

Using land inequality to inform restoration in the Brazilian Caatinga

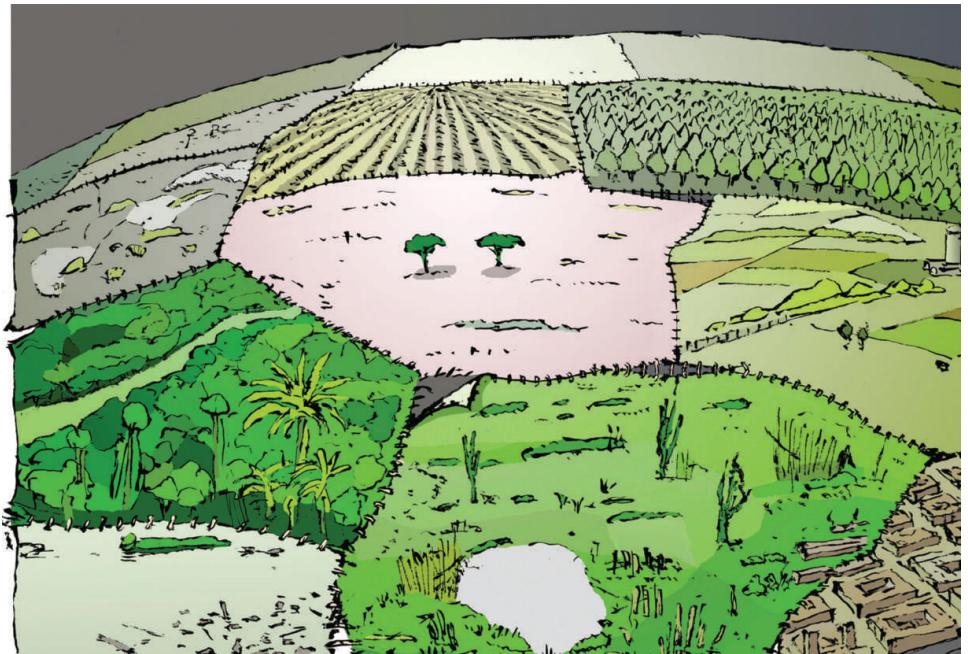
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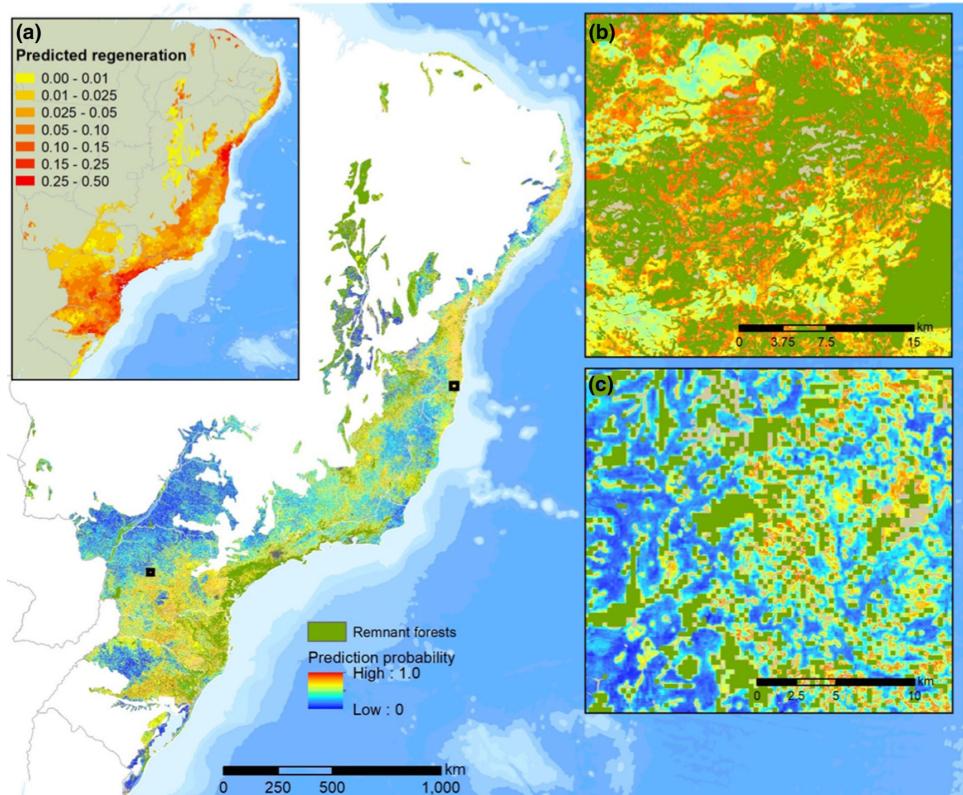
Universidade Federal de Pernambuco - Brazil

Contents of this talk

- A critical appraisal of apolitical restoration
- Land inequality and restoration
- Restoration to address inequality



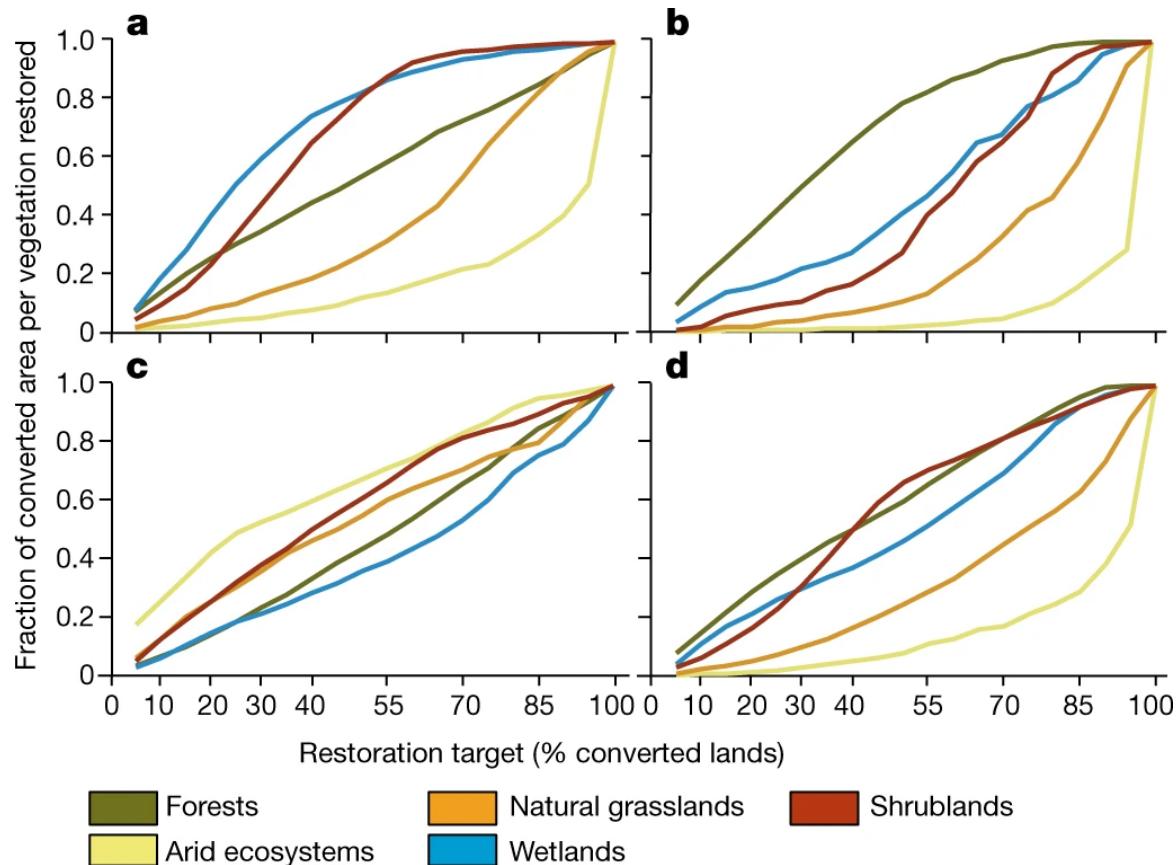
Modeling priorities for restoration



- Spatially explicit
- Systematic
- Multi-criteria
- Lack people's dimensions

Crouzelles et al 2018

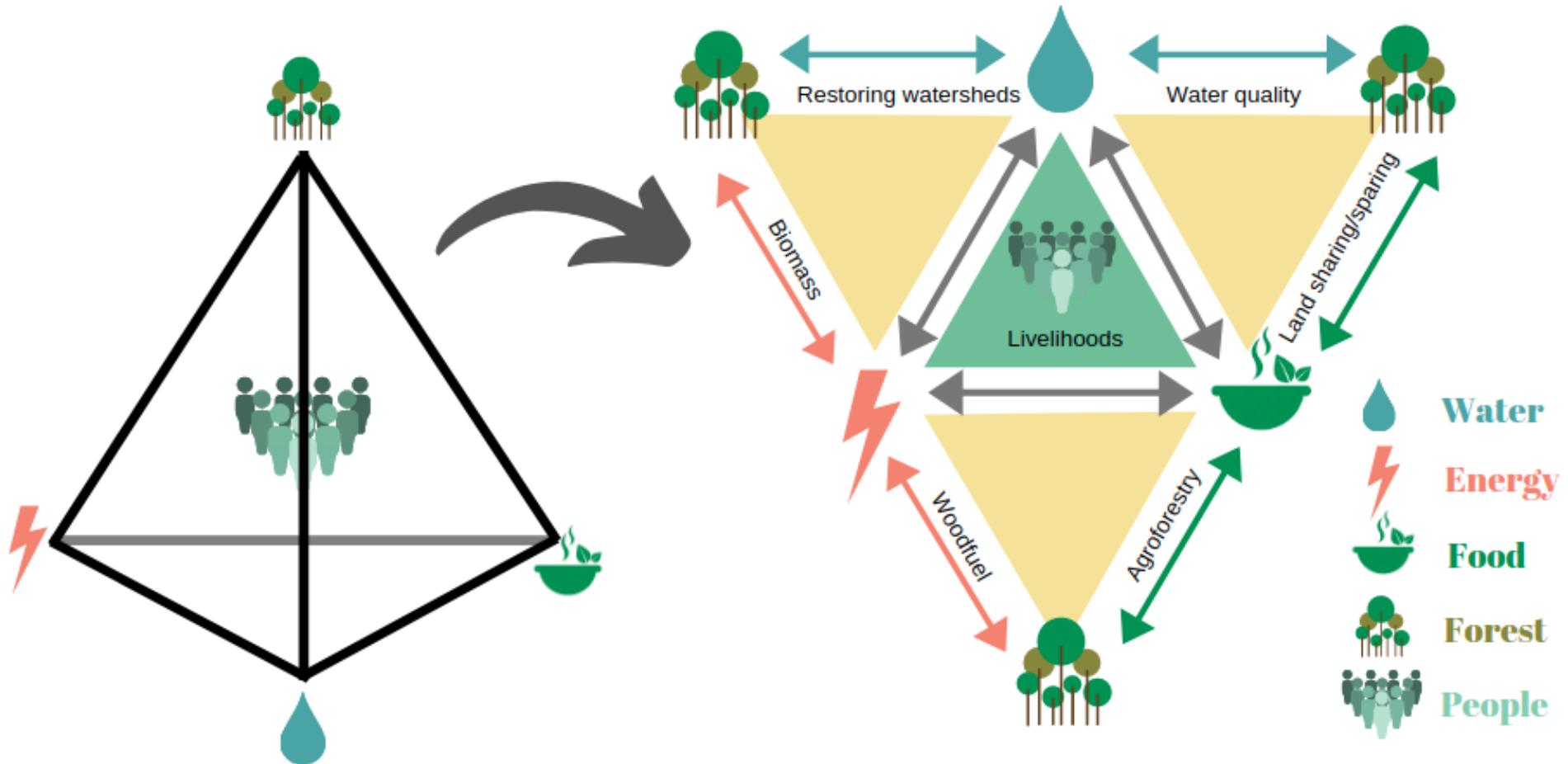
Modeling priorities for restoration



- Imagined scenarios
- Cost-effectiveness
- Benefits
- Reduced people's dimensions

Strassburg et al 2020

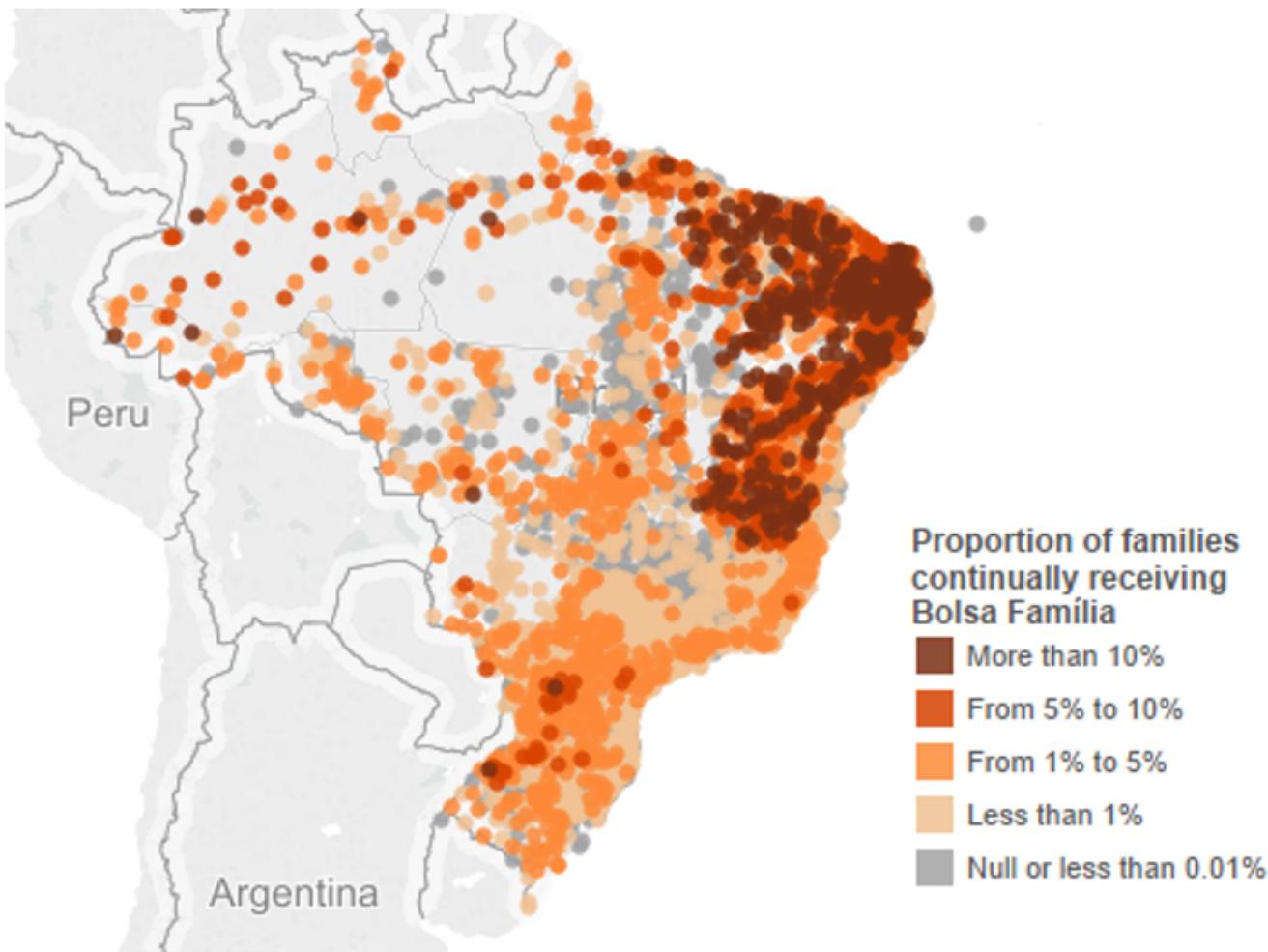
Against apolitical restoration



Melo et al 2021

Our study

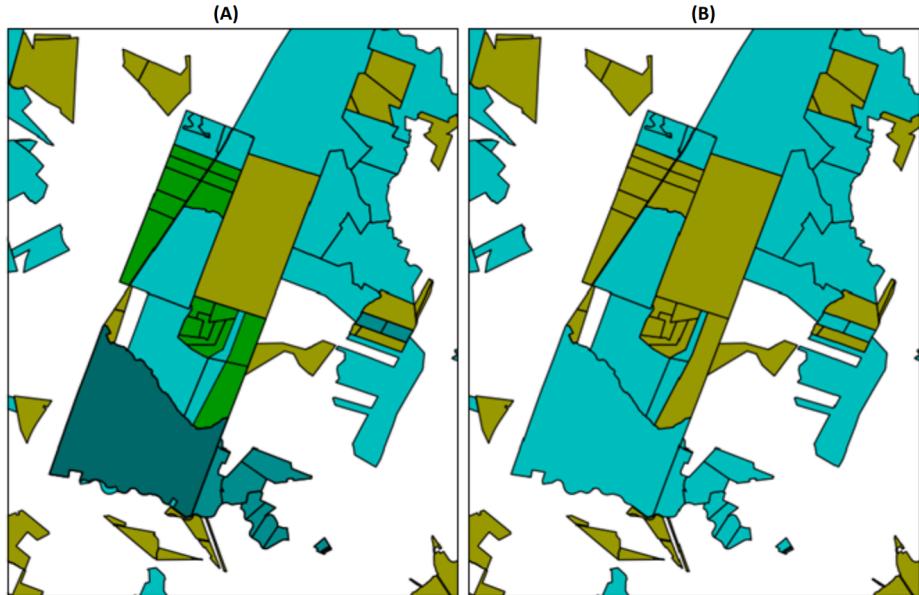
Context



- Brazil has a rather advanced restoration movement
- Different Biome awareness
- Rural poverty + forest poverty
- Severe **land inequality**

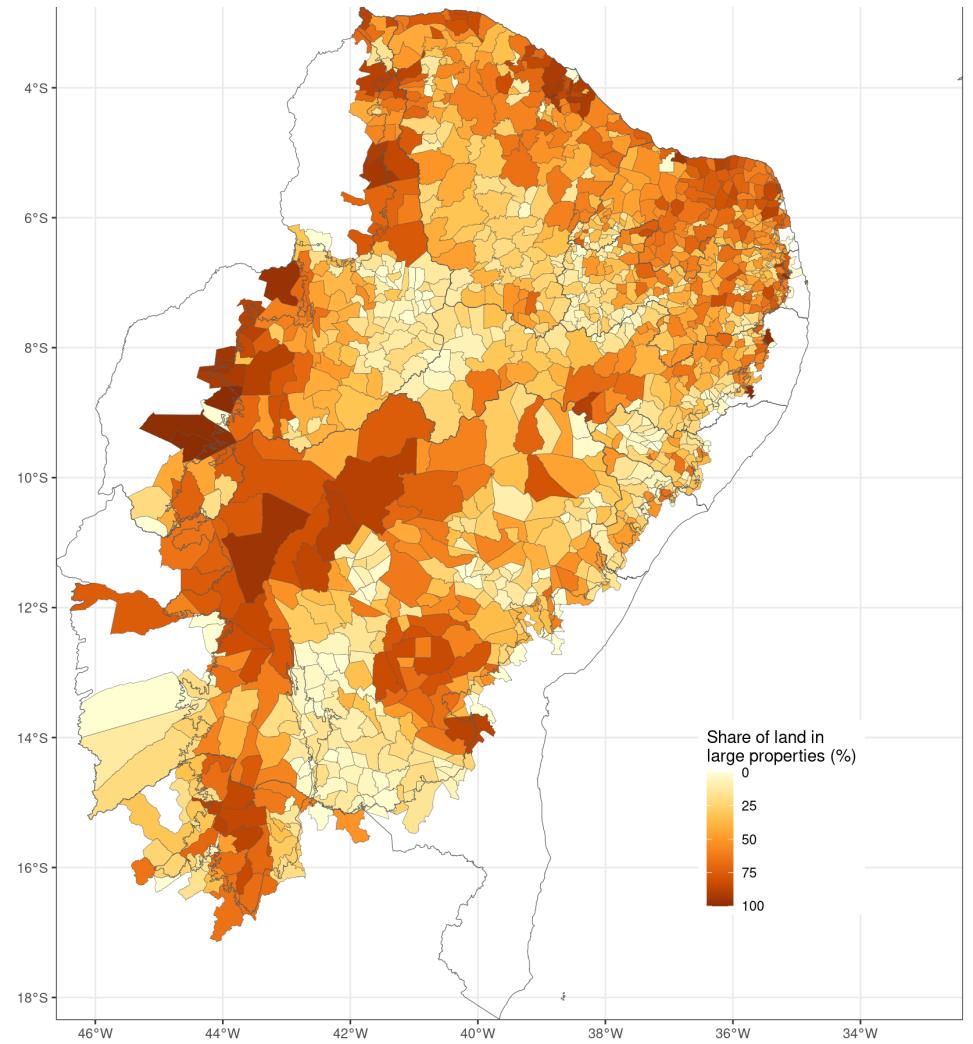
Methods

- Information on forest cover
(MapBiomas.org)
- Land tenure database
(imaglora.org)
- Brazilian Forest Code
 - Calculate vegetation deficits per property
 - Small vs large landowners

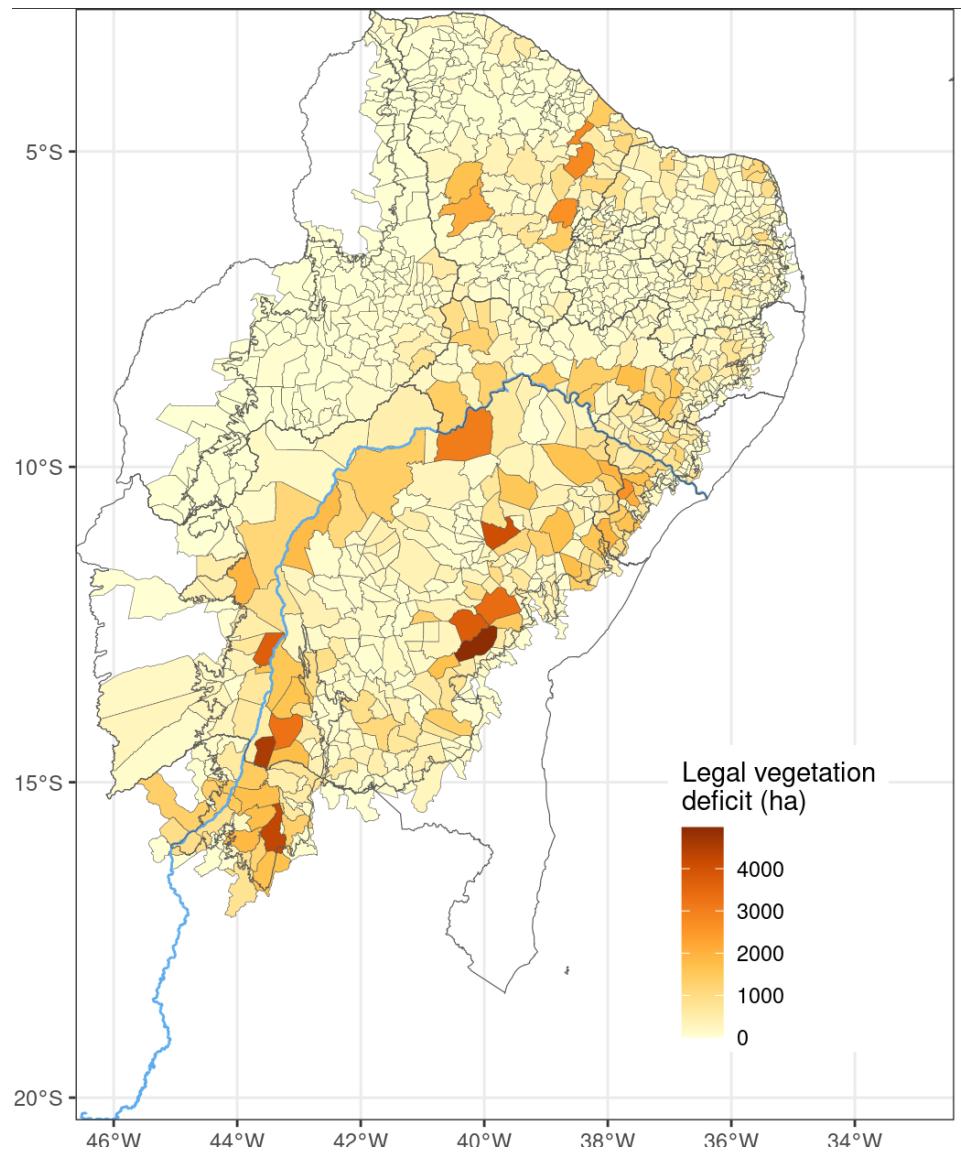


Land share in Caatinga municipalities

- ~ 1 million registered properties in 1204 municipalities
 - 97.8% Small properties
 - 17.9 Mha
 - 51% forested
 - 2.2% Large properties
 - 15.2 Mha
 - 69% forested



Distribution of legal vegetation deficit

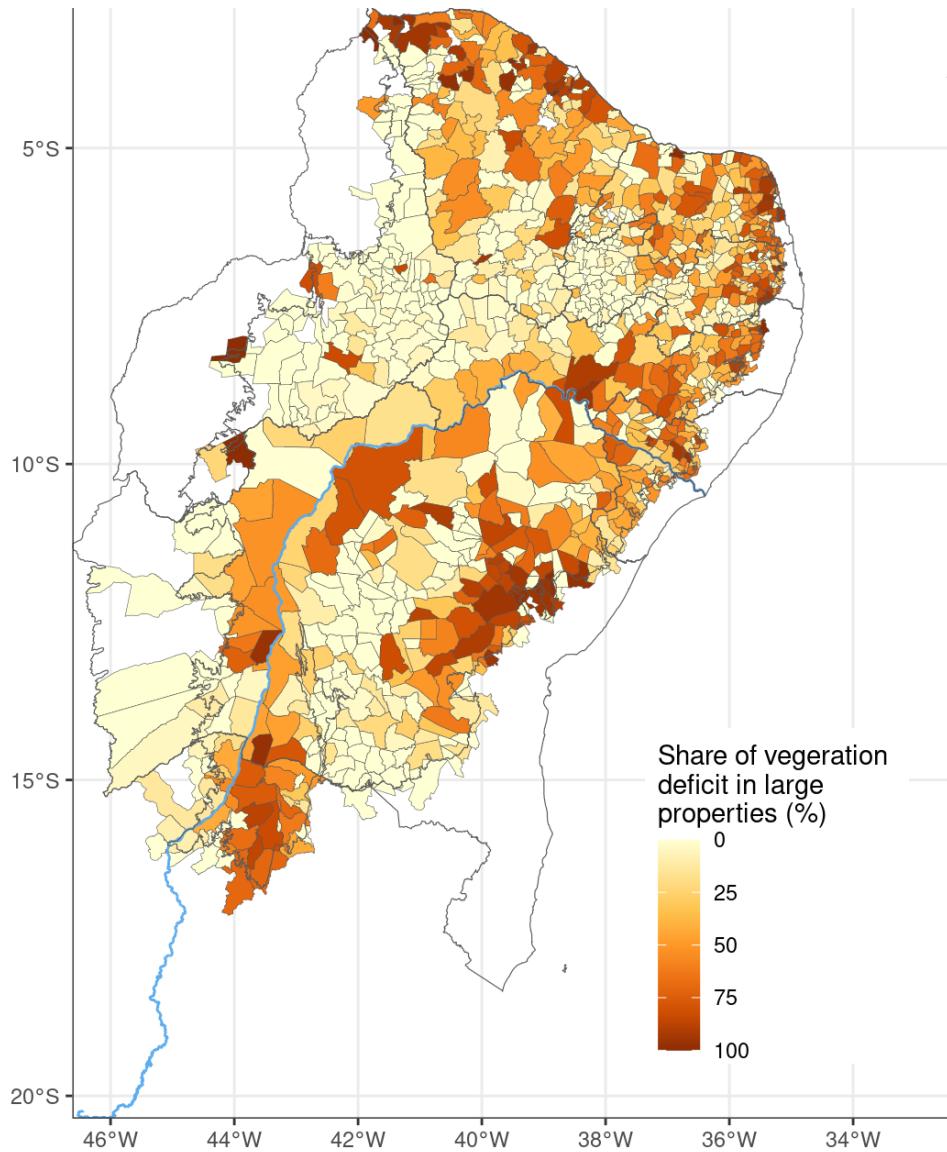


- Spatially clumped
- Following agribusiness areas

Share of vegetation deficit

Type of landowner	N of properties	Legal Deficit (ha)
Large	2,986	139,644
Small	141,144	143,501

Share of vegetation deficit



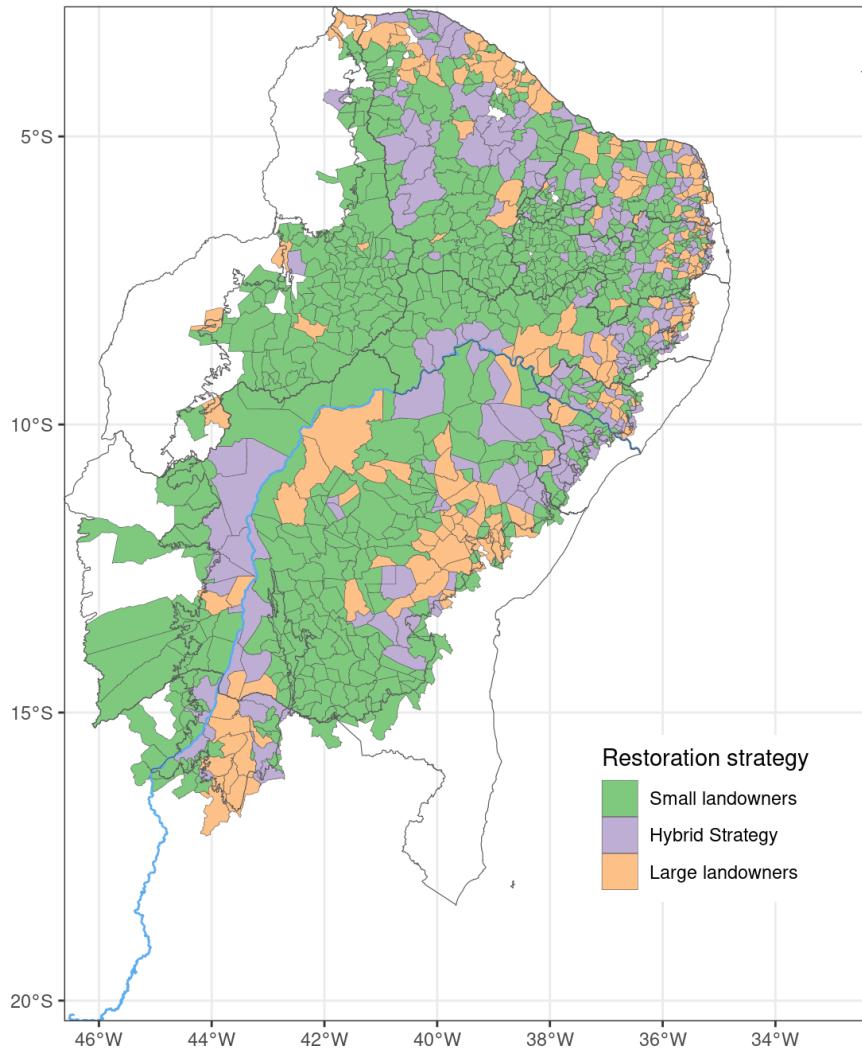
- Large holders
 - Spatially clumped (coast and main river)
 - Following agribusiness areas
- Small holders
 - Driest regions
 - Familiar agriculture

Adapated strategies

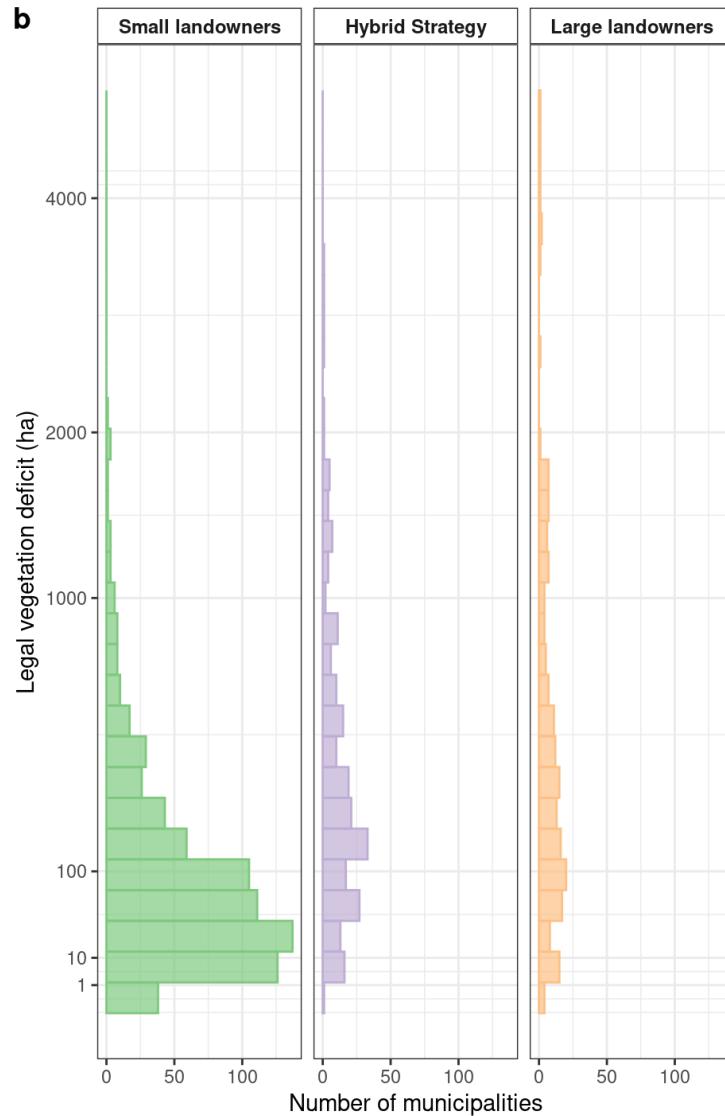
Type of prevailing deficit	Restoration strategy
Large holders	Active restoration; legal compliance; restoration supply chain
Small holders	Agroforestry; biocultural restoration
Hybrid	Context dependent combination of all strategies

Spatialization of restoration strategies

a



b



Restoration must not reproduce land inequality

- Smallholders
 - ~1ha
 - small-scale farms
- Scale up agroforestry
- Largeholders
 - ~40ha
 - Intensive land use
- Impulse restoration supply chain

What's next?

- Include sensible social information
- Account for land inequality
- Avoid reproducing injustice
- Balance



Marinaho et al 2023

Acknowledgements



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Thank you

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