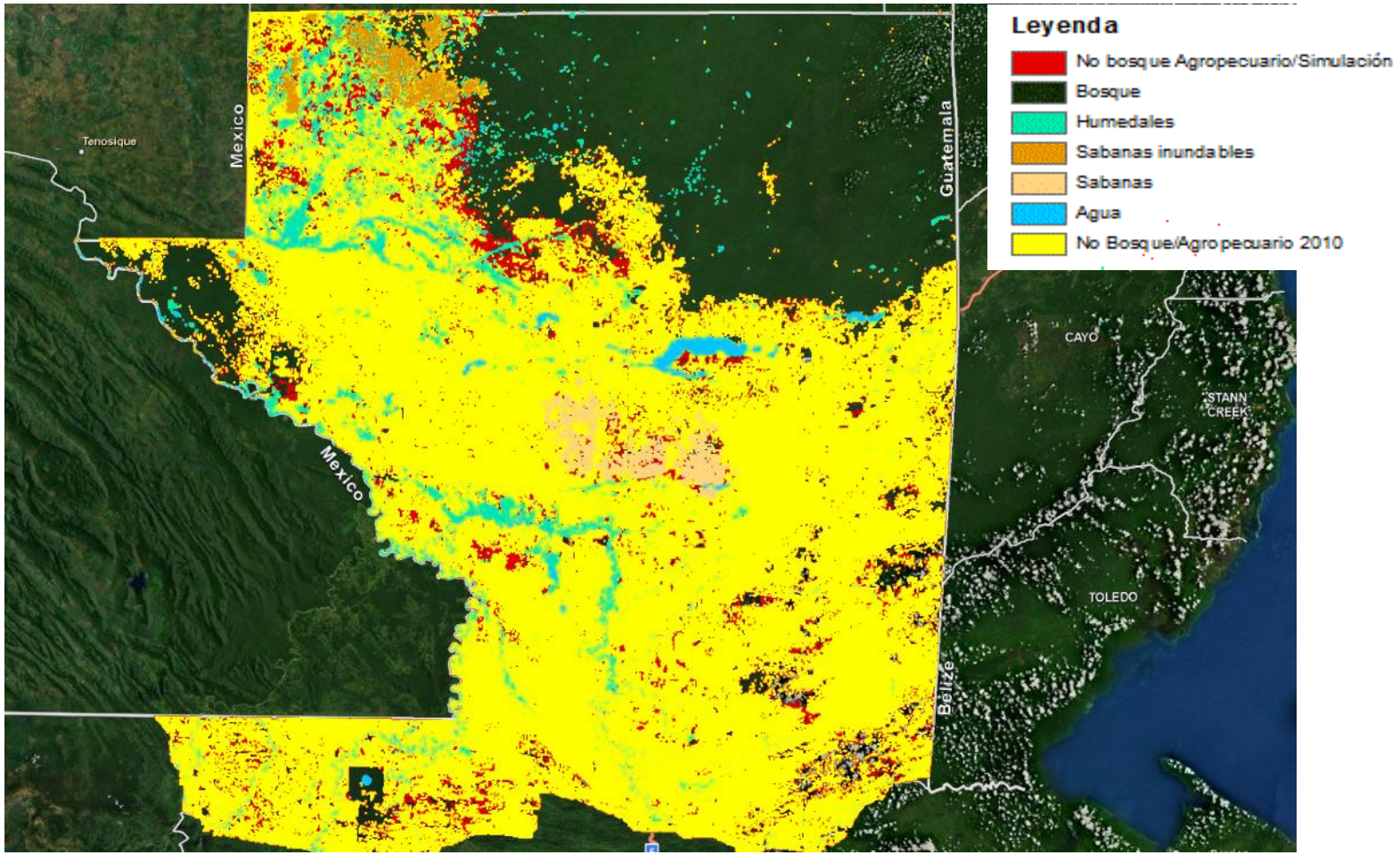

2013

# Deforestation projection



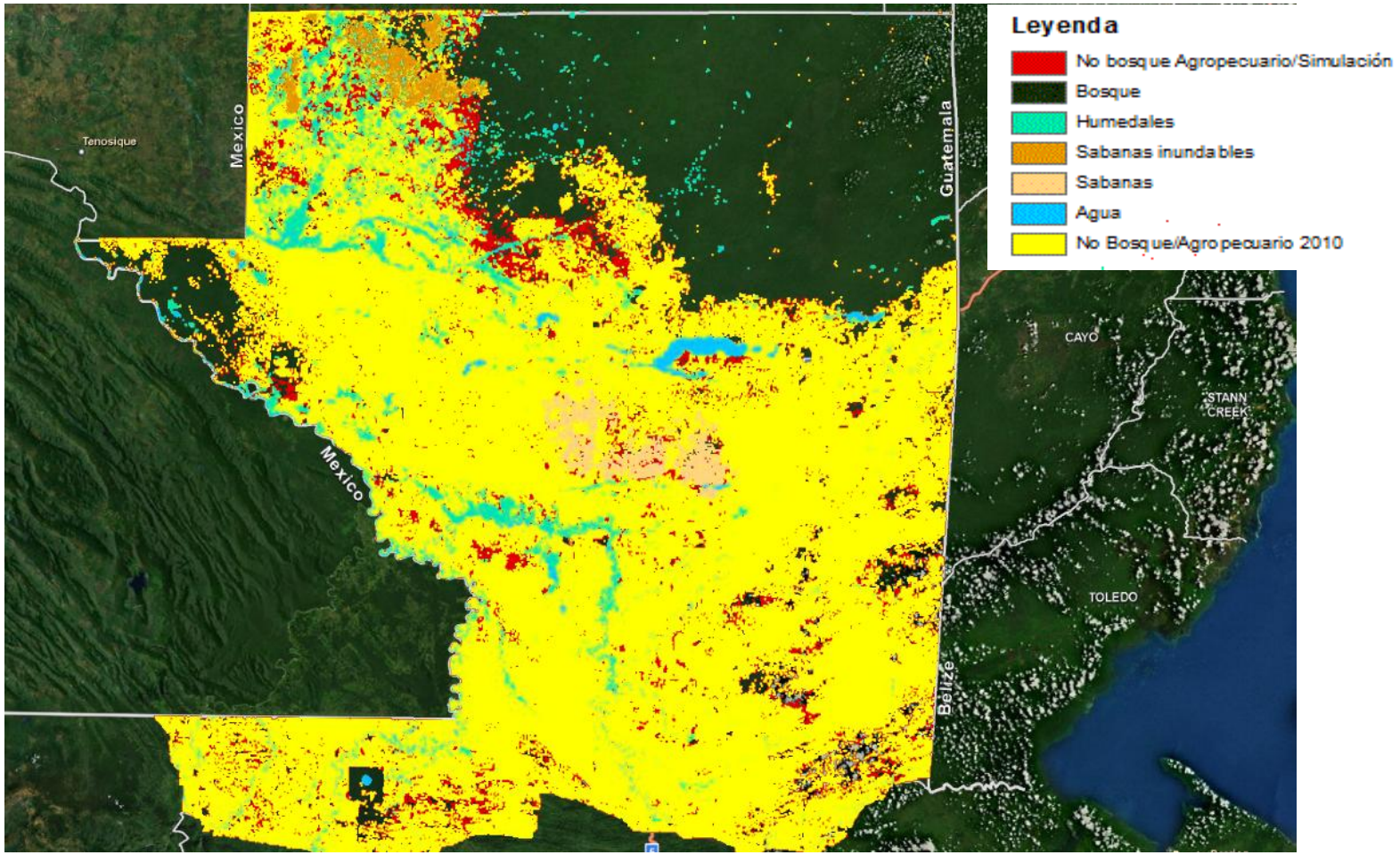

2014

# Deforestation projection



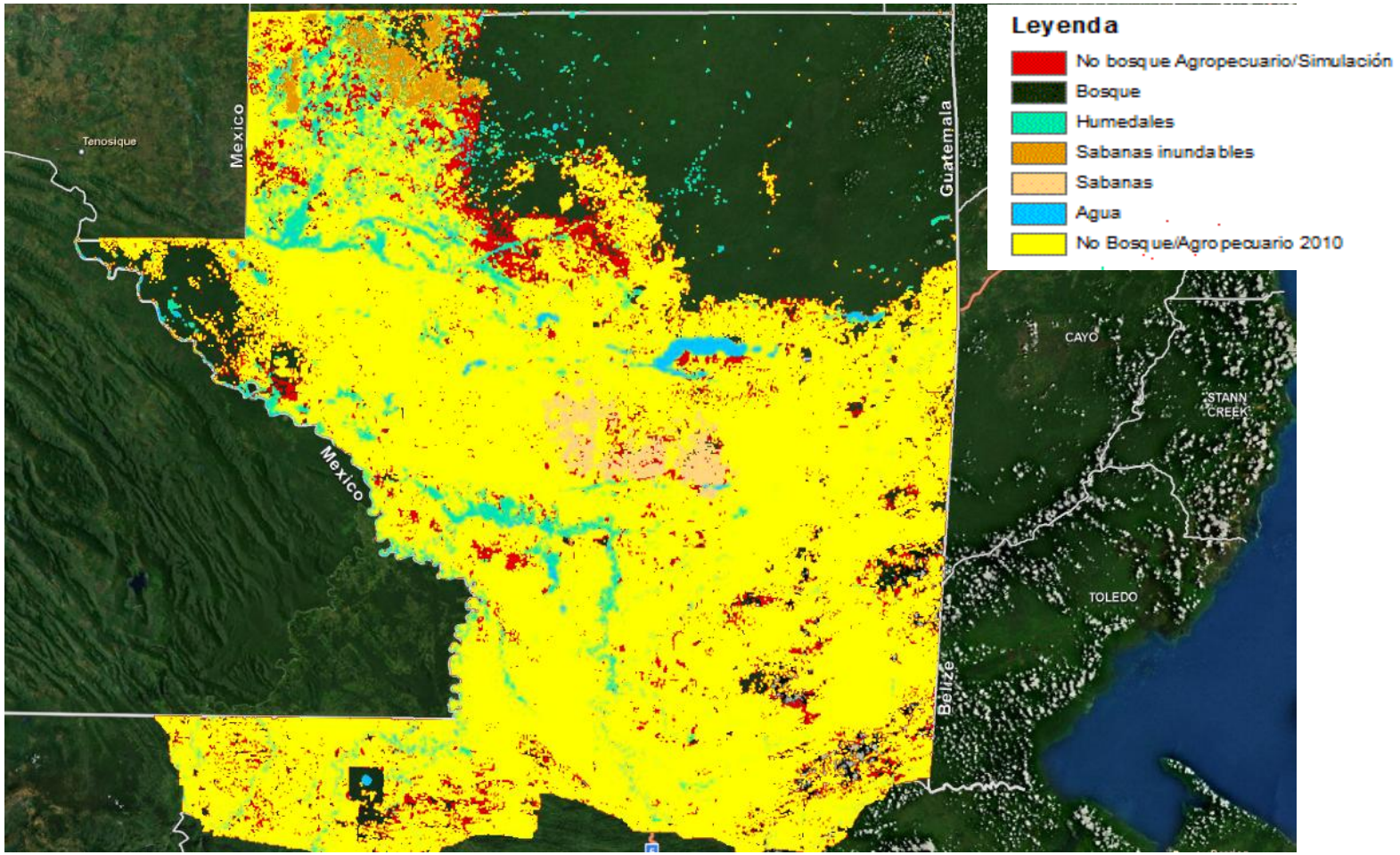

2015

# Deforestation projection



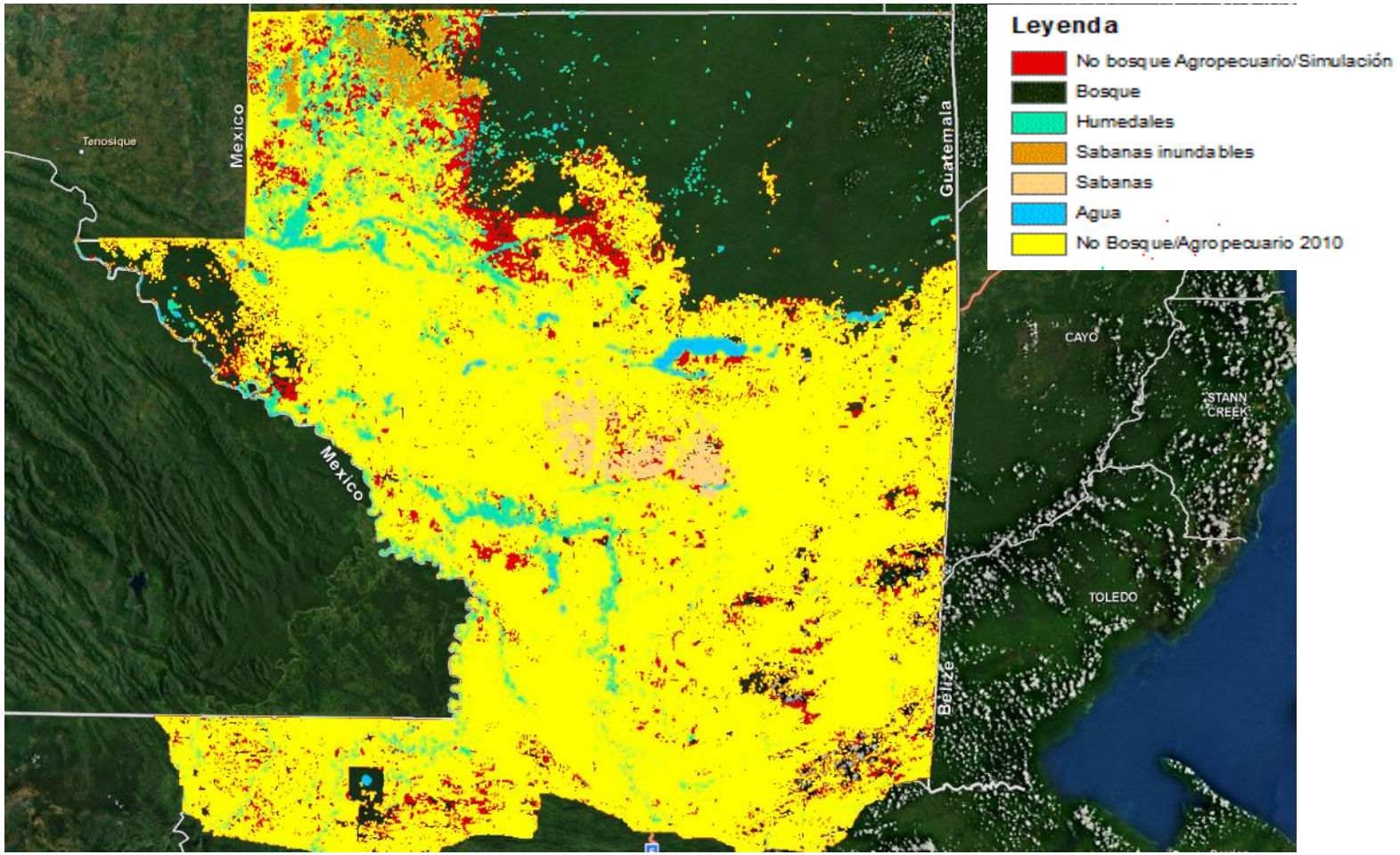

2016

# Deforestation projection



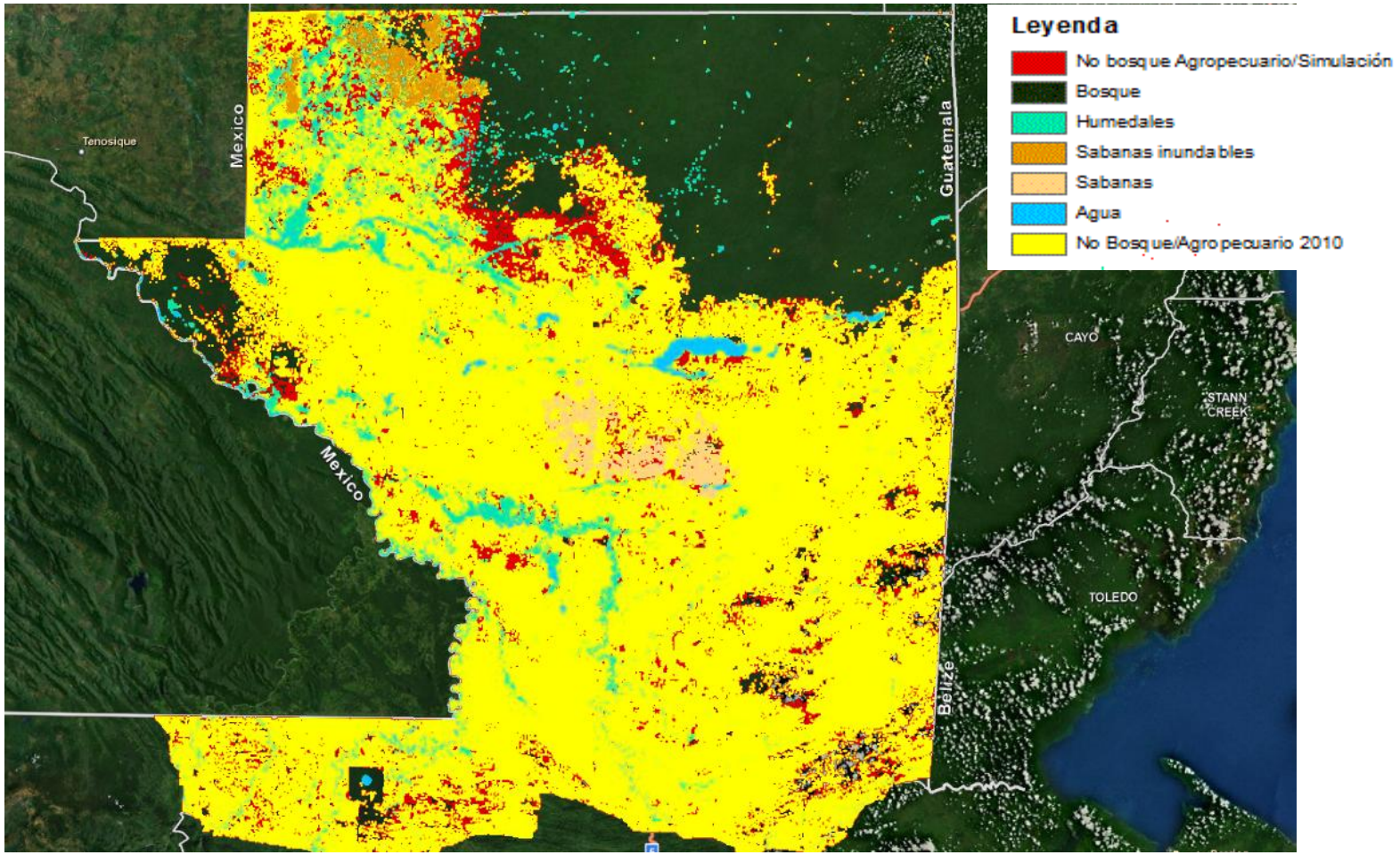

2017

# Deforestation projection



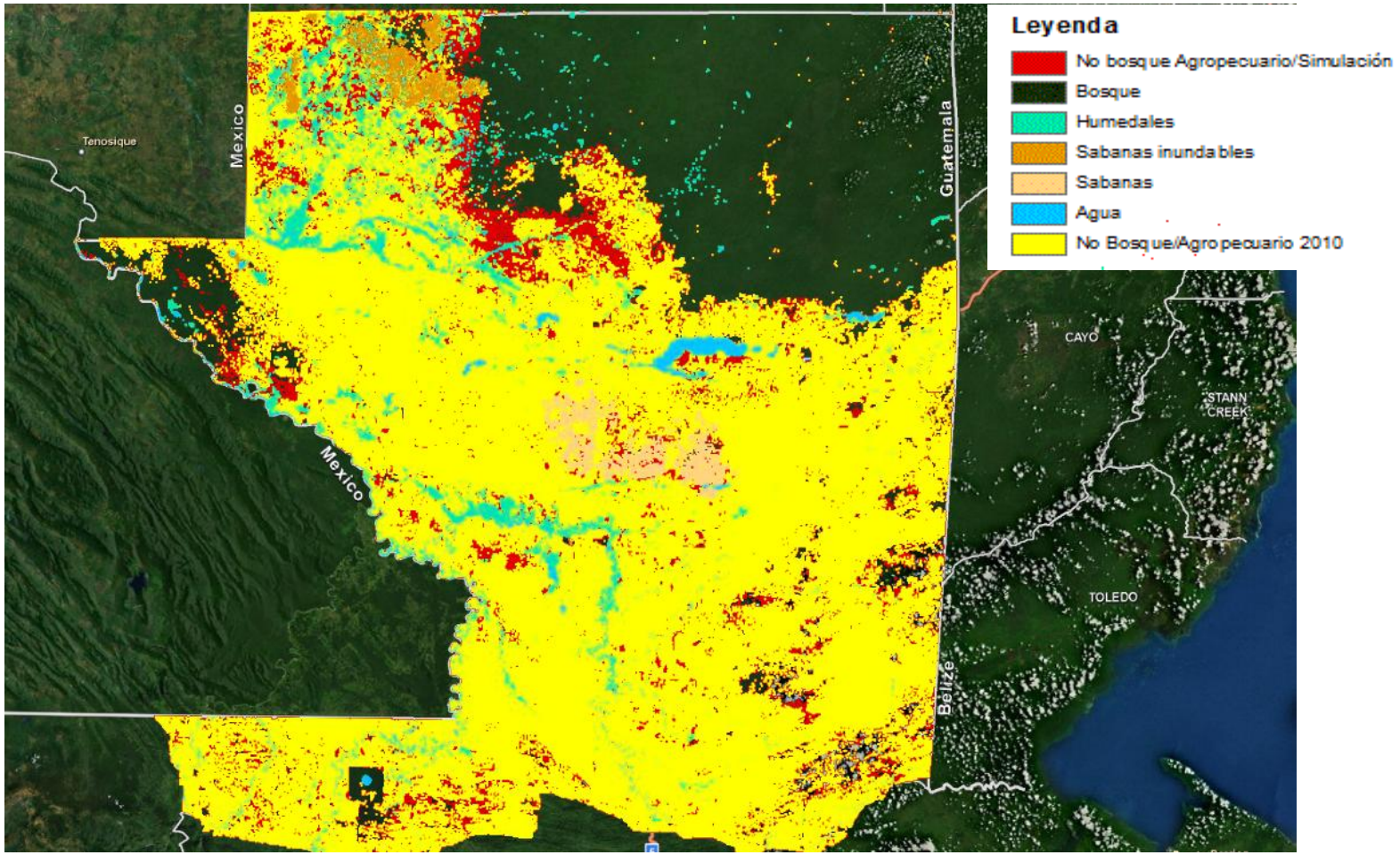

2018

# Deforestation projection



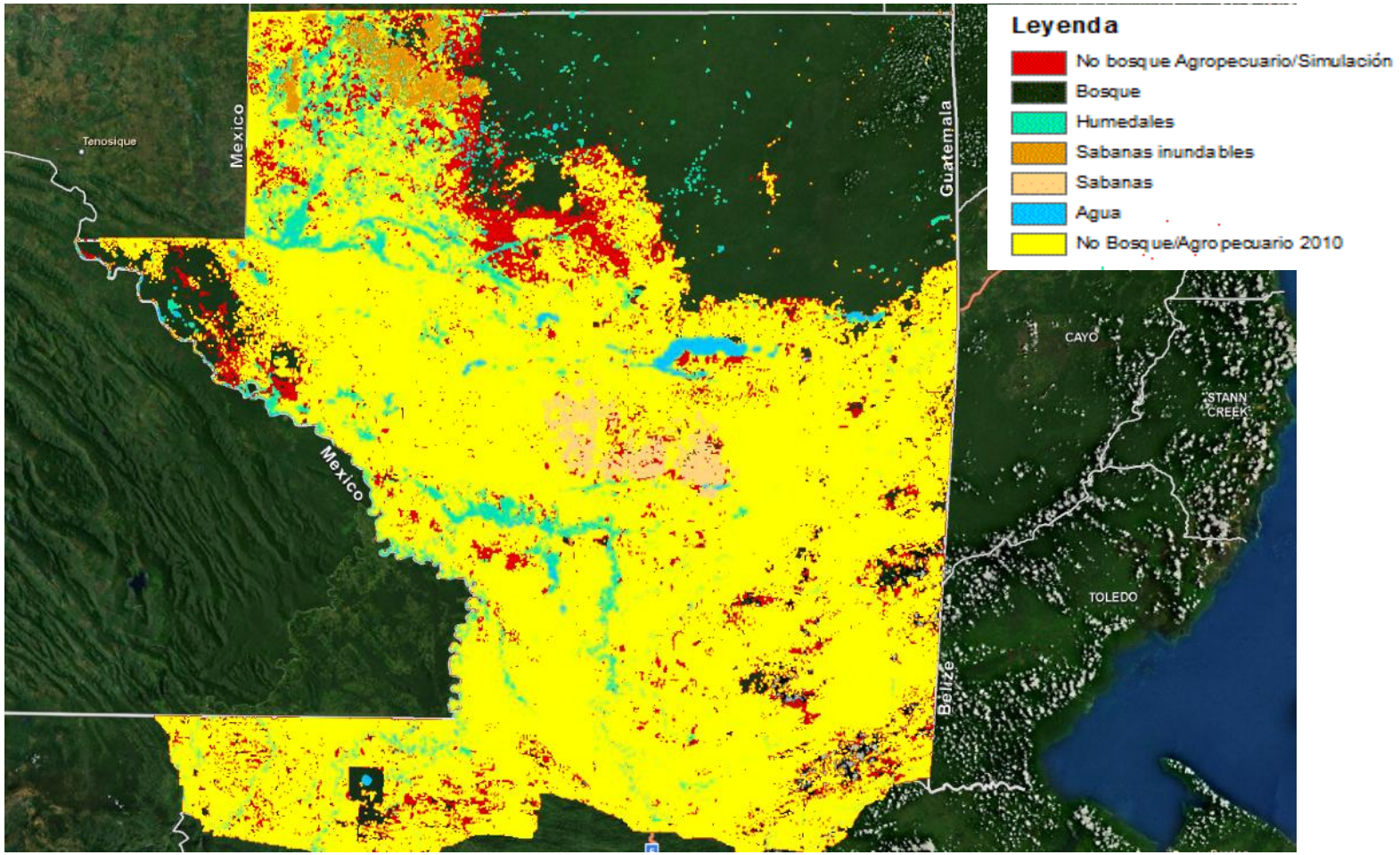

2019

# Deforestation projection



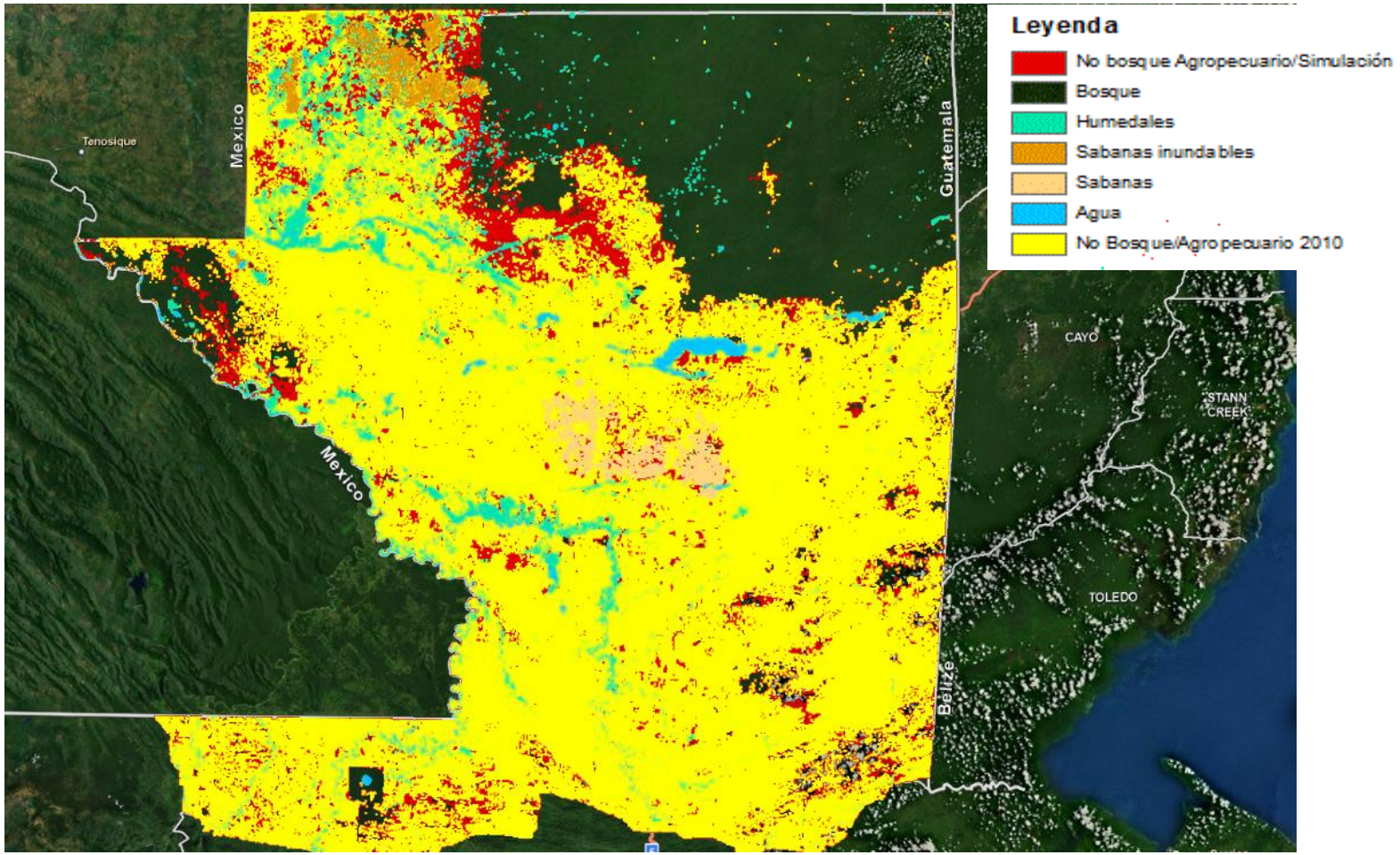

2020

# Deforestation projection



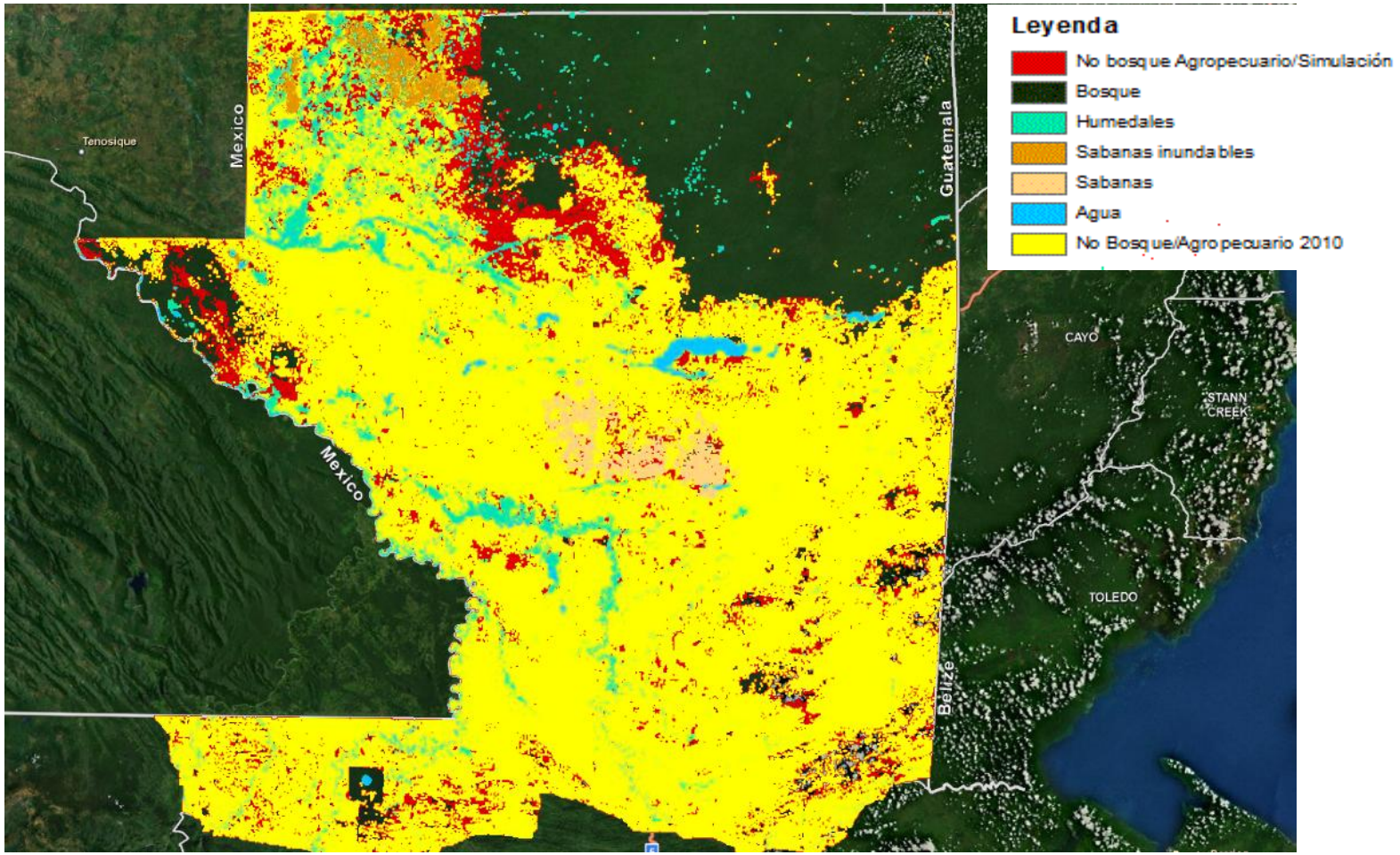

2021

# Deforestation projection



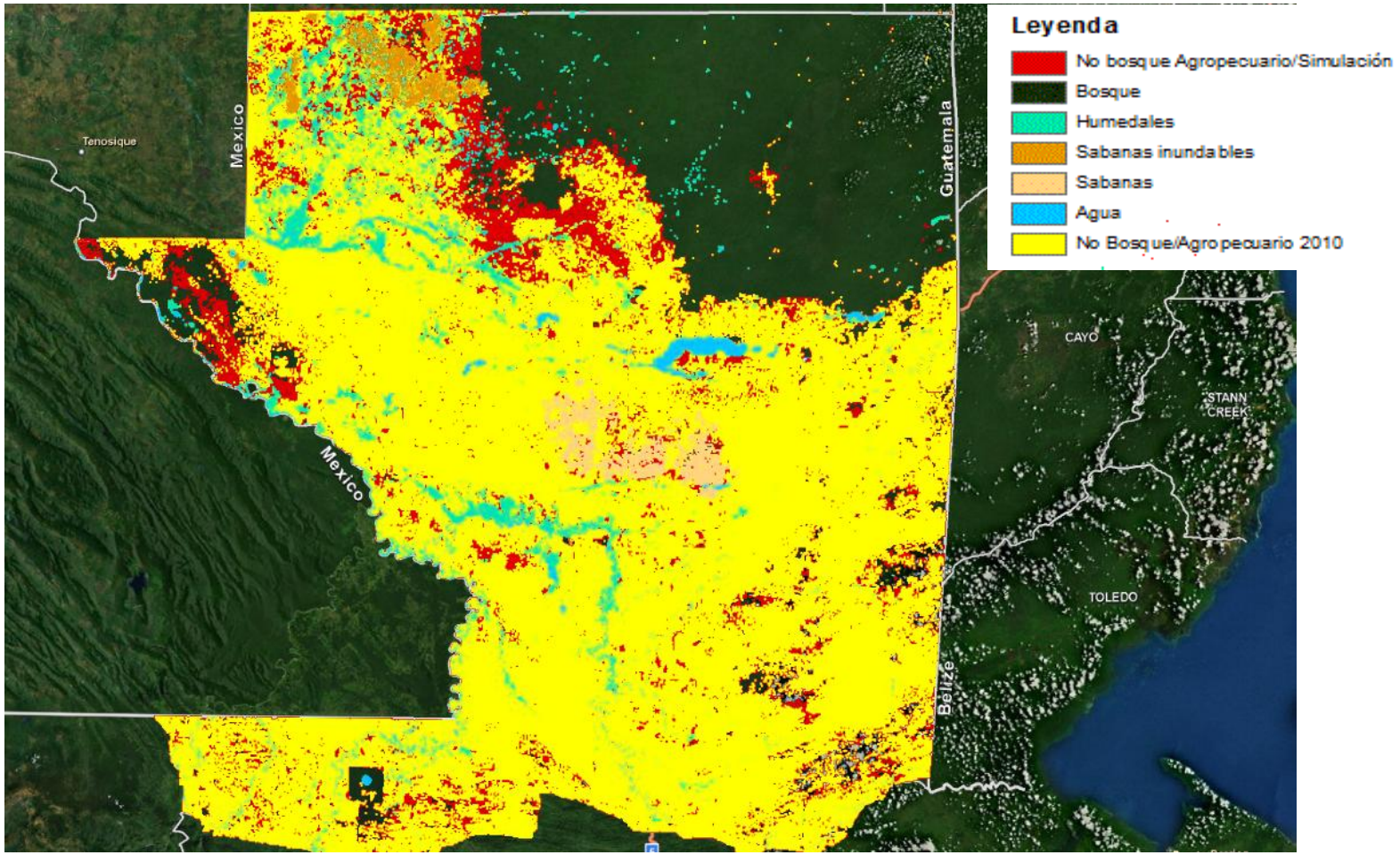

2022

# Deforestation projection



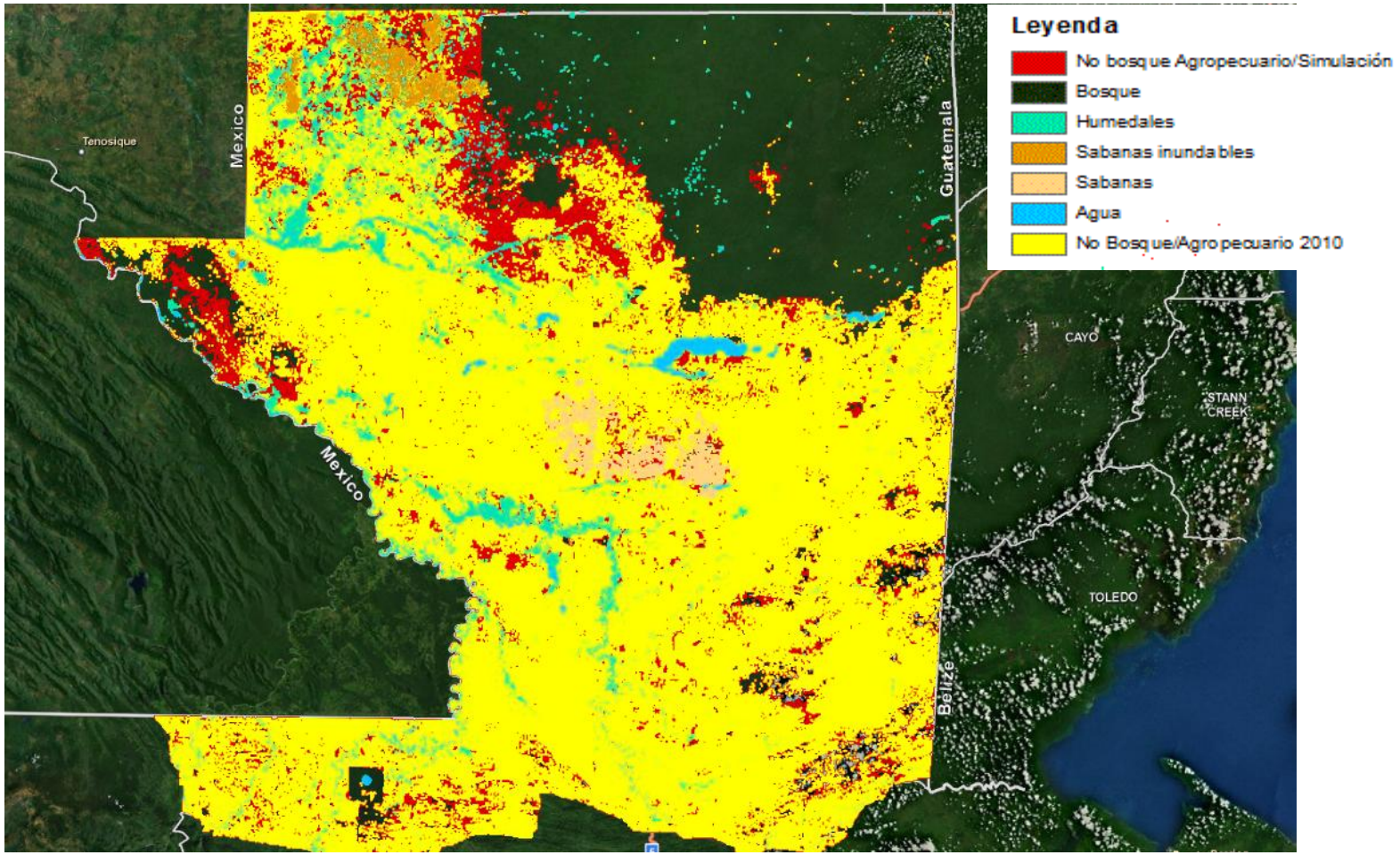

2023

# Deforestation projection



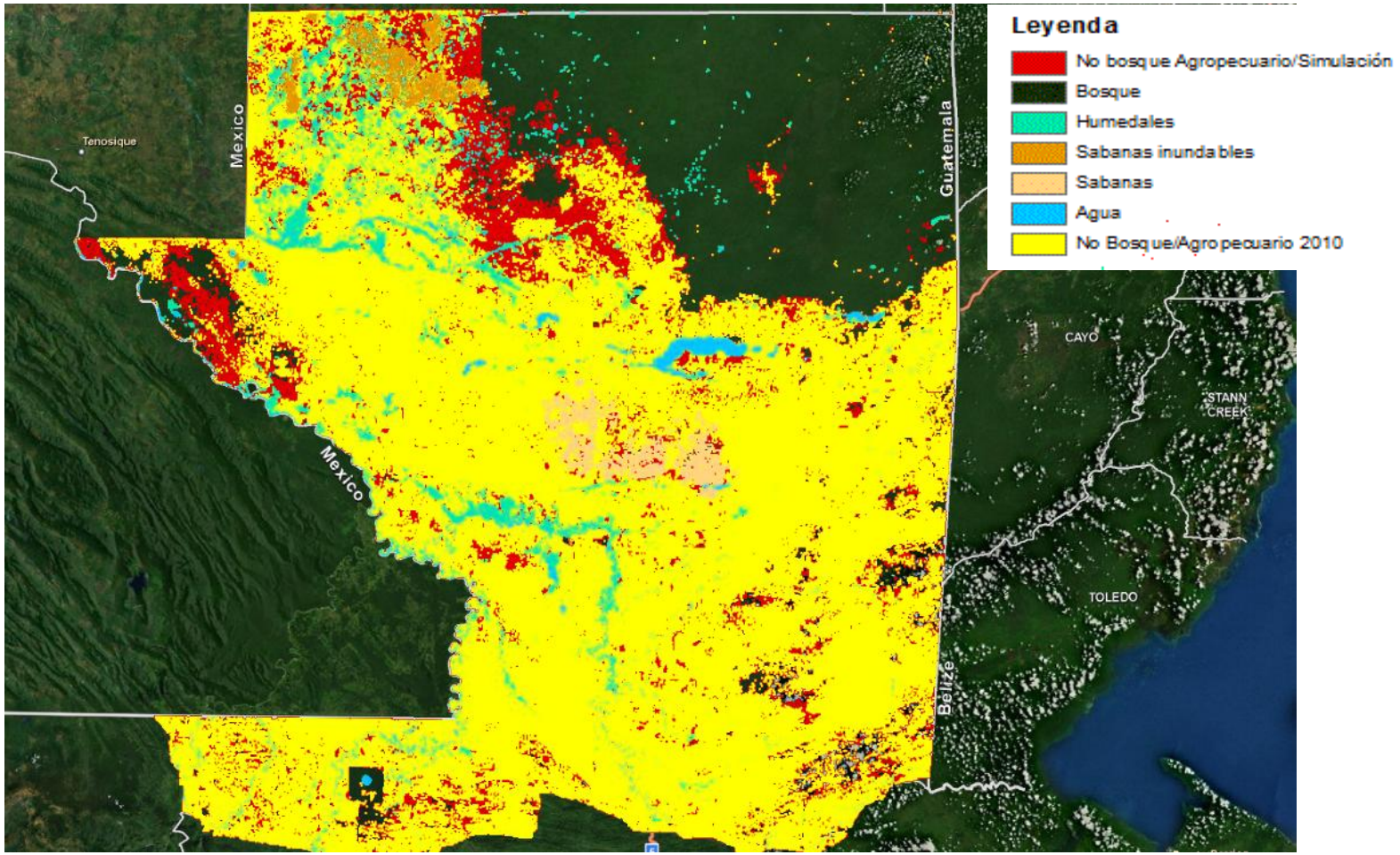

2024

# Deforestation projection



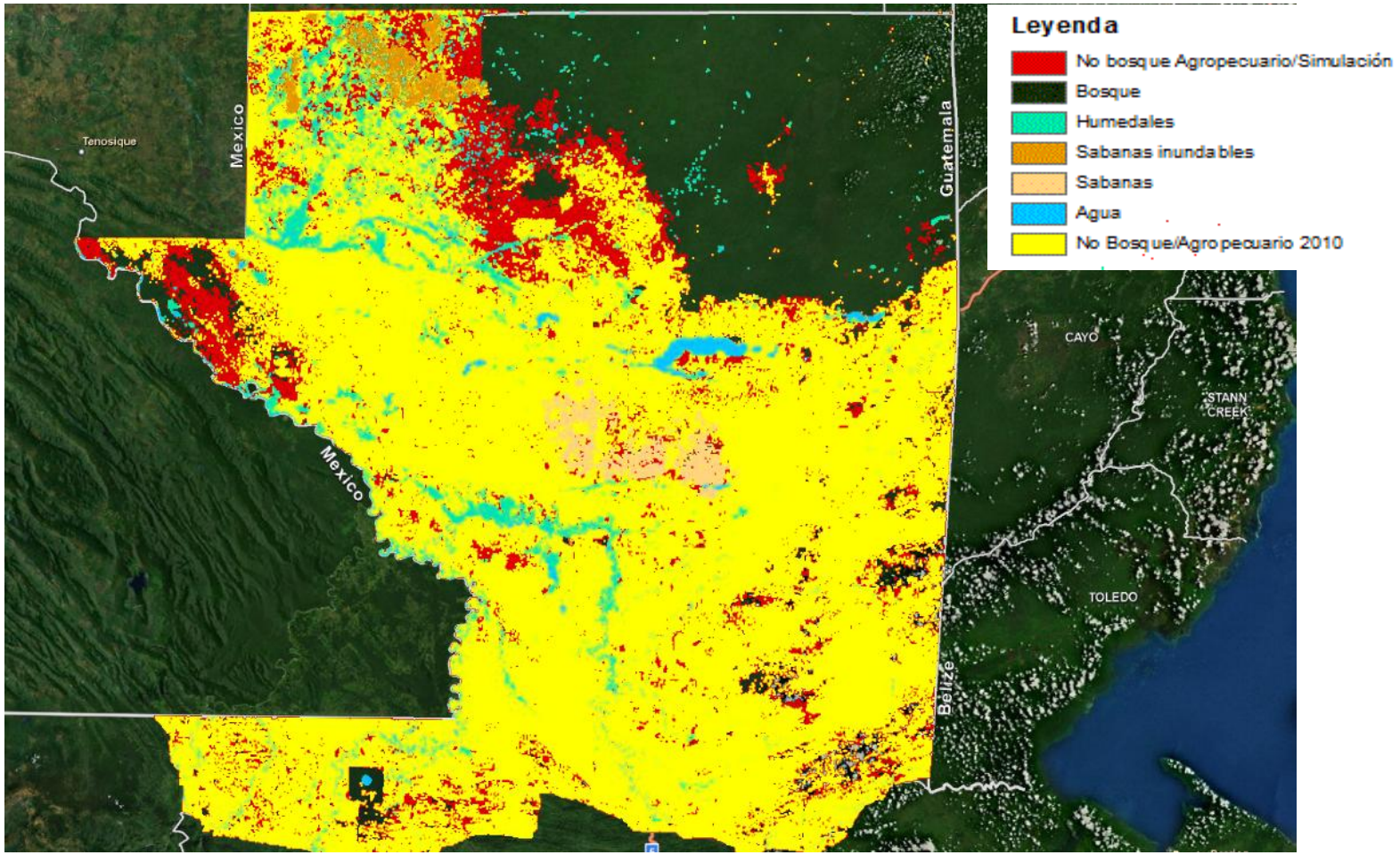

2025

# Deforestation projection



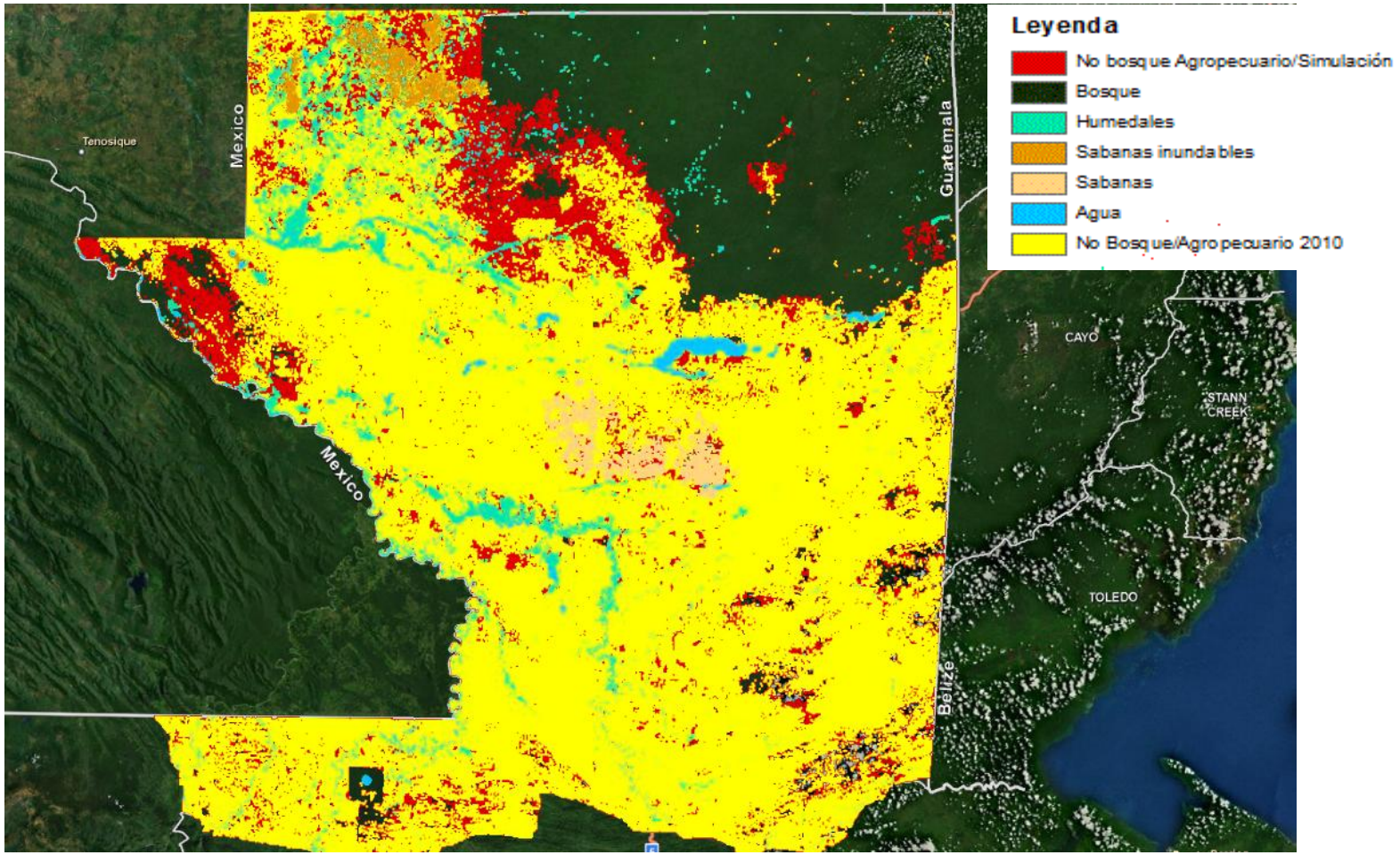

2026

# Deforestation projection



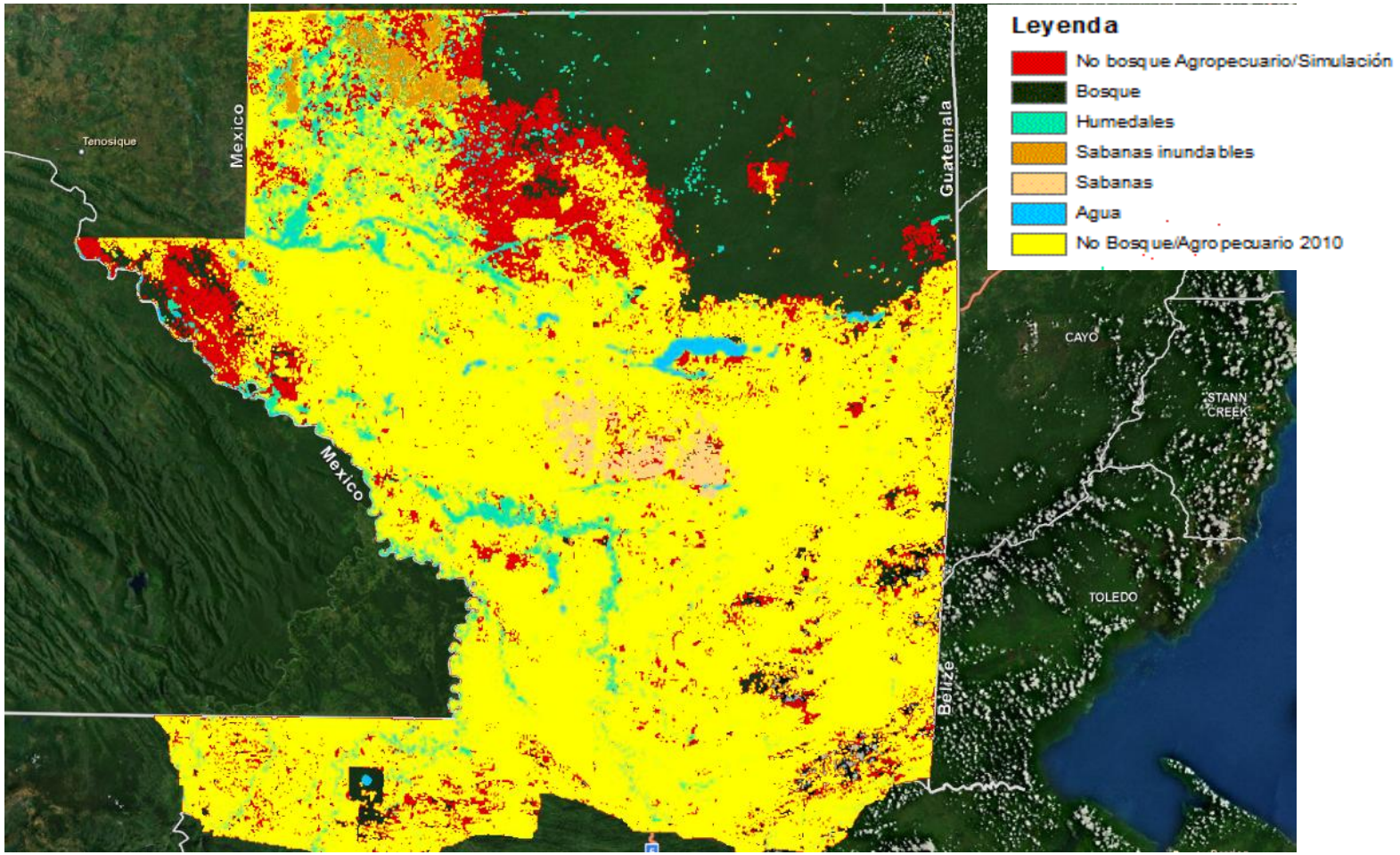

2027

# Deforestation projection



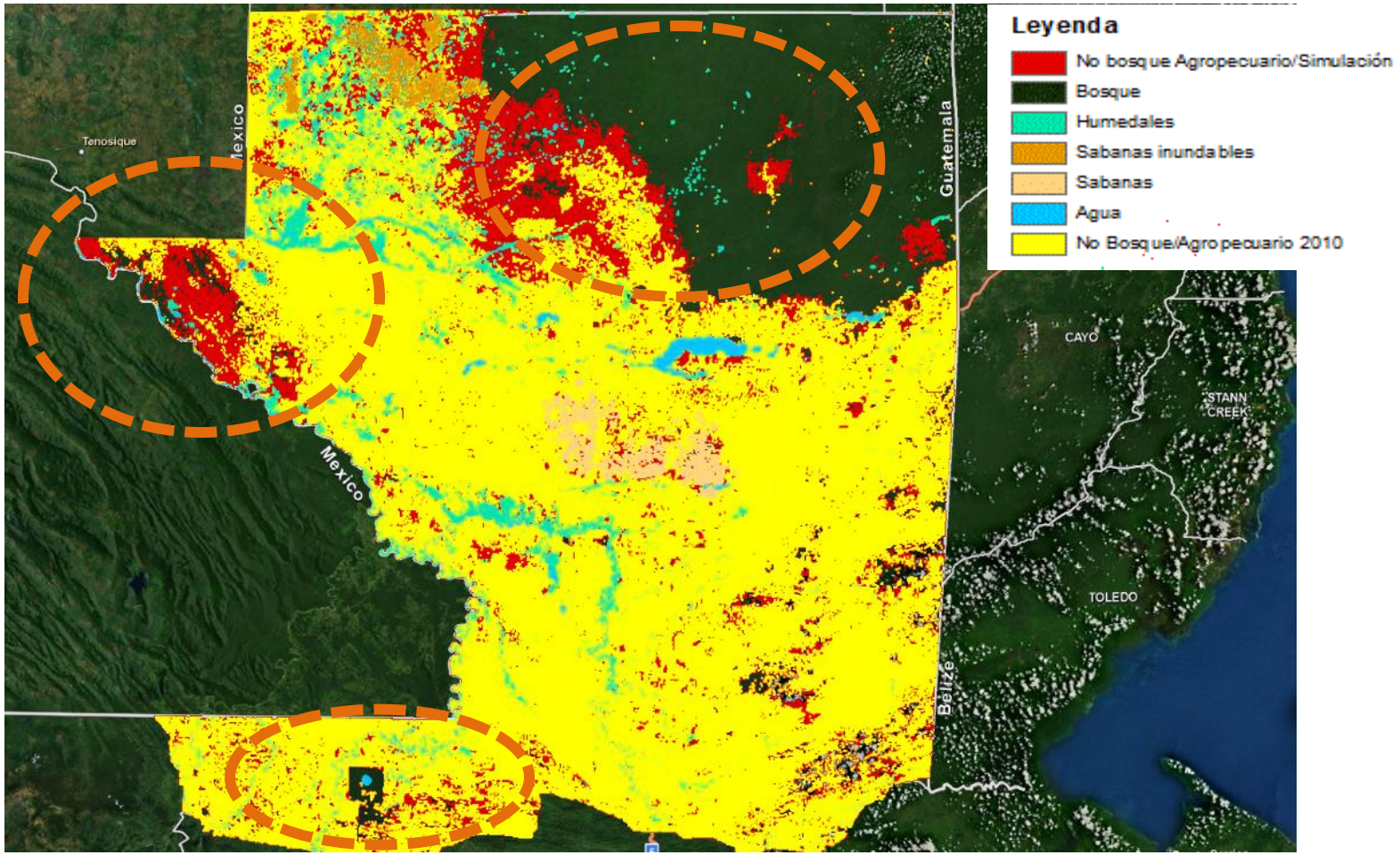

2028

# Deforestation projection



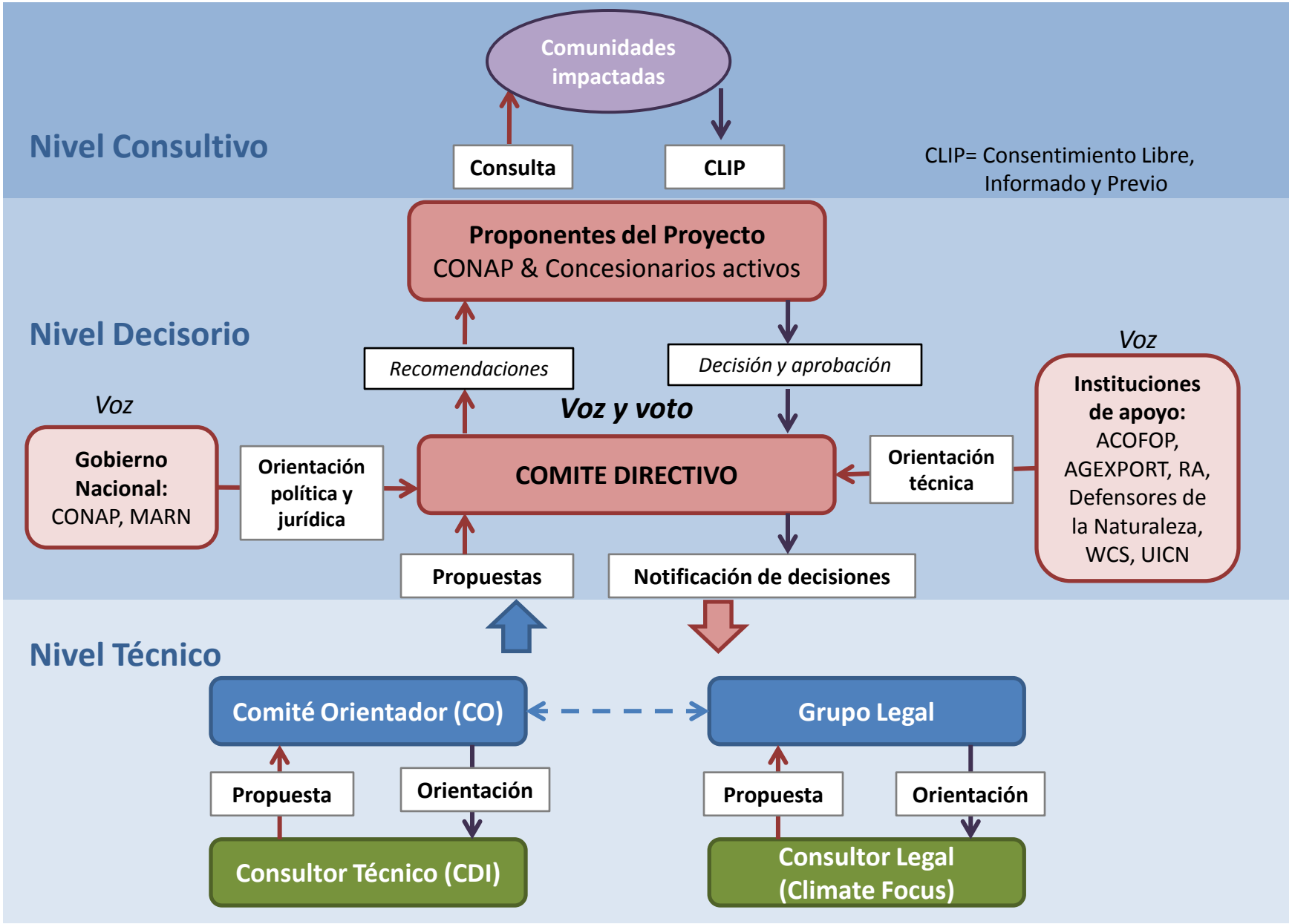

2029

# Deforestation projection




2030

# Gobernanza de la fase de diseño del Proyecto REDD+ en la Zona de Uso Múltiple de la Reserva de la Biosfera Maya

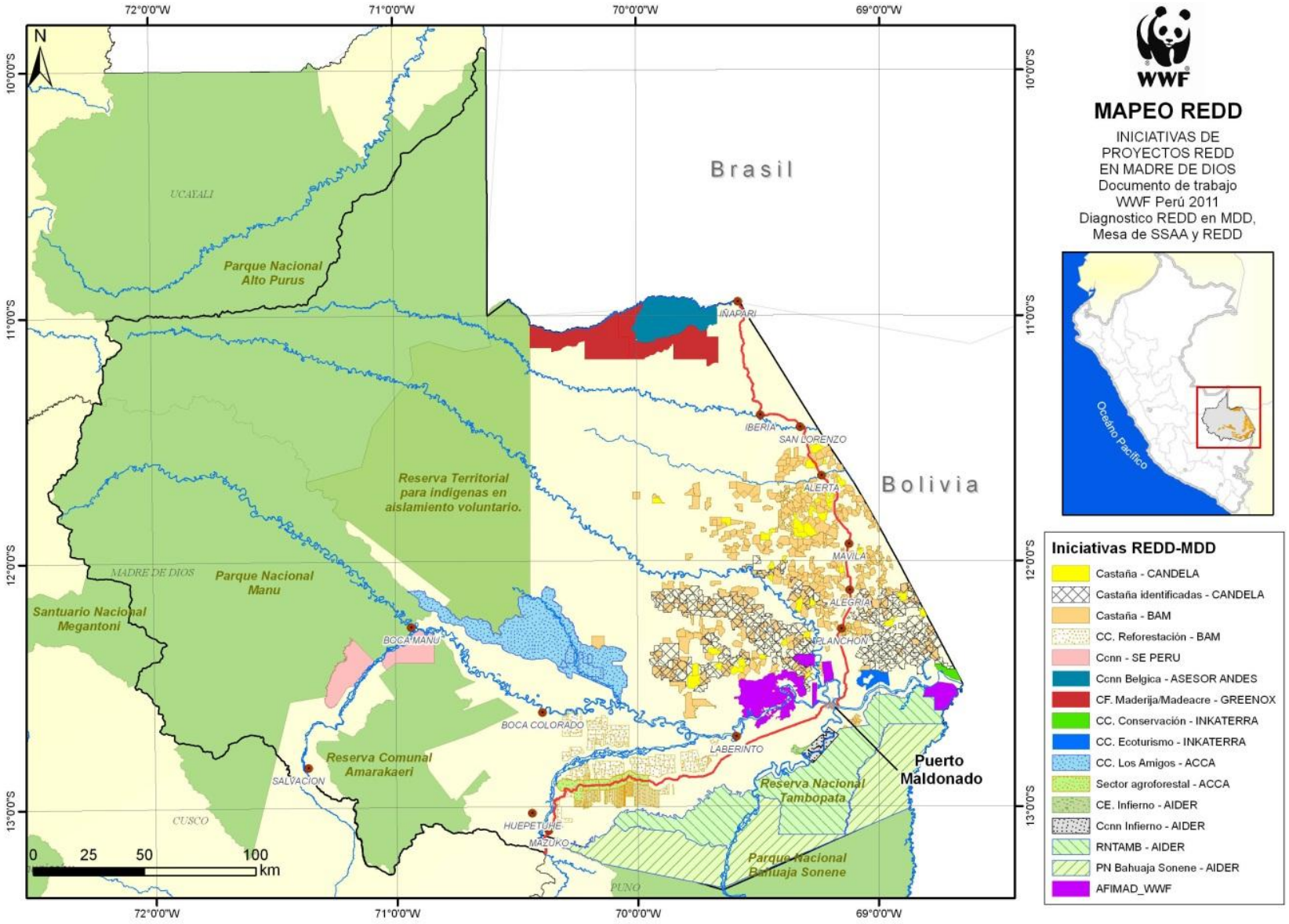


# Are we on track?

Not yet….

- Almost more project areas that threatened areas (Madre de Dios)

# Are we on track?



# Are we on track?

Not yet….

- Almost more project areas that threatened areas (Madre de Dios).
- Still weak leadership of governments.
- Faster decision-making could minimize the risk of future inconsistencies and conflicts.
- High-level policy & methodology guidance would be helpful.
- Critical issues are still not being addressed (under-performance, grandfathering, leakage, permanence, registry, …)

# Lessons learned

**TECHNICAL:**

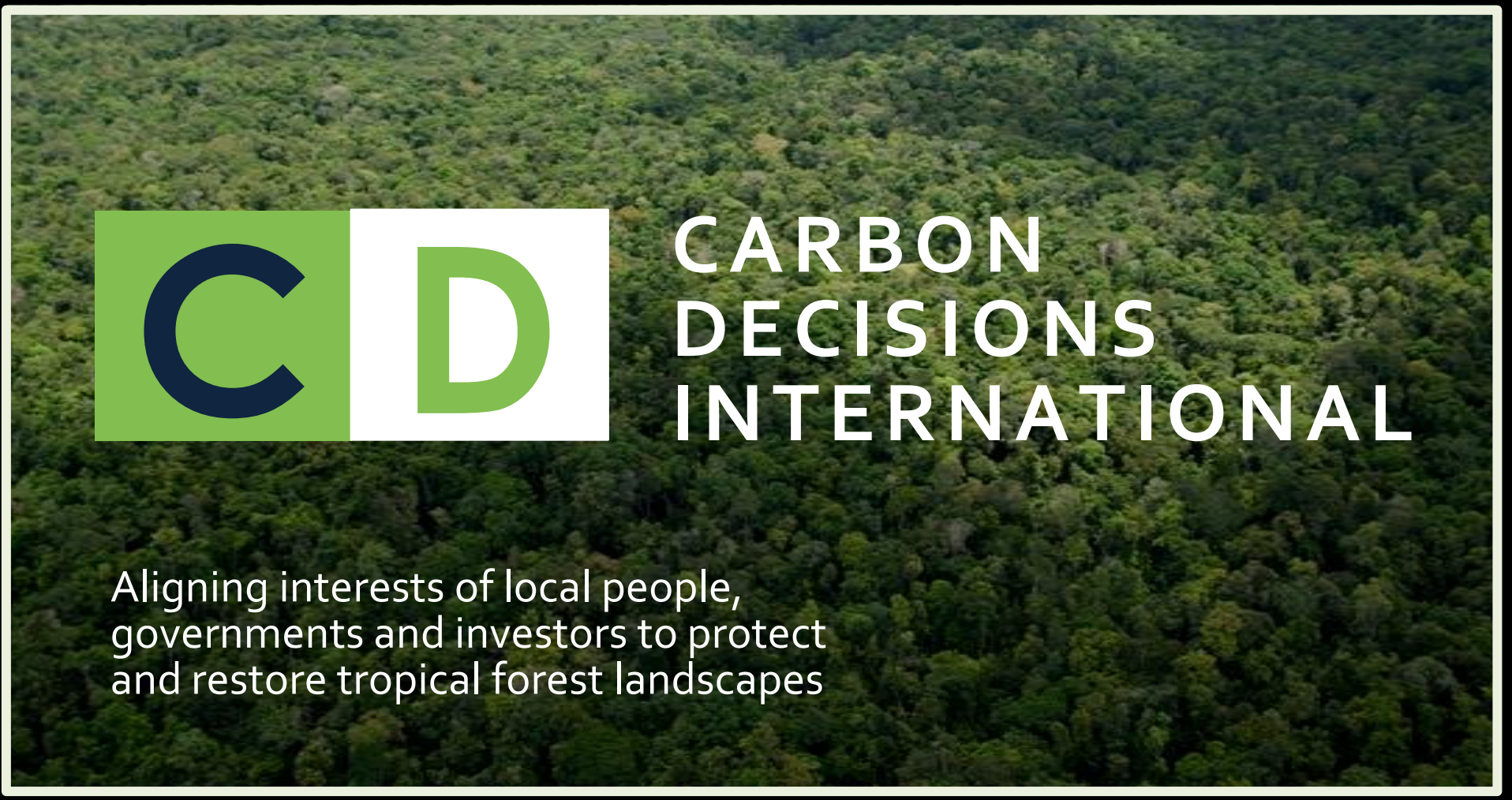
- Analysis of historical deforestation has delayed almost all projects. It is the most important piece for calibrating a credible projection.
- Documentation of past remote sensing work is usually absent or poor.
- Most of the effort is on data collection.
- Choice of data is determining the model output.
- Most commonly used method to project the rate is: average historic rate (because of insufficient data to do otherwise).
- Models can be validated with historical data, which helps selecting the most credible model.
- Developing RLs for regions encompassing several projects results in more credible RLs (more difficult for individual projects to bias the RL).

# Lessons learned

**INSTITUTIONAL – POLITICAL:**

- Speed problem: "the smaller the faster".
- Governments are slowly understanding that some kind of nesting will be hard to avoid.
- Too many donors are focusing on RELs and MRV without coordination.
- Within governments, climate change teams and forest inventory teams are still learning how to work together.
- A change in government teams often implies one year delay or starting over again.
- Organizing people and institutions takes time, more time than the private sector can afford.
- Insufficient thinking on how to reduce deforestation.

# ¡Thank you for your attention!

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