

# Land-use Change and Forest Fragmentation in the Alto Paraná Atlantic Forest of South America between 1985 and 2021

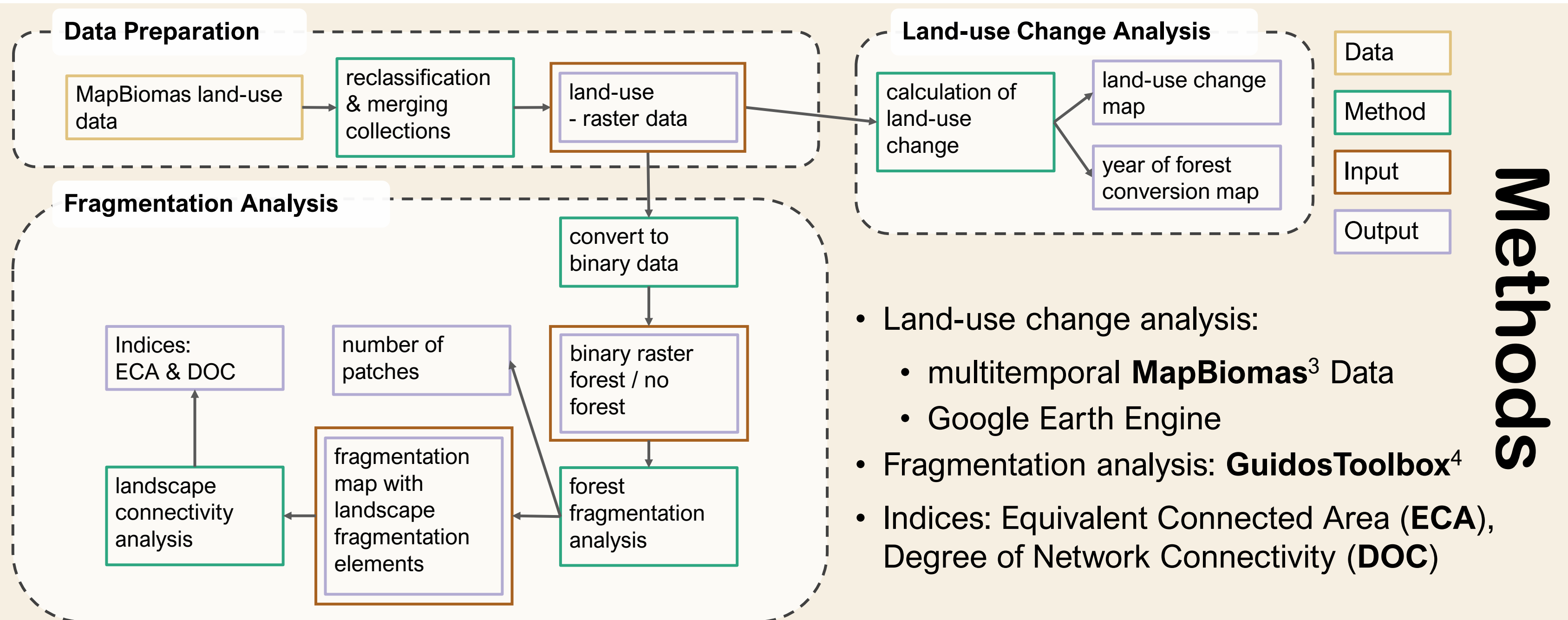
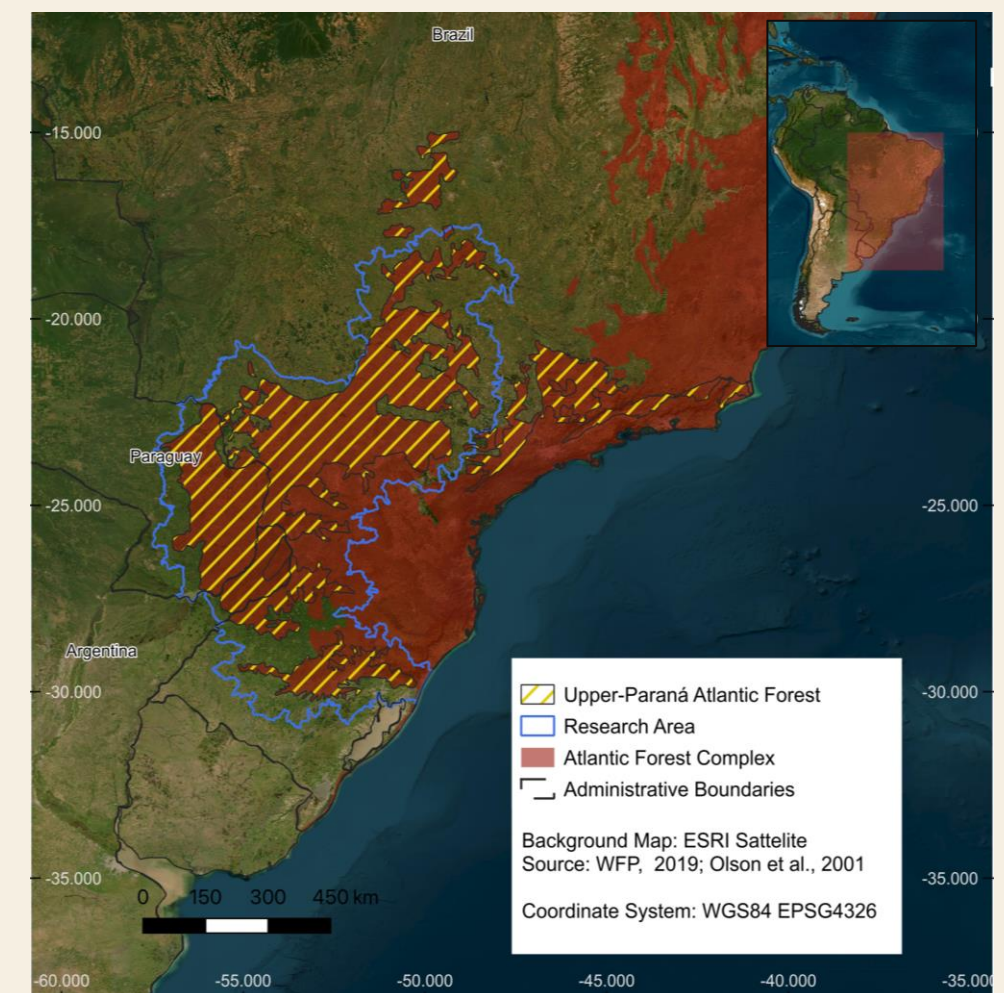
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## Background

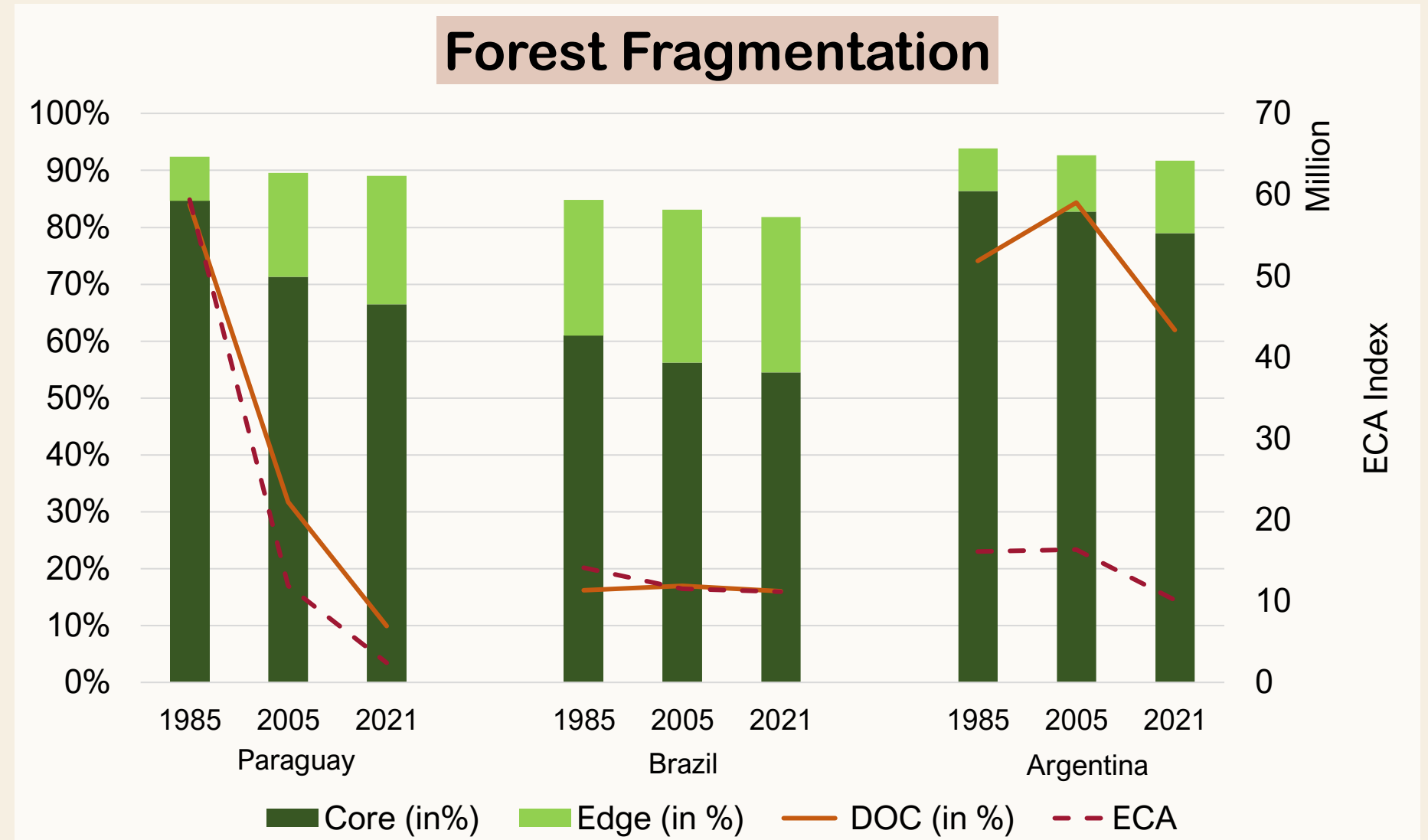
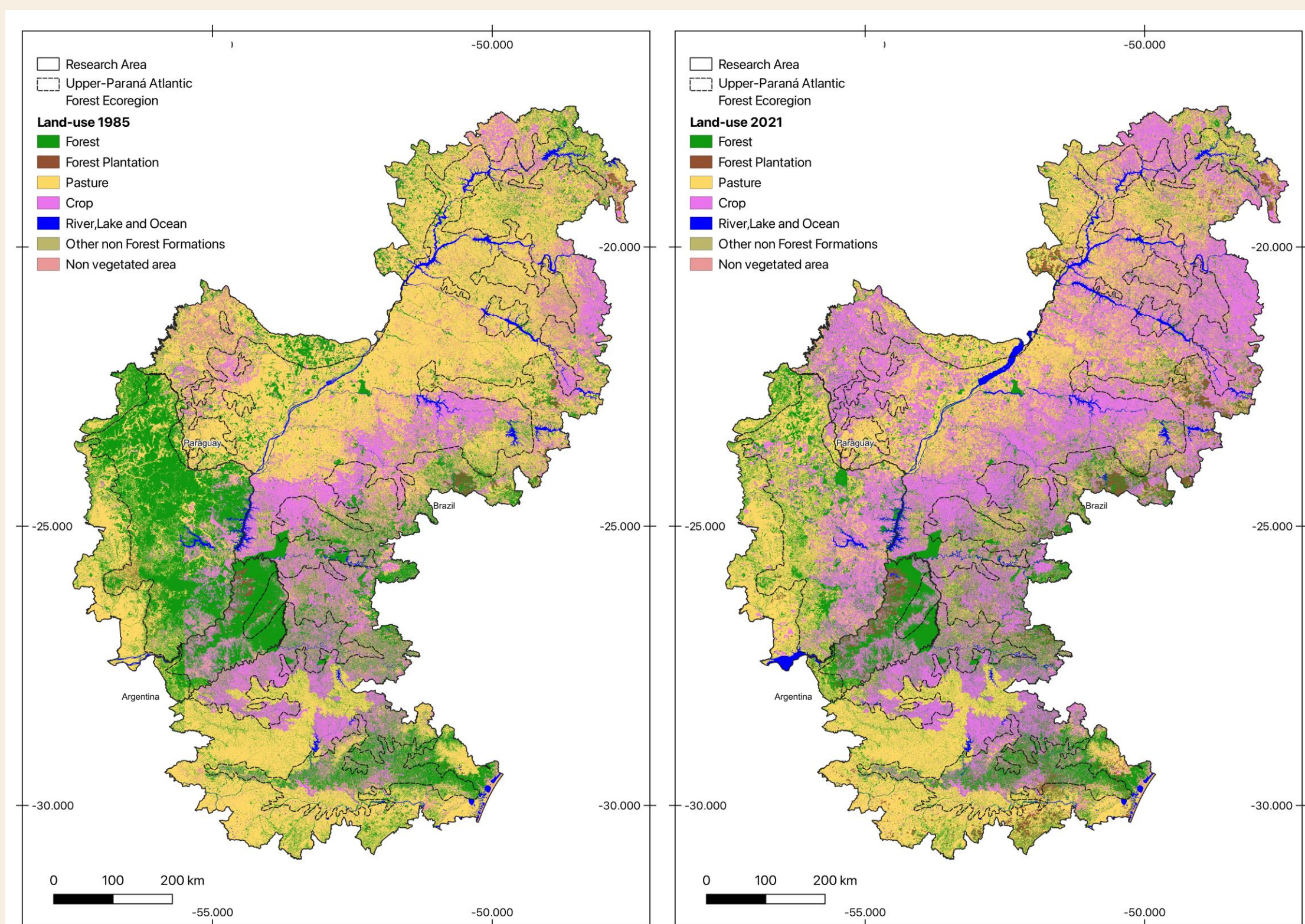
- The Alto Parana Paraná Atlantic Forest is a **shared ecoregion** between Brazil, Argentina and Paraguay.
- The border region shows high **land system asymmetries**<sup>1</sup>.
- It experienced a high **biodiversity lost** due to land-use changes and deforestation<sup>2</sup>.

**Goal:** Develop a **multitemporal, cross-country** approach to better understand land-use changes and forest fragmentation processes



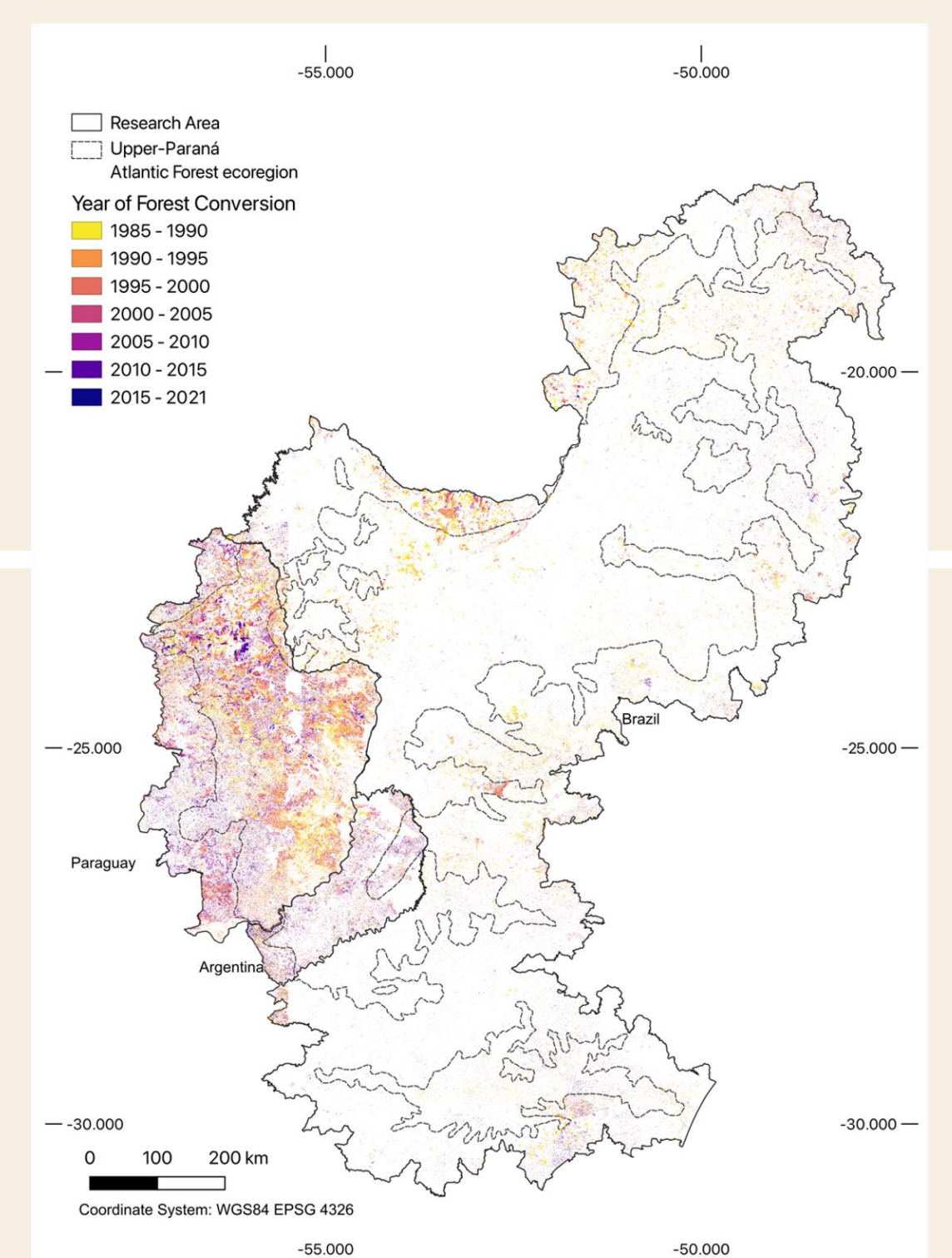
## Results

### Land-use in 1985 and 2021



- Forest loss 1985 to 2021  
Brazil: **10,4%**,  
Argentina: **17,9%**,  
Paraguay: **55,9%**
- Number of forest **patches increased** until 2021
- Most land-use change: **forest to pasture**

### Year of Forest Conversion



## Discussion

**Different trends** of land-use change trajectories per country due to country-specific **environmental legislation and development preferences**.

- Brazil: deforested before 1985, pasture to cropland conversion
- Paraguay: deforestation for pasture expansion, afterwards cropland conversion
- Argentina: deforestation for forest plantations and cropland

➔ **Necessity for a joint conservation alliance** for the whole Alto Paraná Atlantic Forest ecoregion

### Contact

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### References

<sup>1</sup>Piquer-Rodríguez, et al. (2021). Land systems' asymmetries across transnational ecoregions in South America. *Sustainability Science*, 16, 1519–1538.

<sup>2</sup>Fundación Vida Silvestre Argentina and WWF (2017). State of the Atlantic Forest. Three countries, 148 million people, one of the richest forest on Earth.

<sup>3</sup>MapBiomass Trinational Atlantic Forest (2024). [dataset].

<sup>4</sup>Vogt P. and Riitters K. (2017). GuidosToolbox: universal digital image object analysis. *European Journal of Remote Sensing*, 50(1), 352–361.

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MHEI page



Story map



Poster