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Geospatial impact evaluation of the KfW and the AFD conservation portfolio on forest cover loss

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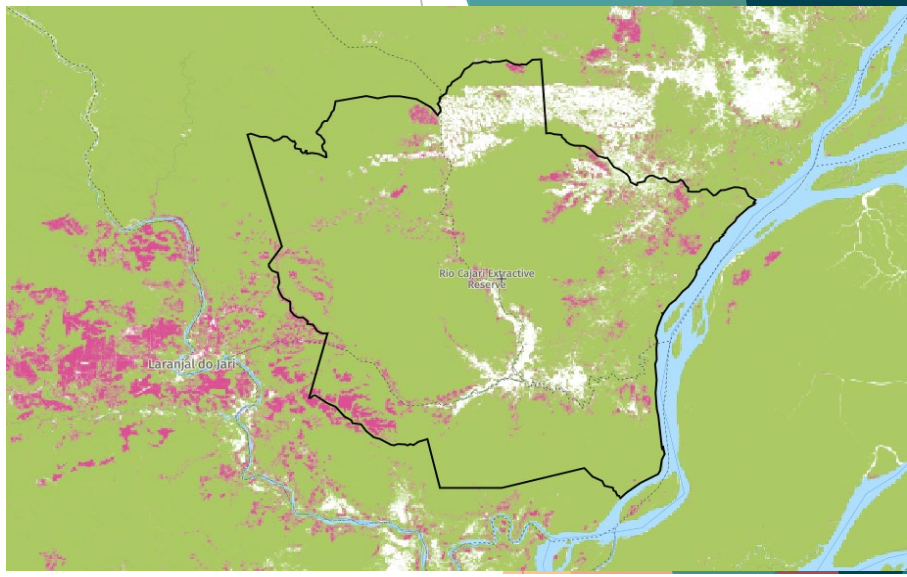
KFW AFD IRD giz

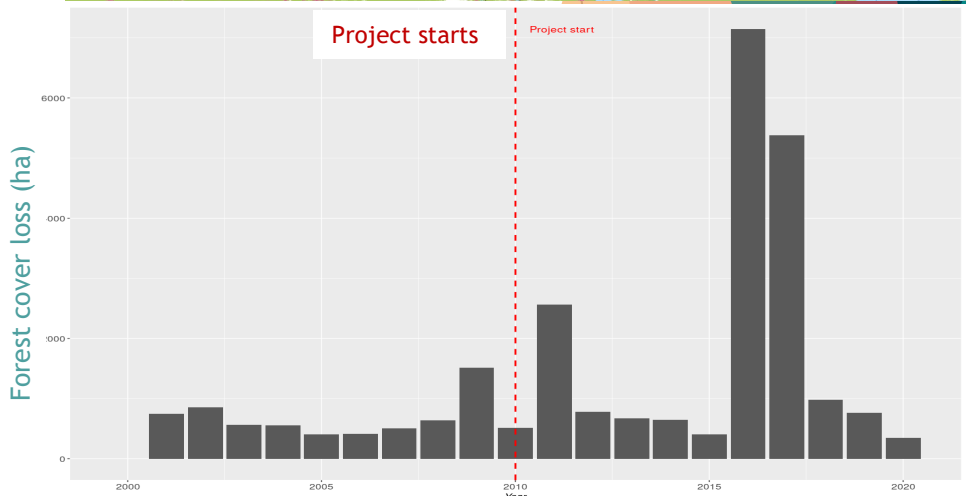
Monitoring data may lead to wrong conclusion about effectiveness of forest protection measures

- **KfW** supports more than 900 protected areas worldwide, mainly in Latin America and Africa. Germany accounts for about 25% of worldwide ODA for biodiversity
- During the 2000-2022 period, **AFD** supported more than 250 protected areas, in at least 45 countries, mainly in Africa (~70% of PAs)

- **Problem:** Monitoring data often suggests that we are not successfully reducing forest cover loss
- **Implications:** Low trust in forest cover protection measures, fewer investments (trust issue) → higher global CO2 emissions
- **Research Question**

How effective is the engagement of development banks in protected areas on forest cover loss?





Databases & Method

Protected Areas Databases

- Forest data from the Global Forest Watch (Hansen et. al, 2013) accessed via [MAPME R Package]

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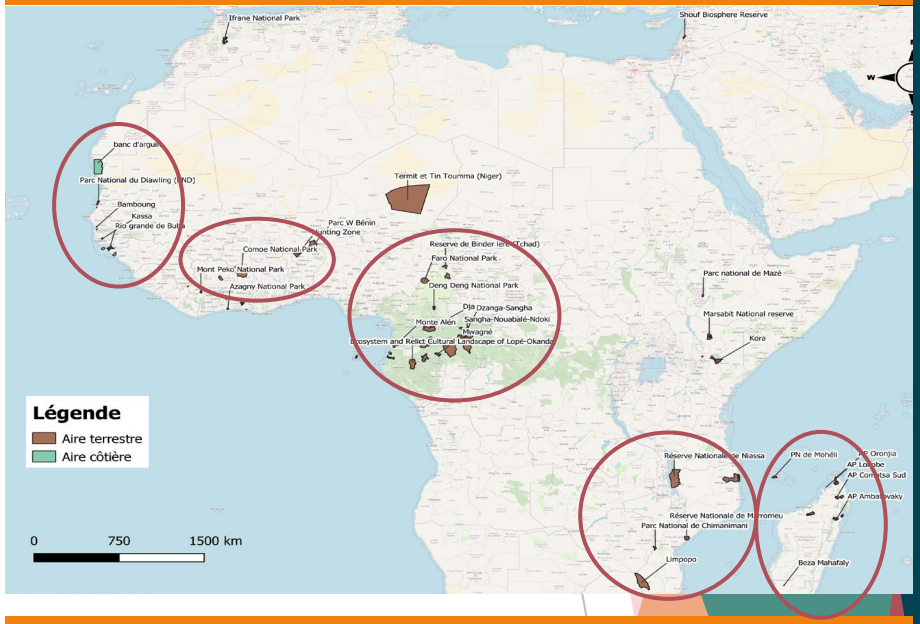
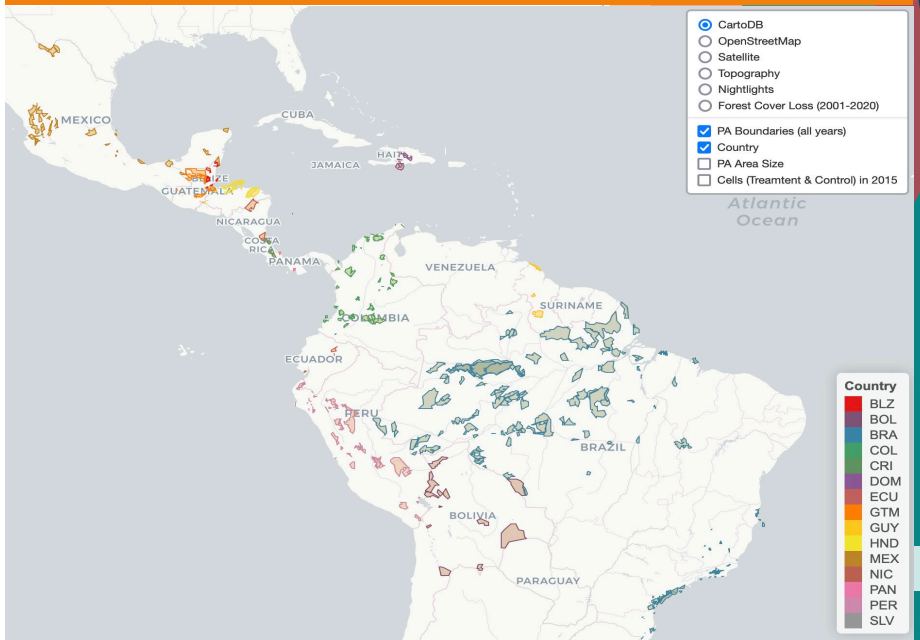
- Georeference supported PAs available in the WDPA database, from past and ongoing portfolio
  - AFD: 72 PAs in Africa
  - KfW: ~400 PAs in Latin America

- **Elaboration of large-scale (geo-) processing routines for 60+ Scientific Datasets:** Conservation related data-sets, geography, economy, climate etc.

Non-marine PA founded by the AFD, Africa, 2000-2022

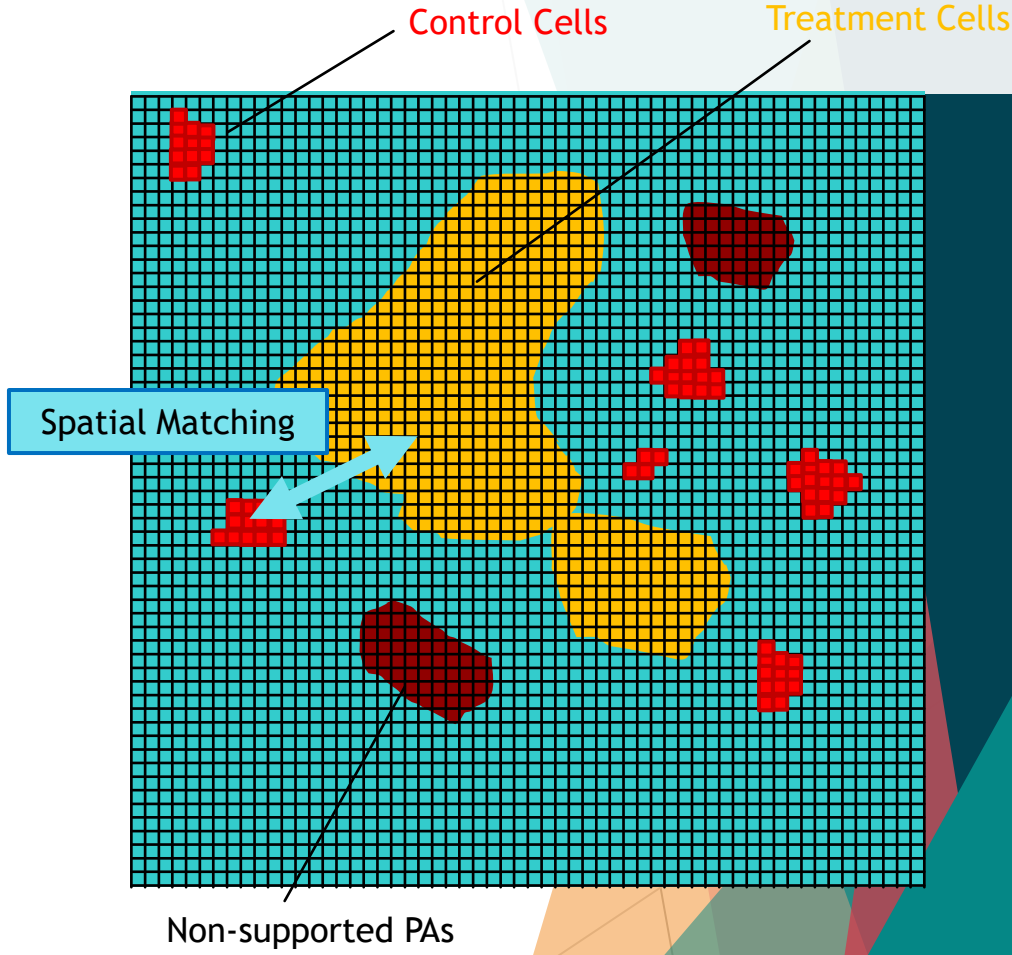


Non-marine PA founded by the KfW, Latin America, 2000-2021

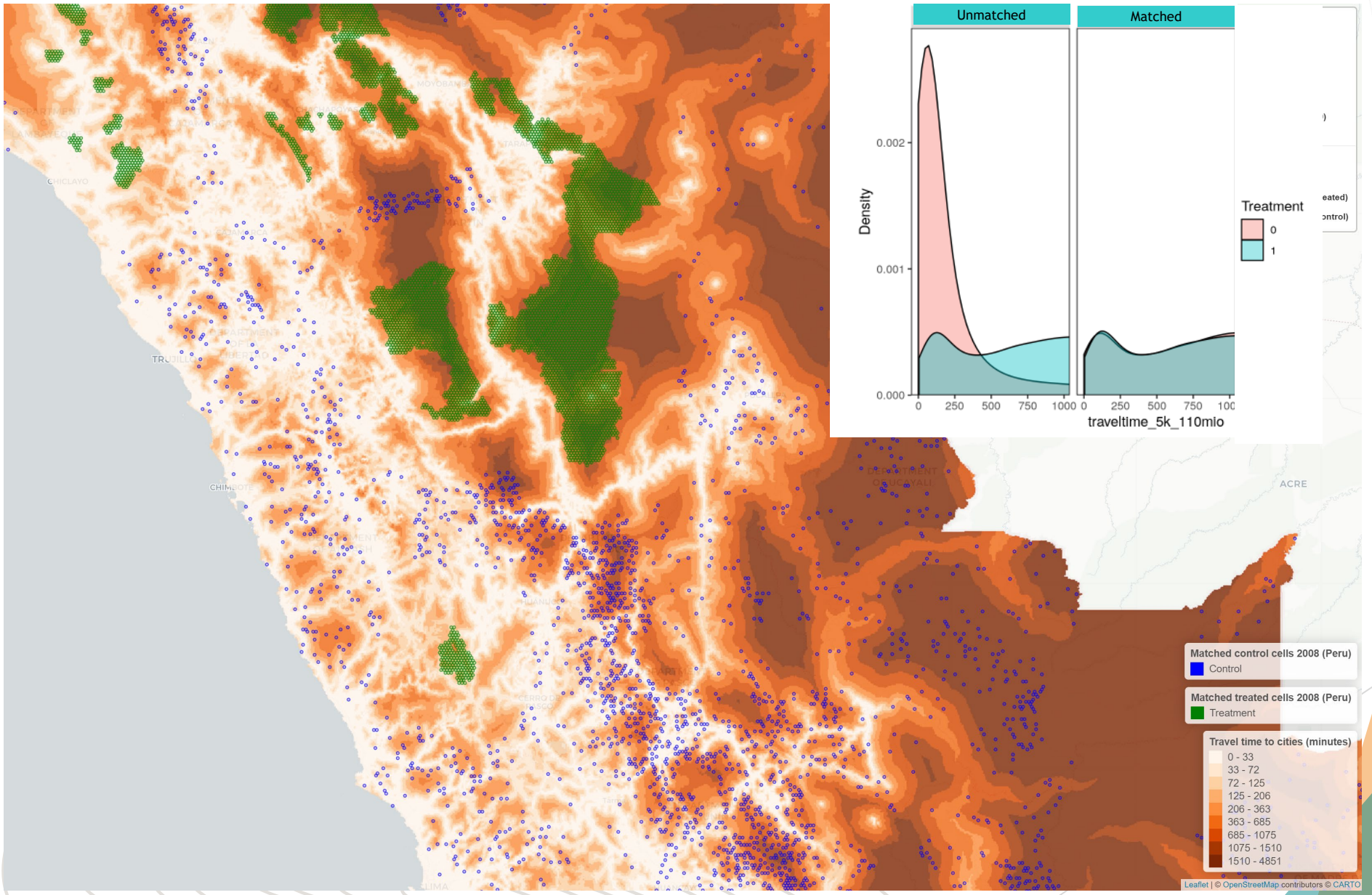


Spatial matching on grid level

- We use a spatial grid (1 to 15 km^2)
- **Control Areas** are selected from **non-protected areas**
- **Variables affecting forest cover loss and the probability to be a PA** (based on literature review):
  - Forest Area at project start
  - Average forest cover loss from 2001 to project start (time invariant)
  - Accessibility (Minimum Travel times in minutes to the next city)
  - Clay contents of soils
  - Terrain Ruggedness Index (averages)
  - Elevation above sea level (averages)
  - Country

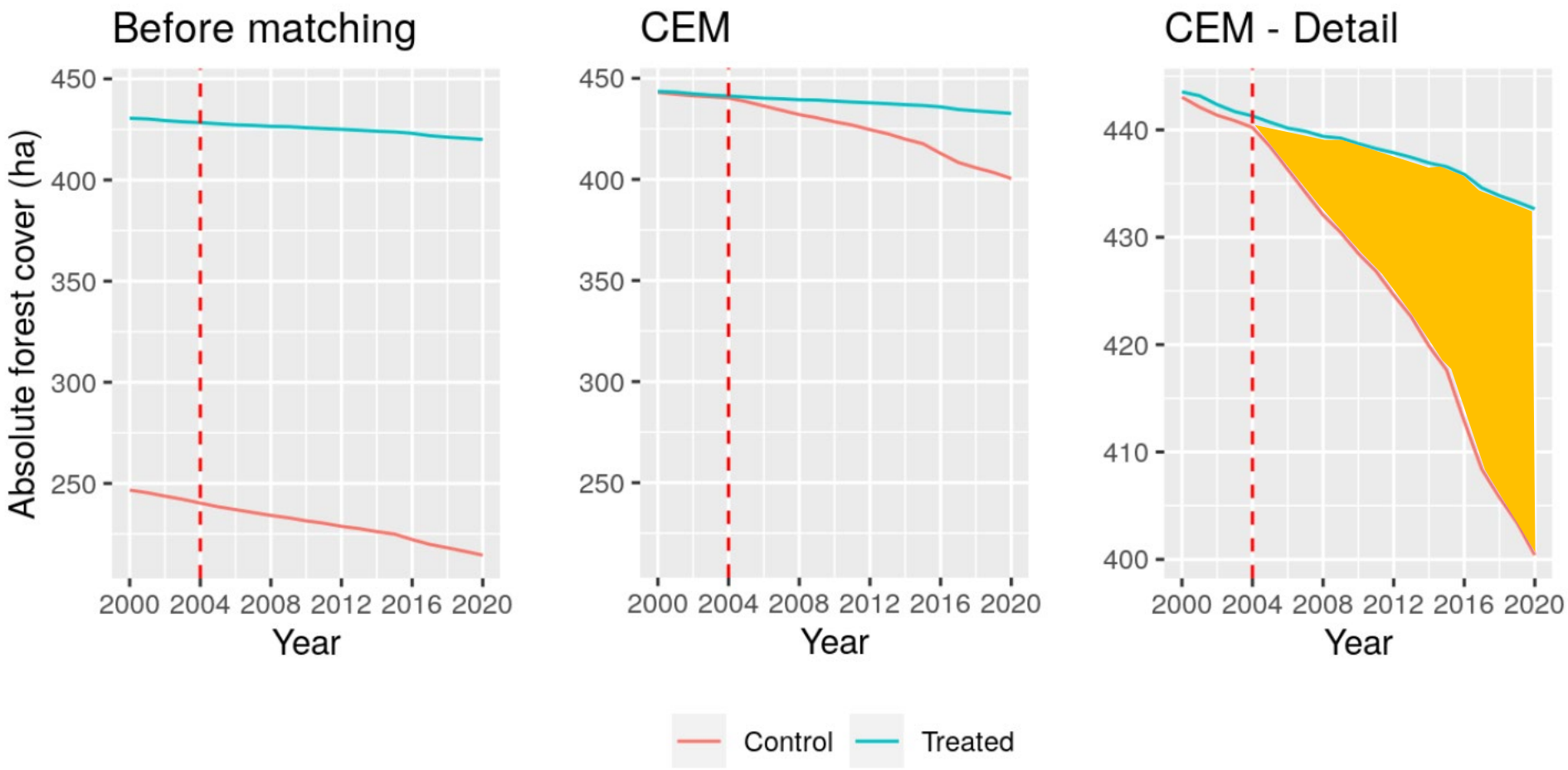


Matching – Selection of cells with similar accessibility

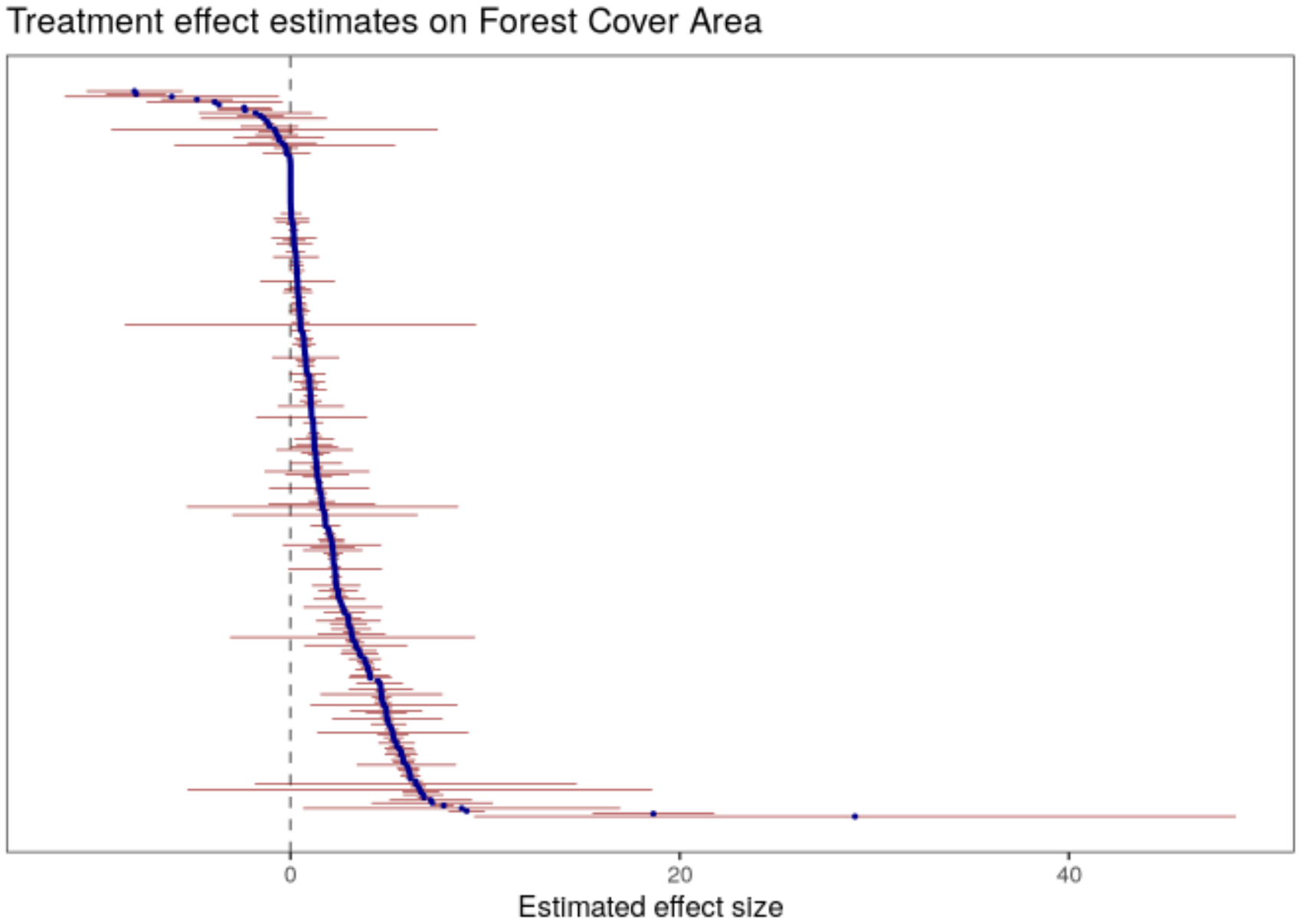


Results KfW

Parallel trends in forest cover



This is how effective conservation efforts looks like in numbers



Results AFD

Restricted (preliminary) Sample

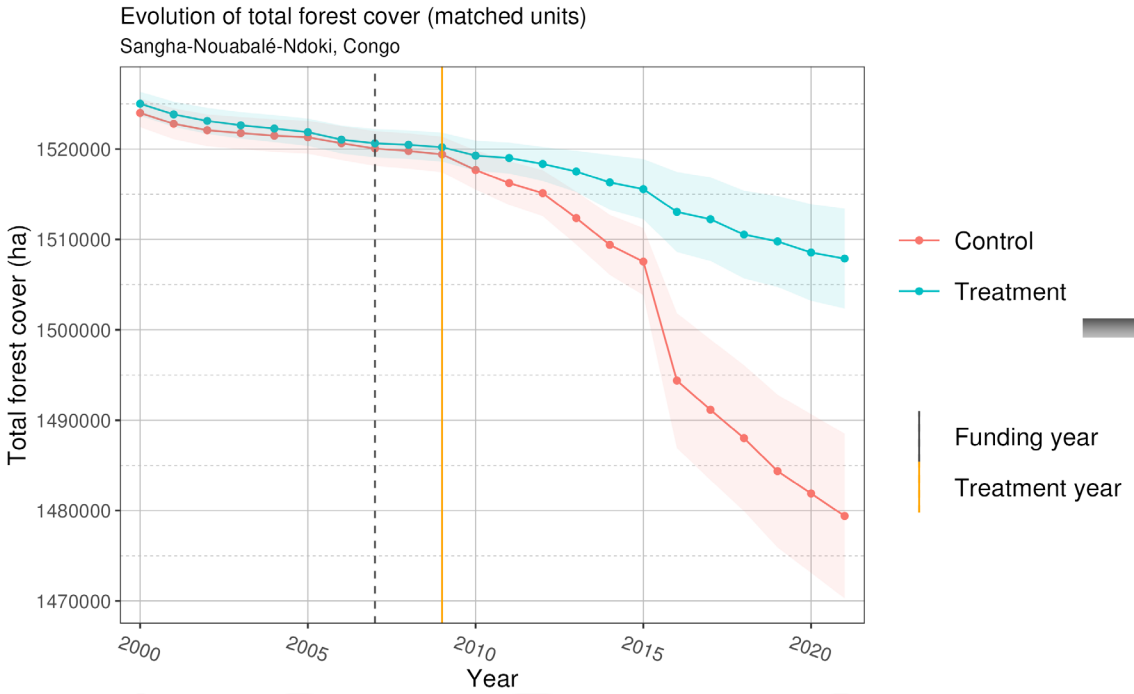
- **150** PA supported by the AFD in Africa in our database
- **72** with geospatial location available
- Restriction to non-marine, created between 2002 and 2021, with area > 1km² (Wolf et al. 2021)

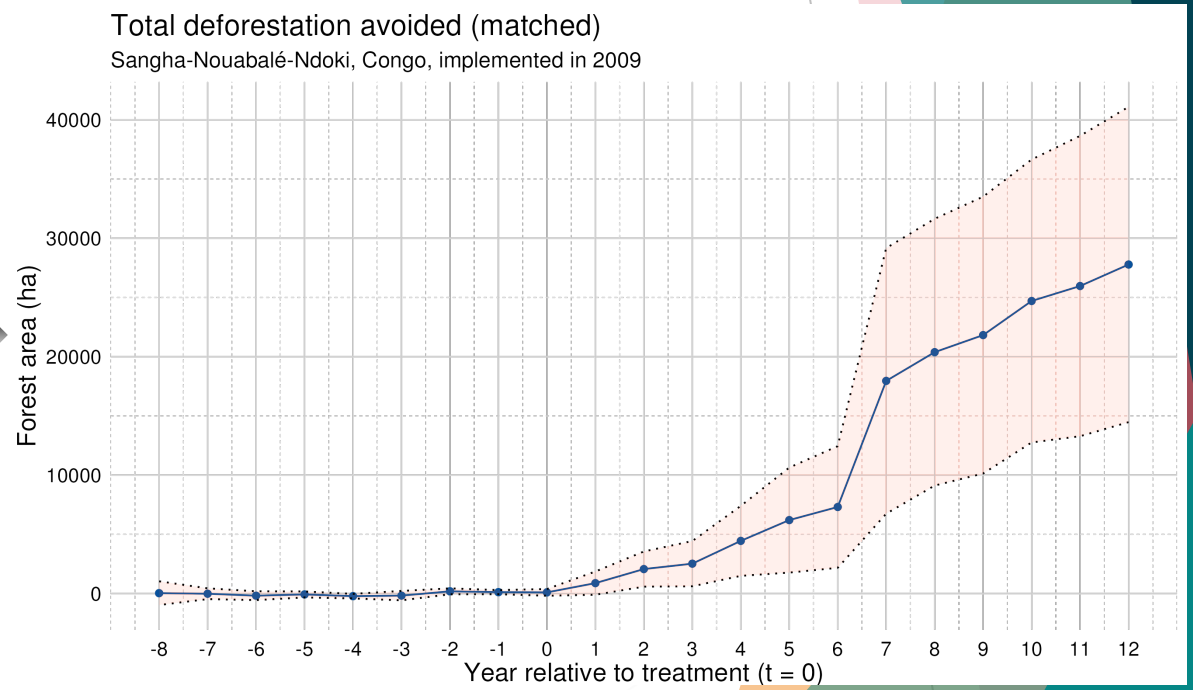
→ **23** PA in 9 African countries

→ The effect of conservation can be computed for **15** PA in 8 countries

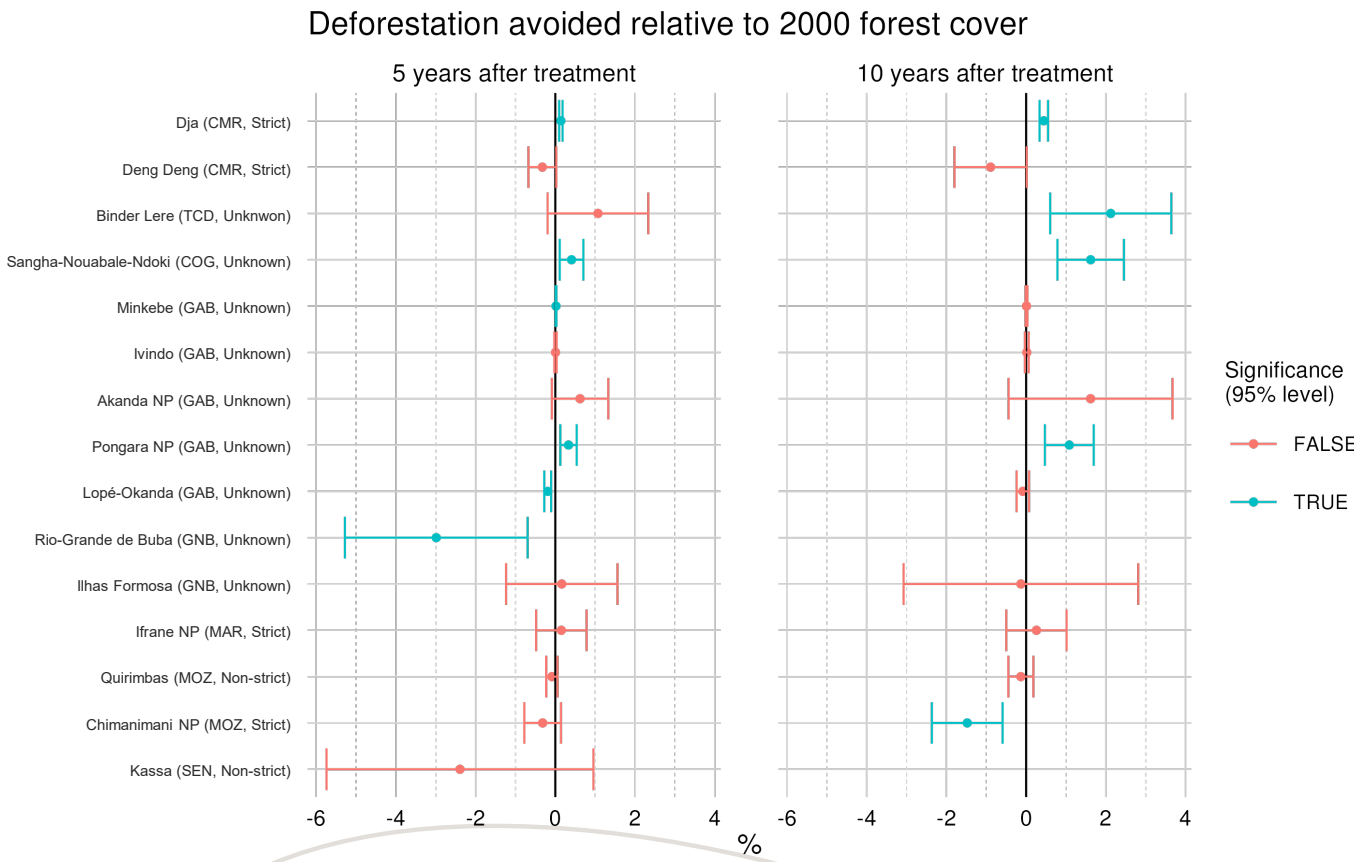
Individual Analysis
Example for Sangha-Nouabalé-Ndoki protected area

- The conservation program led to a ***decrease*** in deforestation 2 years after its implementation.
- → After 10 years, the conservation preserved **25 000 ha of forest, or ~1.5% of forest cover in 2000**





Preliminary evidence from 15 PAs in Africa supported by the AFD, suggests a lower level of forest cover loss

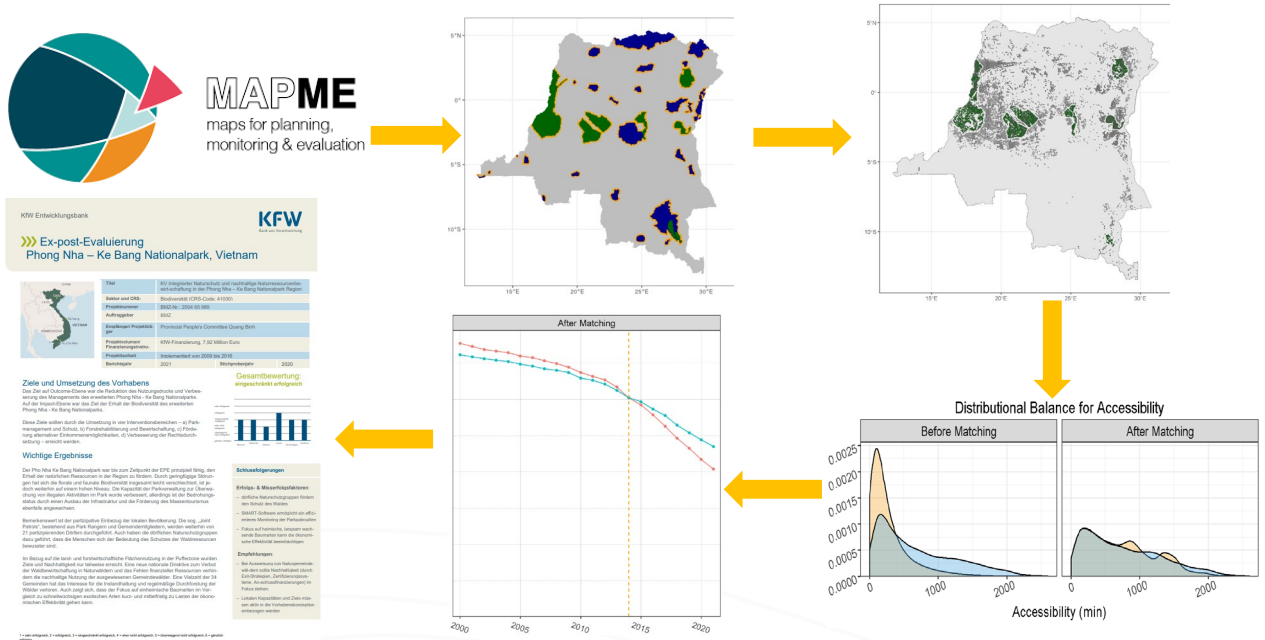


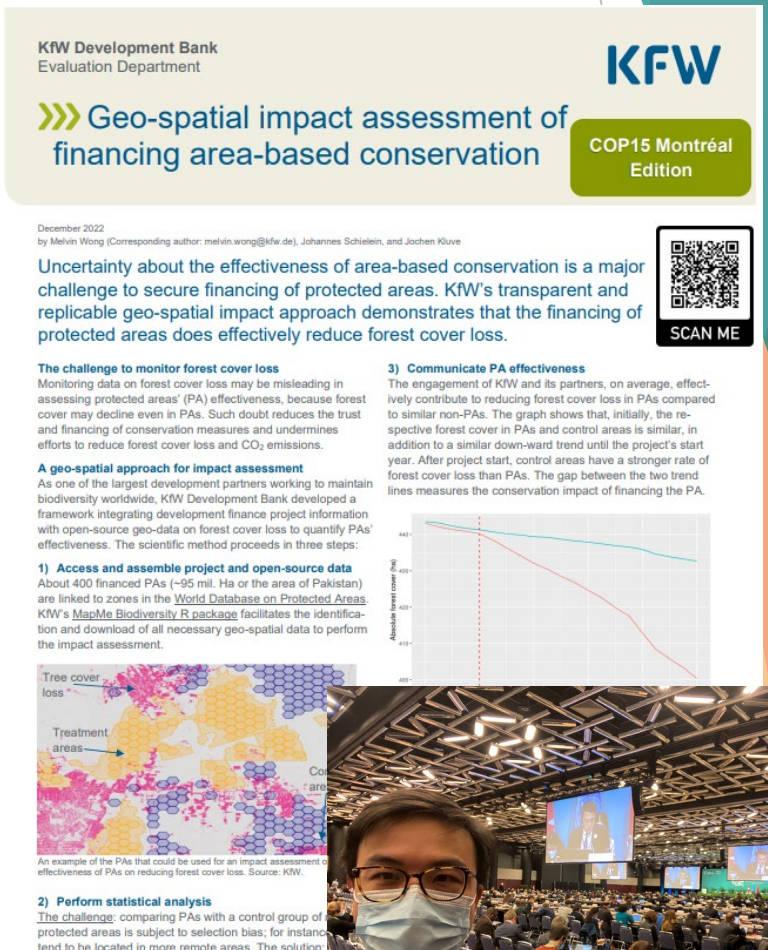
- But there are PAs where forest cover increased or didn't change
- Other heterogeneity in PA that could be considered: governance type, IUCN category
- Difficult to measure important indicators like management quality, biodiversity, local development
- What does it mean that a PA is supported by the AFD? Important to distinguish different kinds of support: direct, indirect (trust fund), total support, co-financing, financing the PA creation or maintenance, duration of the support

/!\ The analysis presented here is still in progress. Results might change. They must be considered as purely indicative and not be shared.

Nice analysis, but… so what?!

- CONVINCE policy-makers and gain confidence in conservation
- PLAN conservation projects
- LEARN to improve development projects
- DIALOGUE opportunity on conservation projects





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Thank you!

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Appendix

EXAMPLE IN CONGO

- Sangha-Nouabalé-Ndoki

SNN characteristics

- **IUCN category** : Unknown
- **Creation year** : 2009
- **Governance** : Unknown
- **AFD support** : 2007