Forland Restoration

Anticipate. Decide. Monitor.

A tool to implement participative landscape restoration

Climate-KIC is supported by the EIT, a body of the European Union

QUIZZ

What is Forest Landscape Restoration for you ?

Answer the quizz and let’s see how you … and … others see the FLR

Defend your point of view after the results of the quizz !

Forest Landscape Restoration

BONN CHALLENGE

150 M ha by 2020
350 M ha by 2030

afr100

Initiative 20x20

New York Declaration on Forests
GLOBAL PLATFORM

- halving tropical deforestation by 2020 and ending it by 2030.
- calling for the restoration of 150 million hectares of degraded landscapes and forestlands by 2020 and 350 million hectares by 2030.

It is time for implementation

Forland Restoration Vision and Principles

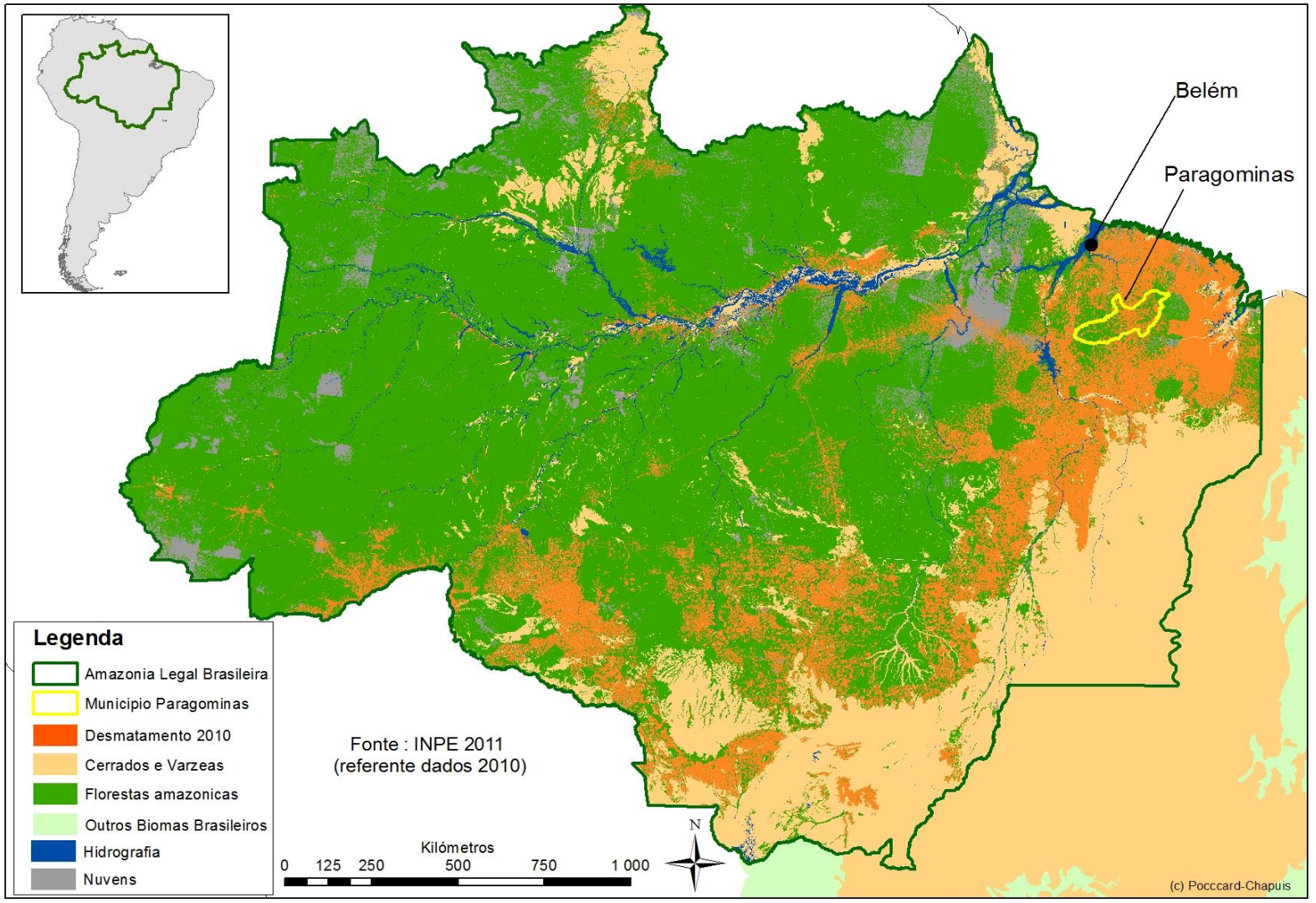
Our Vision: **People can better adapt to radical change and their decisions are more sustainable when they can explore <u>TOGETHER</u> possible futures and reflect different point of view.**

Collaborative: **building a common vision of a landscape making every voice count**

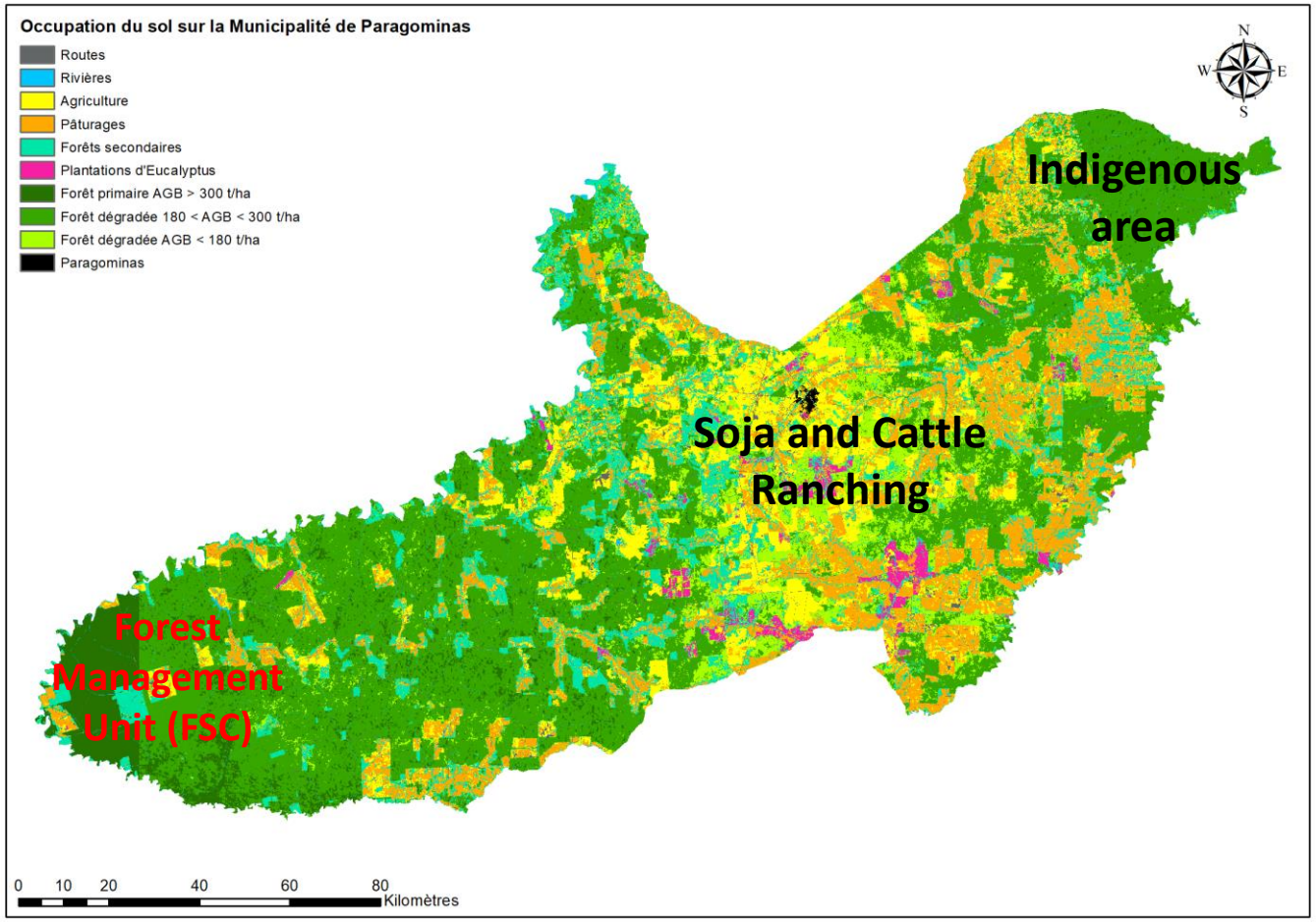
Innovative: **building a Forland Restoration platform for your landscape**

Prospective: **building and assessing the impact of scenarios for Decision**

Paragominas in The Brazilian Amazon



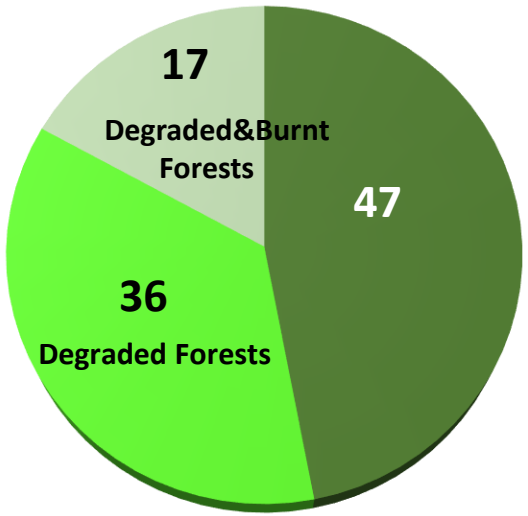
Case Study : Paragominas municipality, Brazil

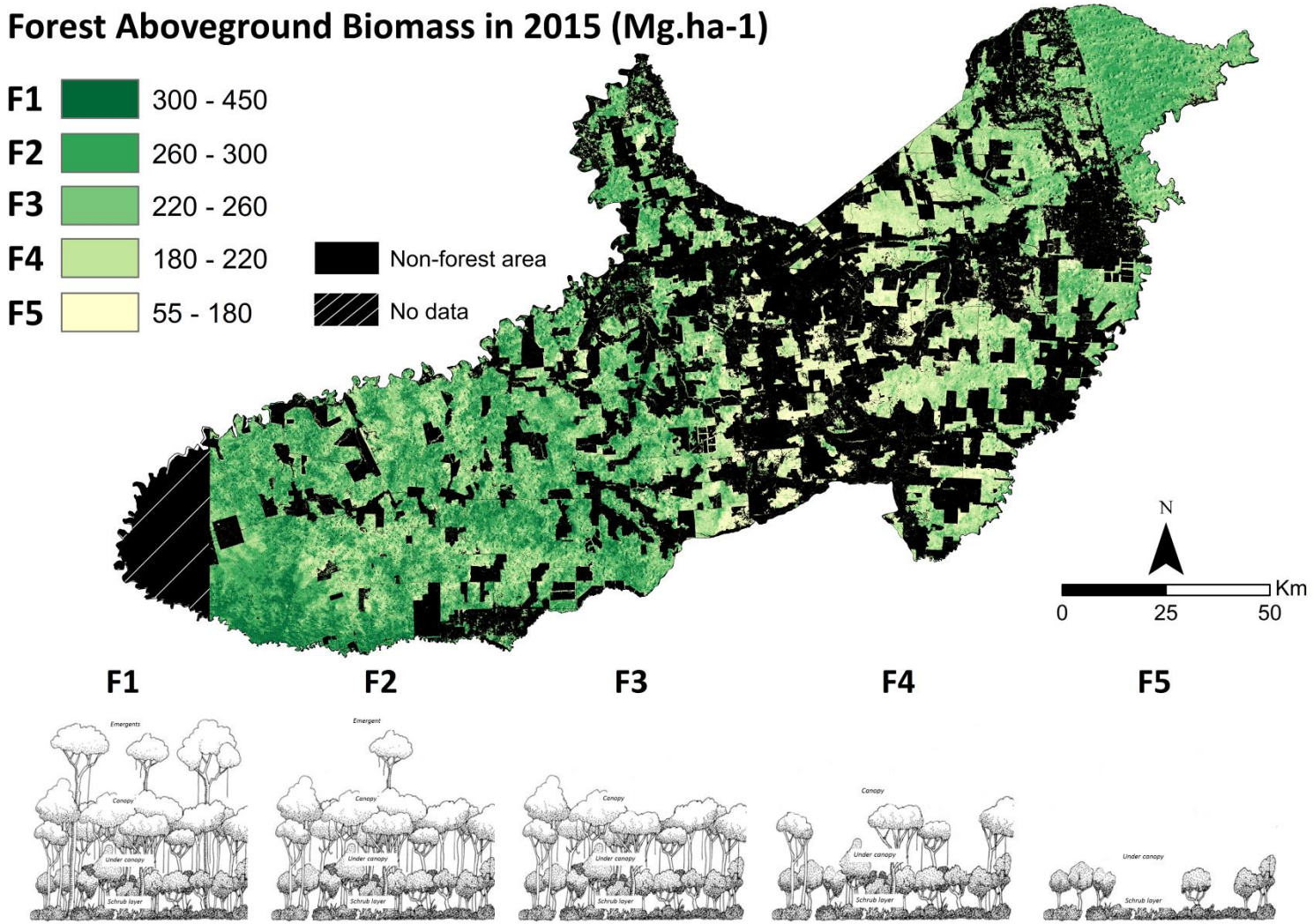


- 19,342 km^2, 100,000 inhabitants
- The city was built in 1961, at the early colonization period of the Brazilian Amazon
- High deforestation rates in the past for cattle ranching
- Since 2008 , Paragominas has moved to a green municipality approach and is now committed to a green economy plan.
- A clear demand from the territorial governance (Municipality) to move forward deforestation control actions

Forest Cover

Forest Cover = 60 %
(1,140,000 ha)



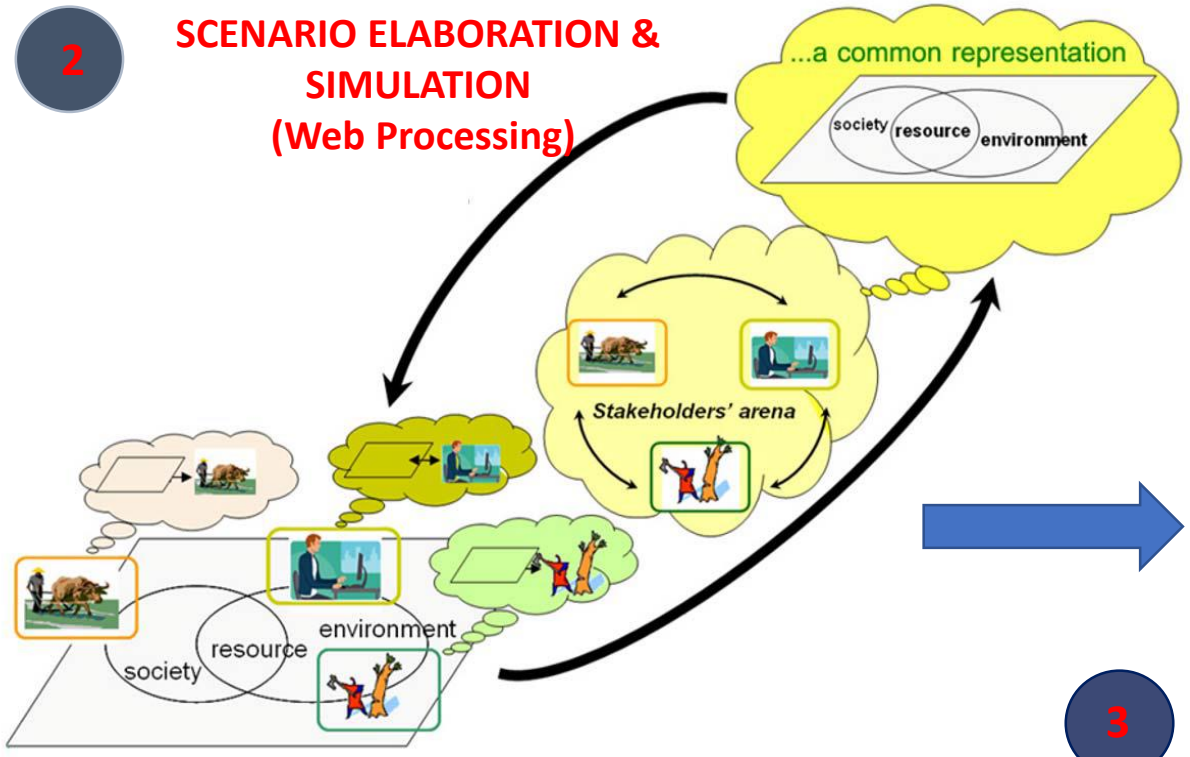


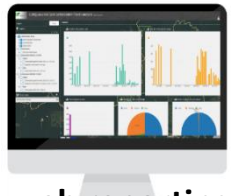
General Landscape View of Paragominas

Finding the best land-use compromise for the best landscape ecological fonctionning
Forest cover quality, forest connectivity, forest production

How does it work?

2 **SCENARIO ELABORATION & SIMULATION (Web Processing)**





web reporting

1 **DIAGNOSIS & DIGITALISATION (Web Mapping)**

3 **REPORTING & MONITORING**

4 **TAKING DECISION**

Defining indicators

Indicators discussed with stakeholders

- **Slope (%)**
- Sun Radiation
- Precipitation (mm/yr)
- Distribuição da precipitação
- Temperature min/ max (°C)
- **Forest Cover (ha)**
- **Fires (% landscape/farms)**
- **Biodiversity (fauna, flora)**
- **Forest Quality**
- **Type of Forest**
- **Rivers (volume)**
- **Soil quality (nutrients)**
- Air Quality
- Water quality
- **Carbon Balance**
- Wind
- **Fragmentation**

Ecological Indicators

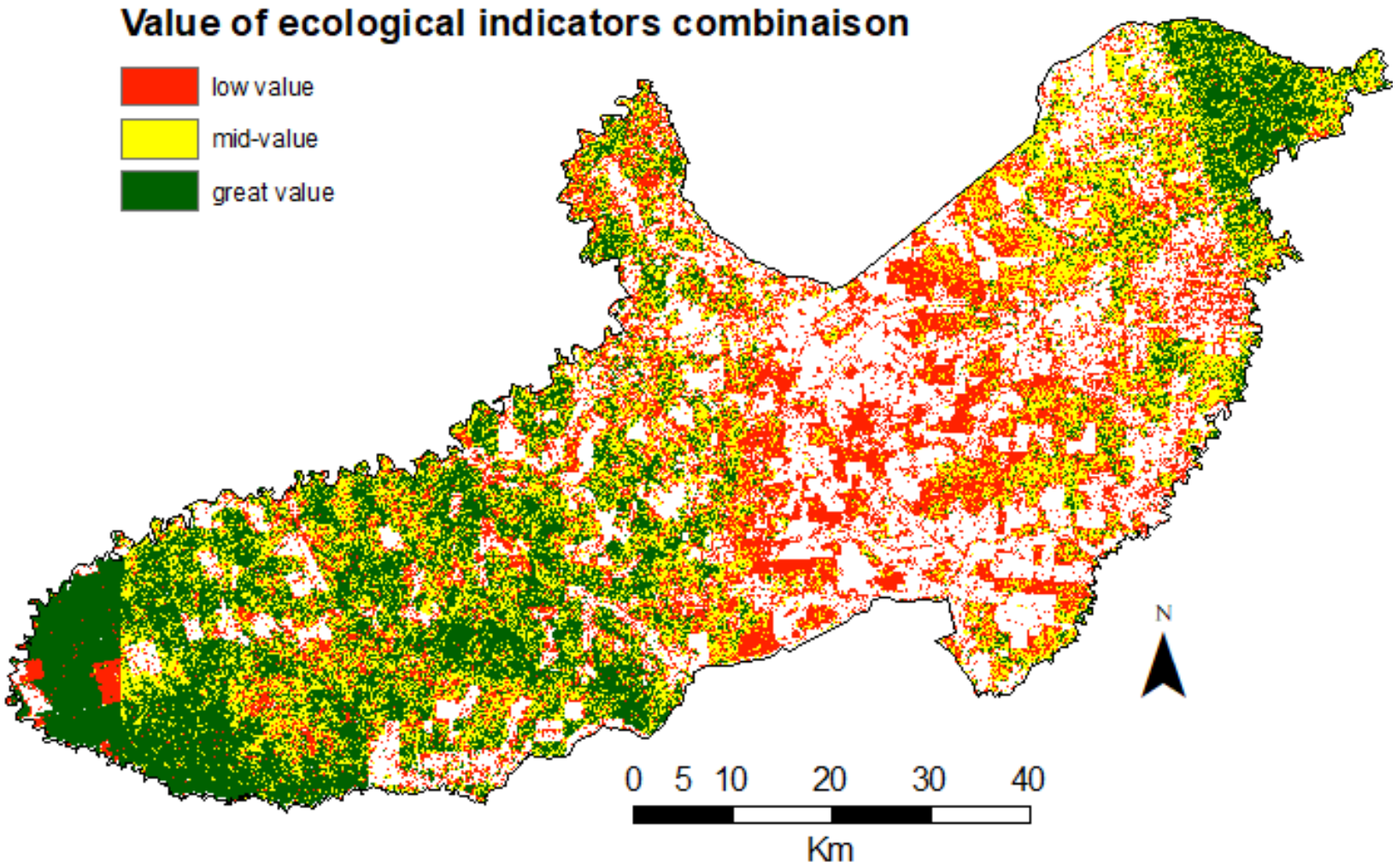
- Carbon
- Erosion
- Connectivity (forests species & generalists)

→ Merged Indicators

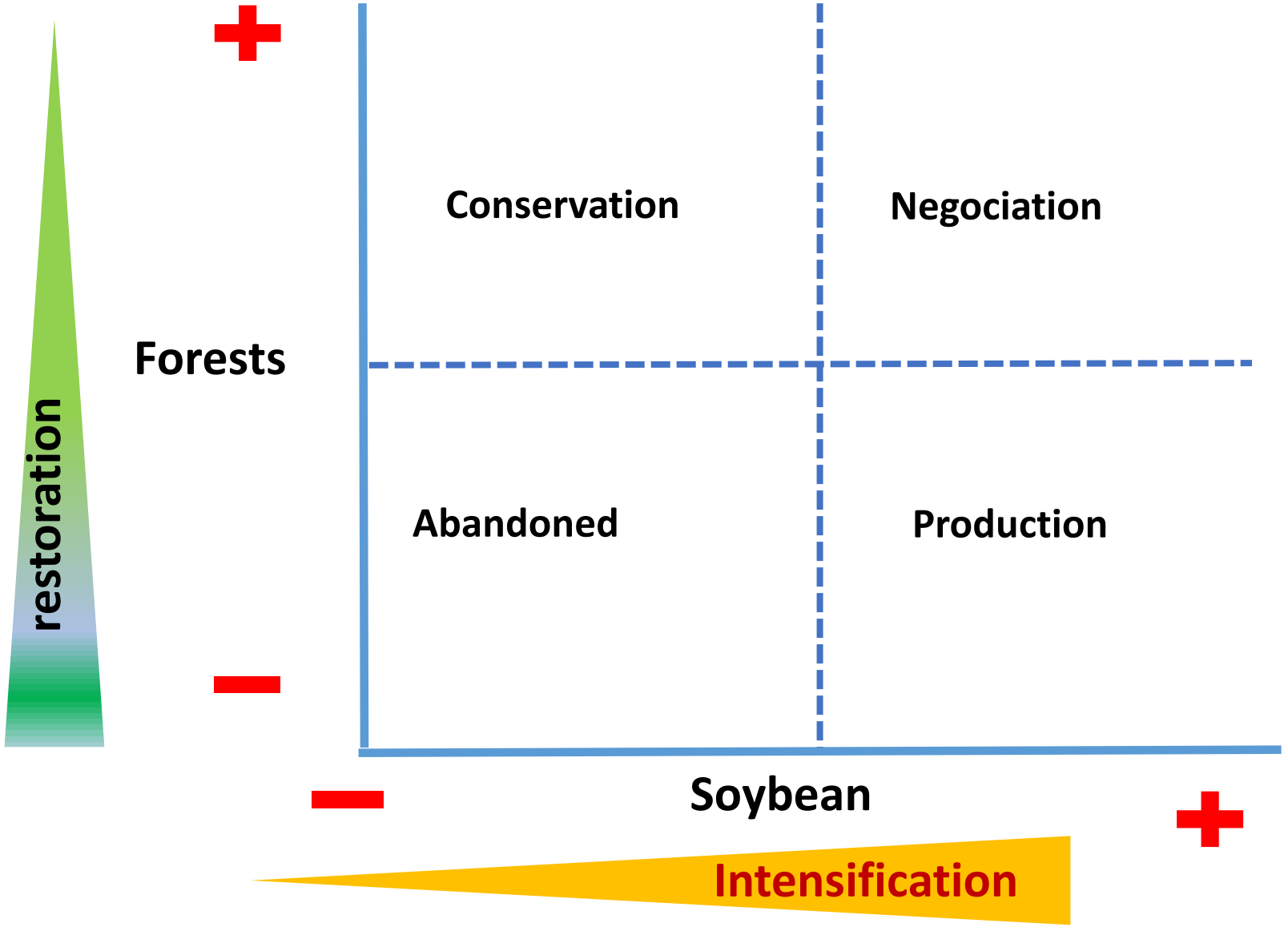
Social and Economic Indicators

- Costs and Benefits of land use systems
- Jobs
- Land Use Value

Map of the Merged Environmental Indicators



Decision Making



Building Scenarios (5, 10, 30 years)

- **BAU :** land use stay constant over the years, projection of the degradation model (estimated on 2008-2017) on the forested areas, knowing that we do not have secondary forests dynamics models (= abandonned pastures) and growth model (from Poorter et al. 2017)

- **Optimal** : law (**without** degradation) : natural regeneration or plantation (**done**)

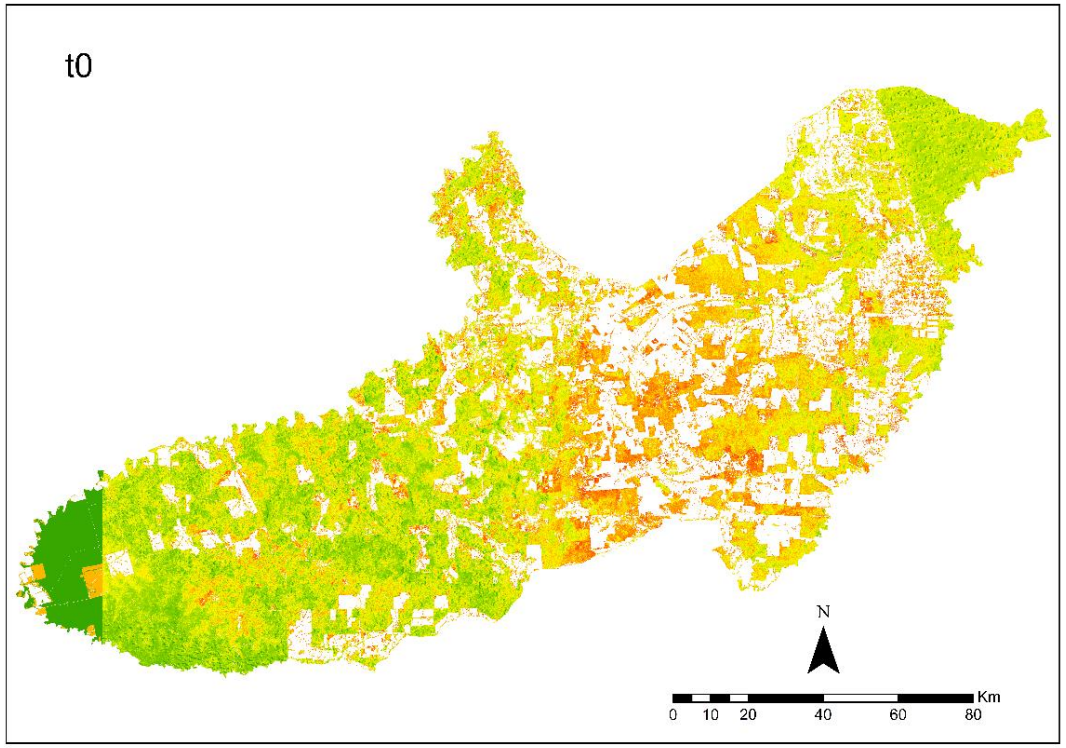
- **Landscape Redesign** : land use change according « aptitudes x degradation x suitability » :

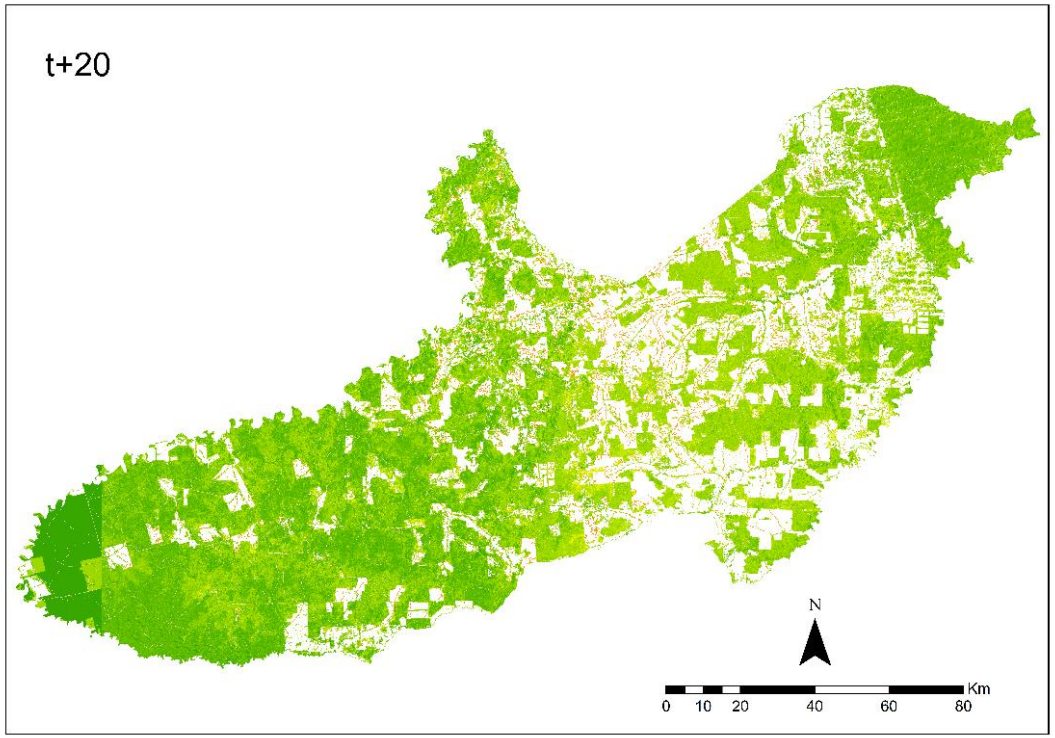
  - Natural regeneration (or plantations) in APP and slopes (> %)

  - Convert « highly degraded forest » to productions (soybean/beef…)

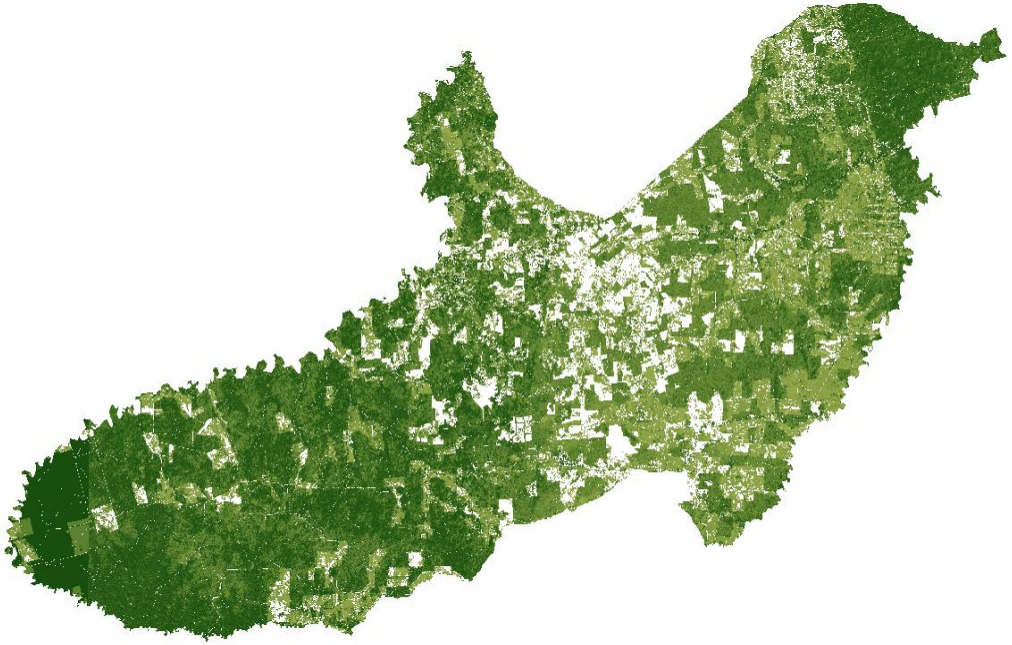
⇒ rules respected by 100 % the land-owners
⇒ definition of *highly degraded forest (based on ES)*
⇒ ratio of land-use “exchange”, 1-x ratio means 1 area unit of restored land for x unit of deforested land

Carbon Stock In the Optimal Scenario





Carbon stocks



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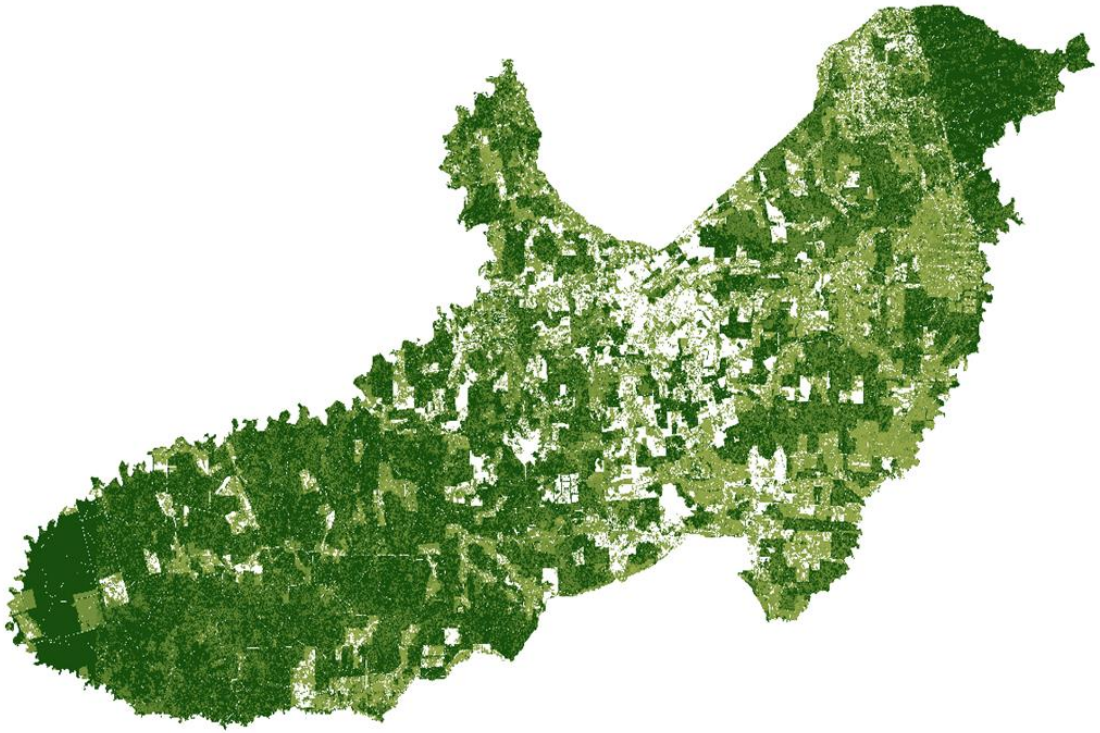

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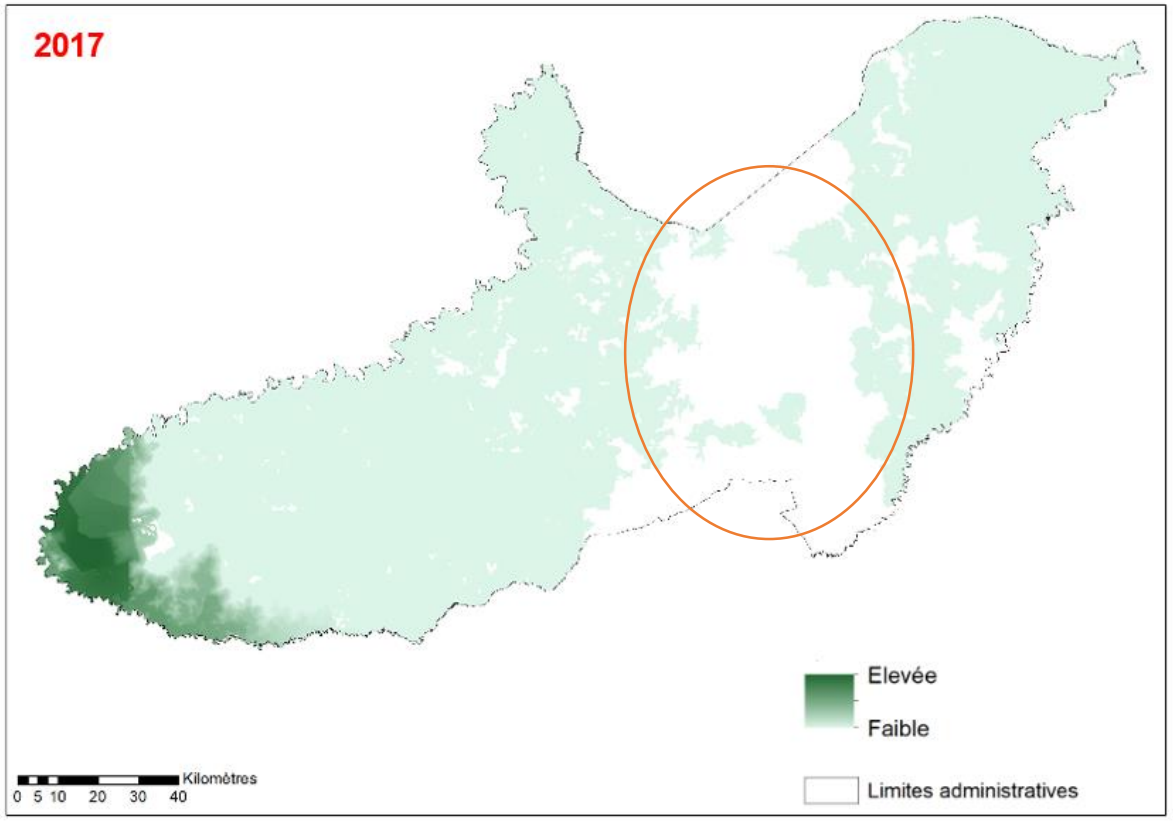
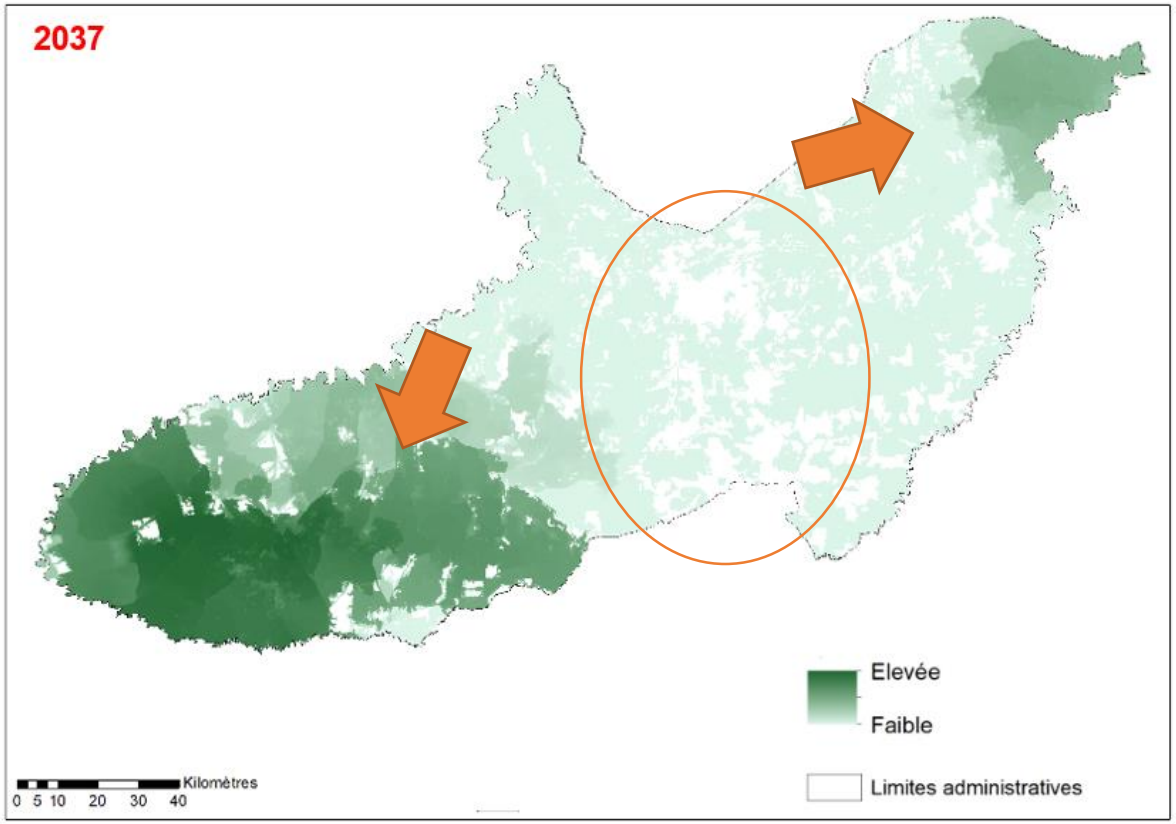
Connectivity maps : optimal scenario

Forest mammals with low mobility capacity





- Increased connectivity potential at the western and eastern extremities of the territory Effect of stopping degradation
- Central corridor still poorly connected despite reforestation of APPs

Conclusions

- Bottom up Approach = Demand of the Municipality
- Participative Approach = Consensus among stakeholders

  Every voice counts
- Towards a Common Vision of the Territory

Get in contact with us to know how we can collaborate !

https://forland.io/

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