



MEASURING THE ENVIRONMENTAL IMPACT OF INDUSTRIES
- FOOTPRINT TARGET TOOL -
FOCUS ON ASSESSING HABITAT DEGRADATION AND STRUCTURAL CONNECTIVITY

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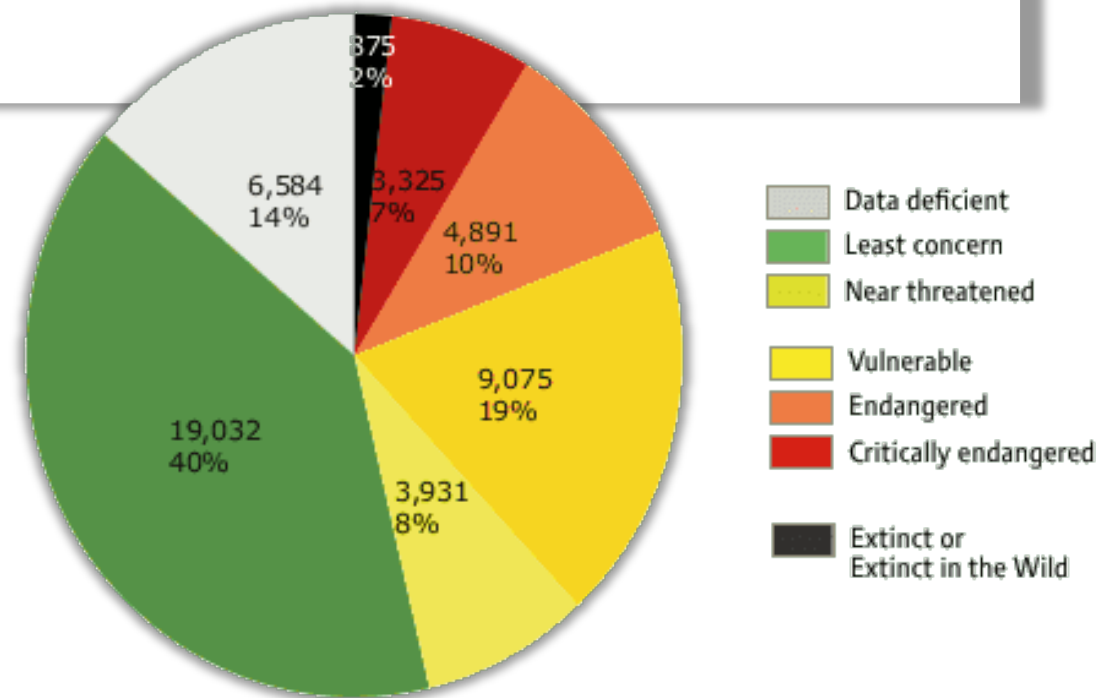
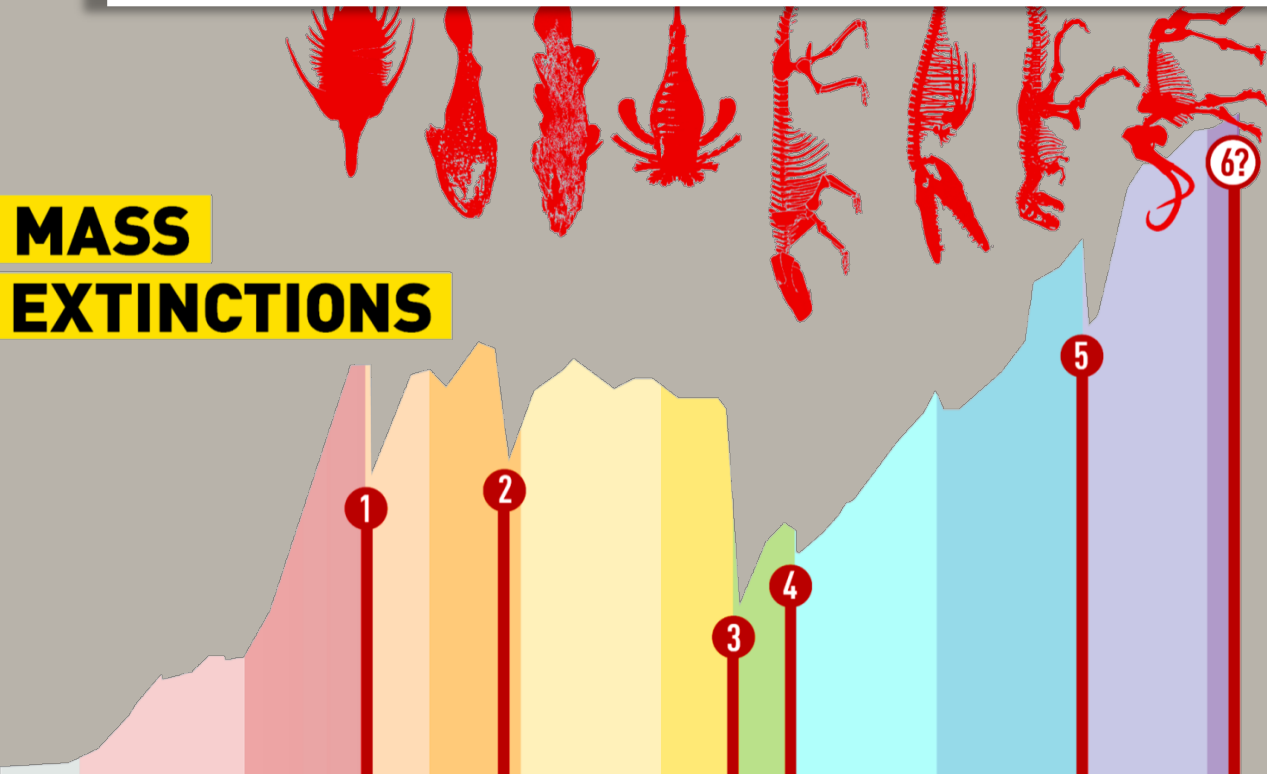
01

ENVIRONMENTAL CONTEXT

Since the 1970s there has been an exponential decline in biodiversity, with an ever-increasing number of species threatened with extinction.

Historically, there have been 5 mass extinction events with an average extinction of 75% of species.

BIODIVERISTY EXTINCTION



ECOSYSTEM SERVICES



02

REGULATORY & BUSINESS CONTEXT

For some years now, biodiversity has been the new guest of national and international regulations.

BIODIVERSITY IN POLICY

COP15 Montreal (2022)

23 measures adopted to preserve biodiversity and ecosystem services with fixed quantified targets.

Environmental labelling for products



Law to be released in Q4 2023 in France for textile and food with biodiversity indicators, end of 2024 for Europe. More than 15 indicators planned.

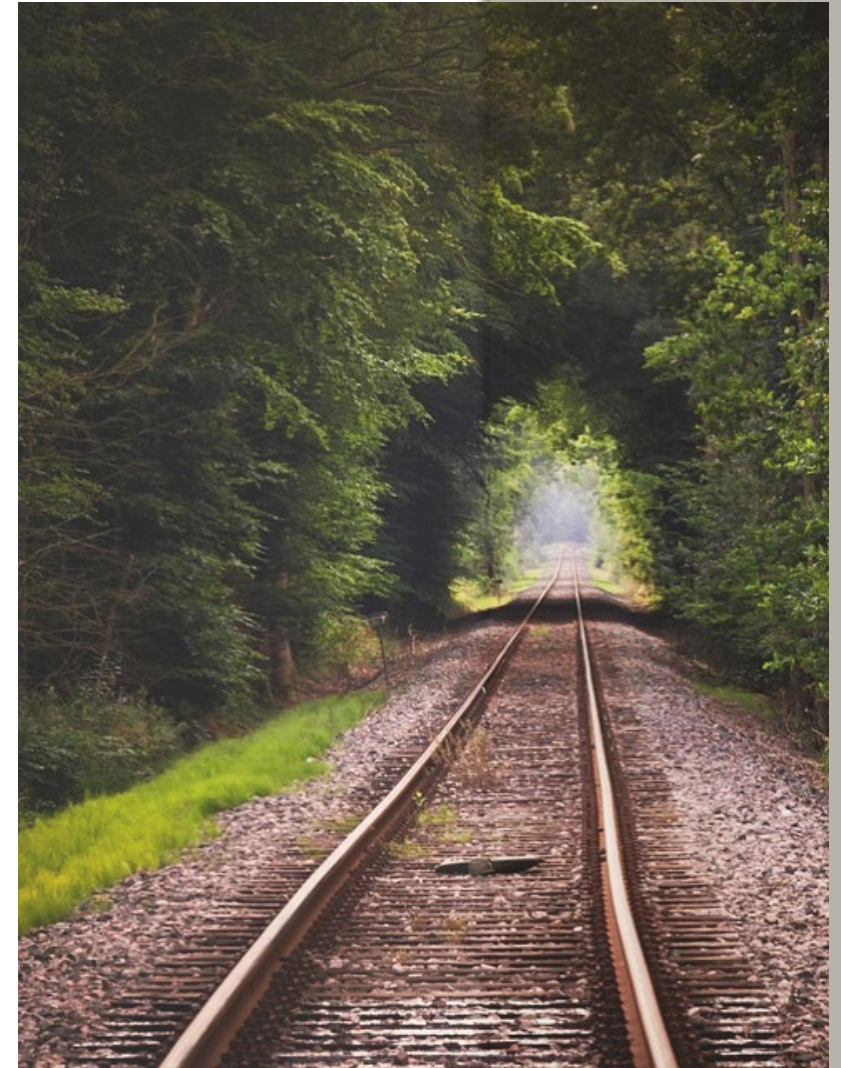
Corporate Sustainability Reporting Directive (CSRD)

Mandatory non-financial reporting for listed companies and big companies (more than 250 employees). Biodiversity section required.

BIODIVERSITY IN COMPANIES

Biodiversity is therefore a challenge for companies. Indeed :

- **55% of global GDP** depends on the proper functioning of biodiversity: increasing pressure on sustainability of different sectors due to reduced yields, scarcity of resources ...
- **Long and complex evaluation process** of traditional lifecycle assessment
- Current databases **do not consider the country/region** of manufacture/production.
- **Lack of a global vision** and **difficulties to prioritize actions** leading to certain inertia in deployment throughout the company.
- **76% of consumer confidence** in companies based on their **ethics and environment consideration**



03

FOOTPRINT TARGET TOOL

A 360° Environmental vision to measure the
impact of companies

CONCEPT

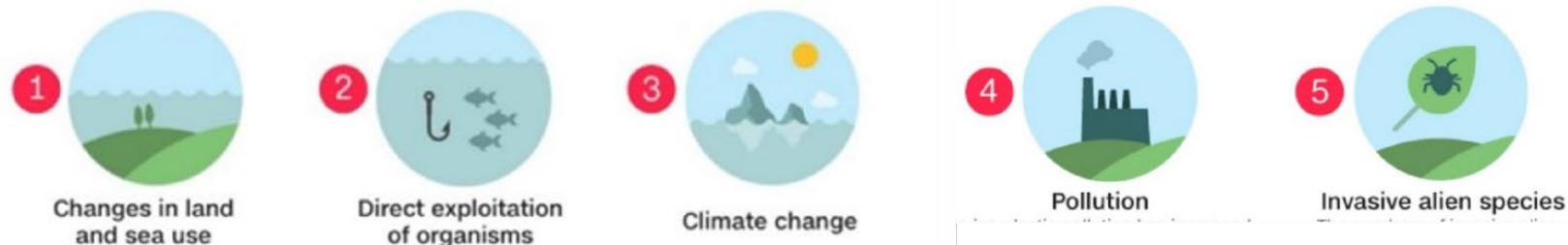
Footprint Target®
is an
environmental
impact
assessment
method based on
the **IPBES**
framework.



THE REASONS WHY :

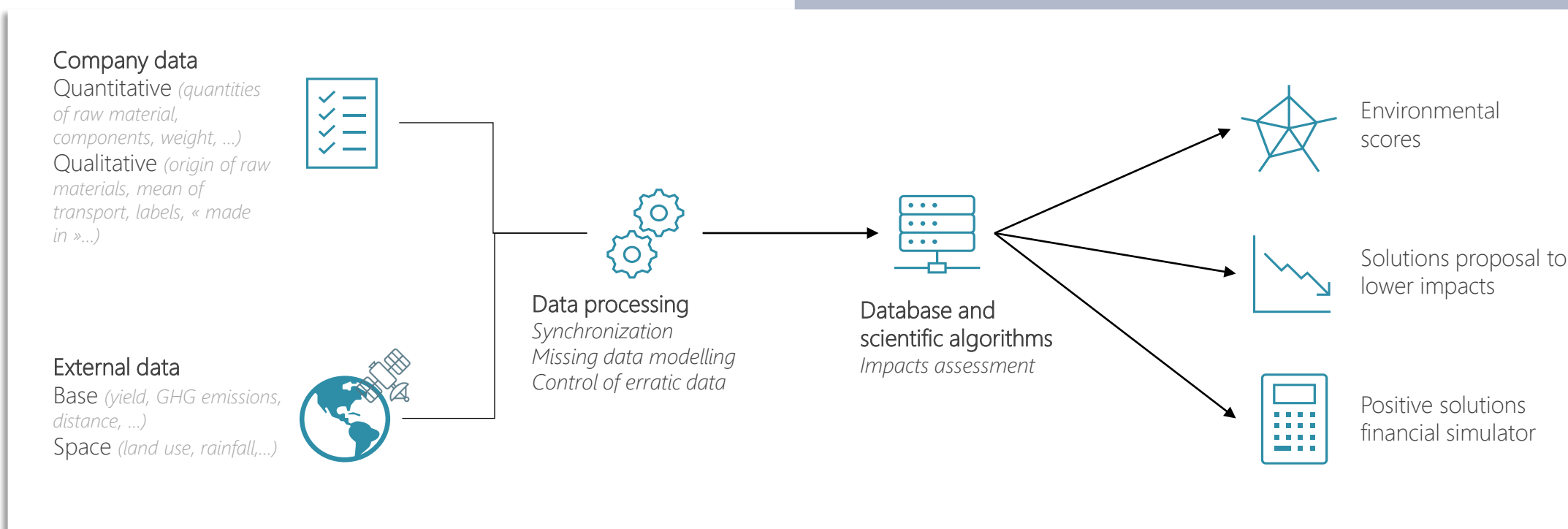
- ✓ A complete and comprehensive picture of the impact of humans on the planet
- ✓ An opportunity to make pragmatic and leading to action assessment
- ✓ A way to identify more easily the levers of action and solutions

THE 5 CAUSES OF BIODIVERSITY LOSS :



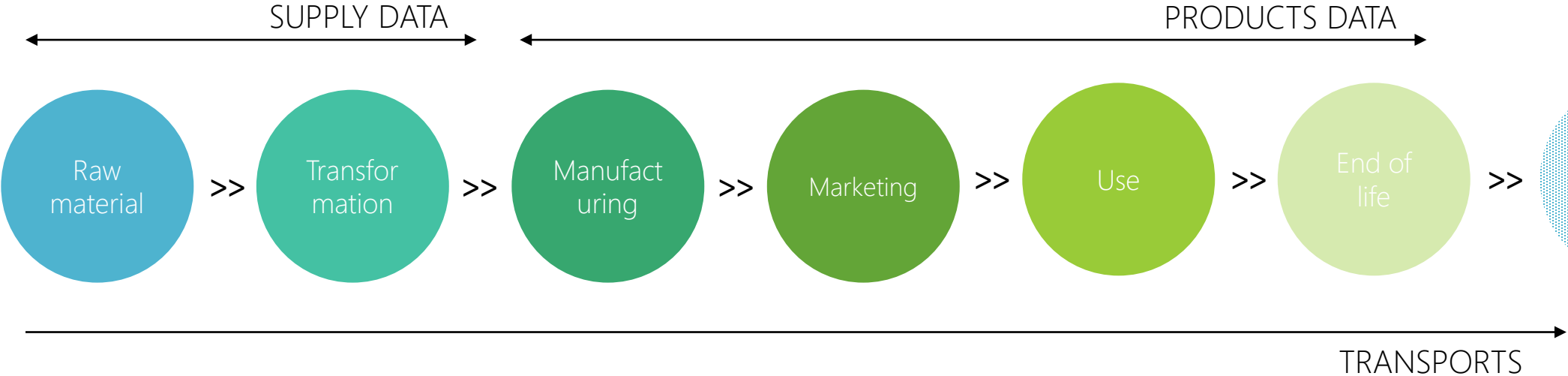
METHOD

A SaaS software that combines companies' data with external environmental data, including space data

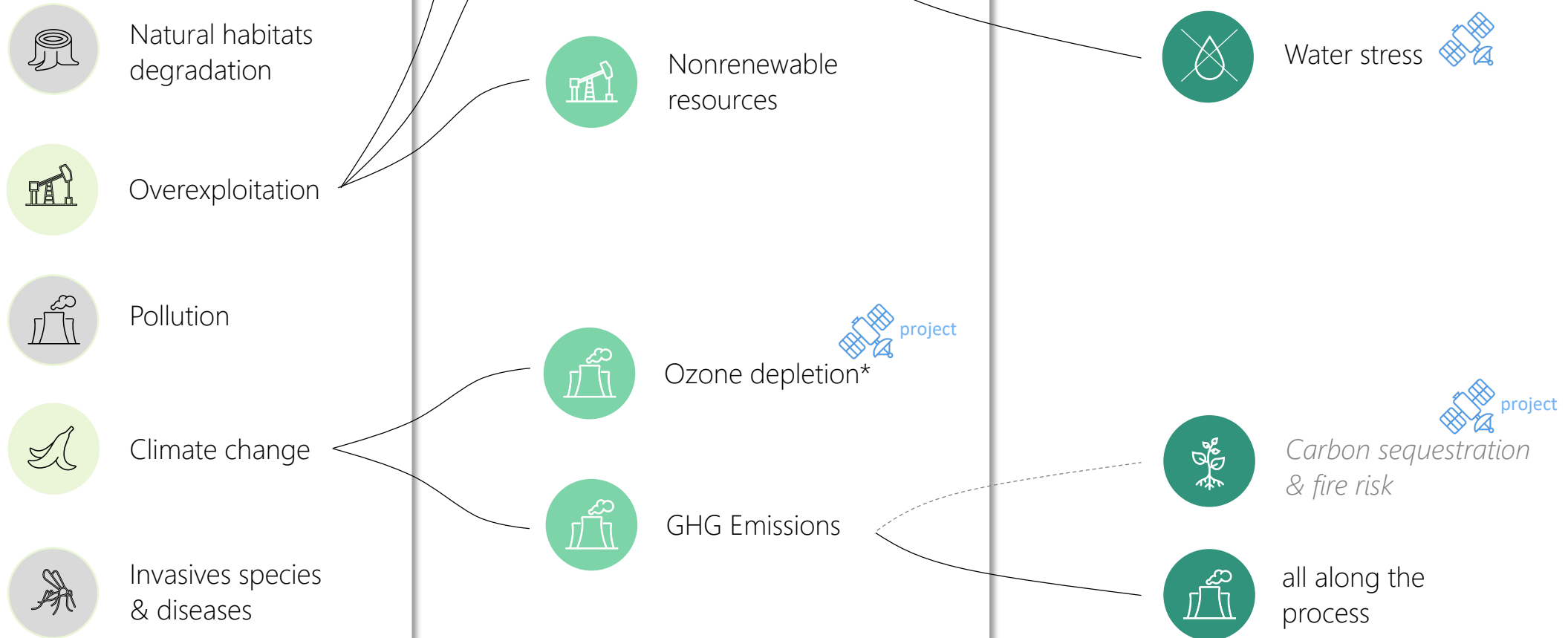


Evaluation of one 40th indicator
over the whole lifecycle
assessment

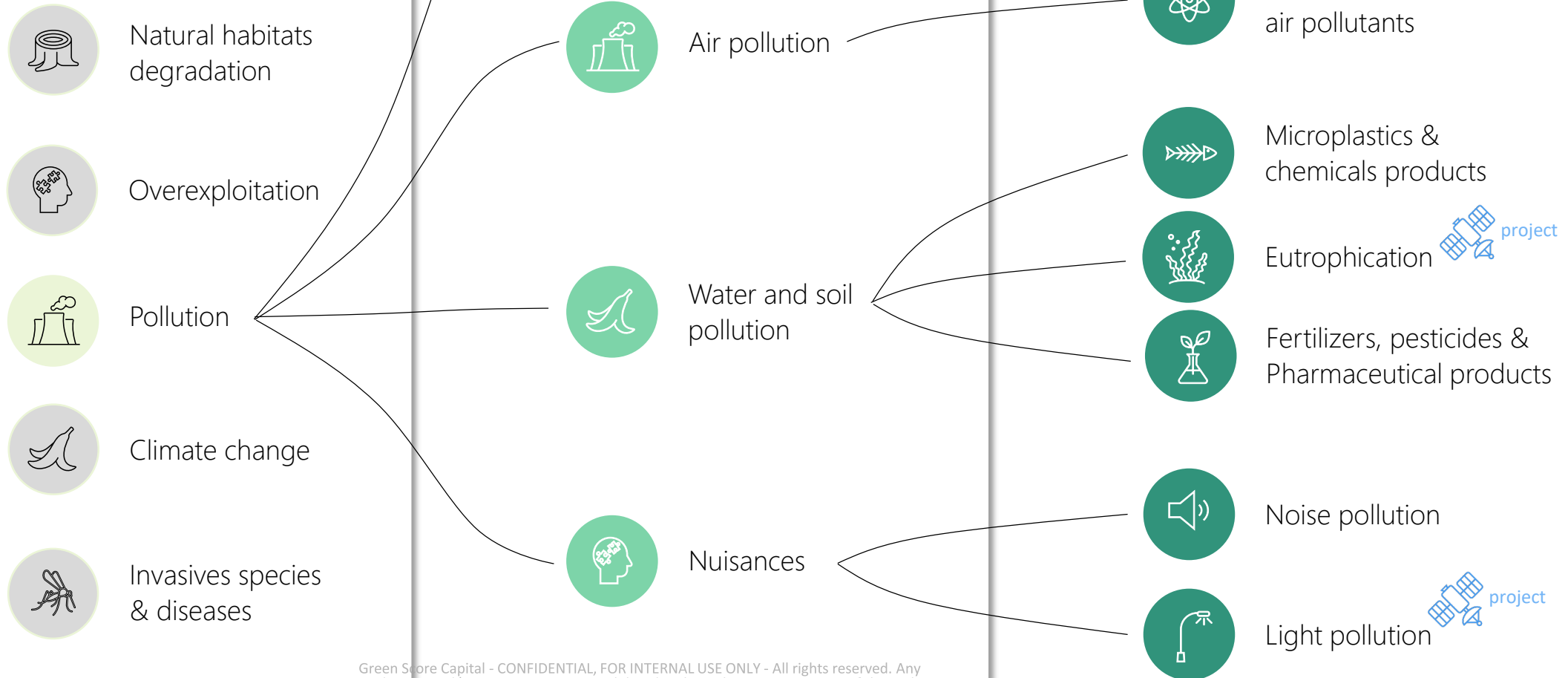
METHOD



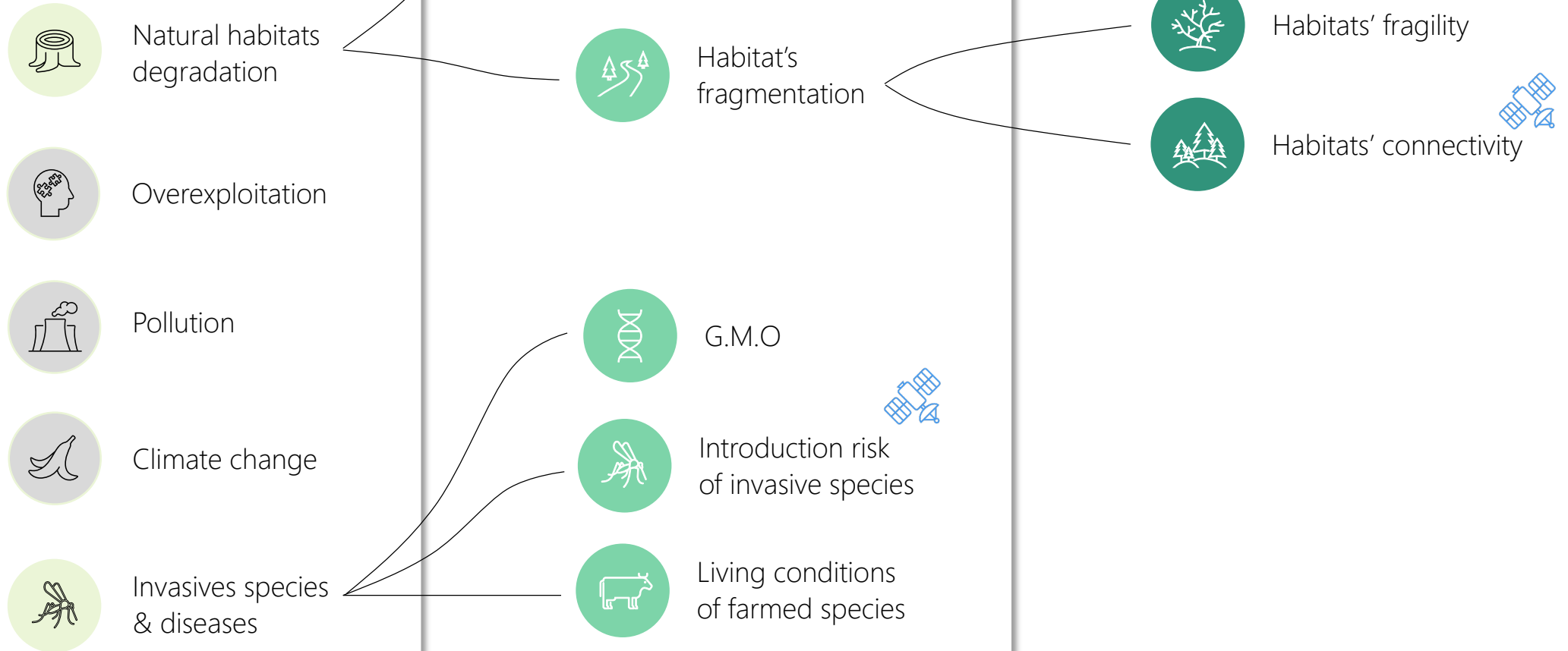
OUR INDICATORS



OUR INDICATORS



OUR INDICATORS

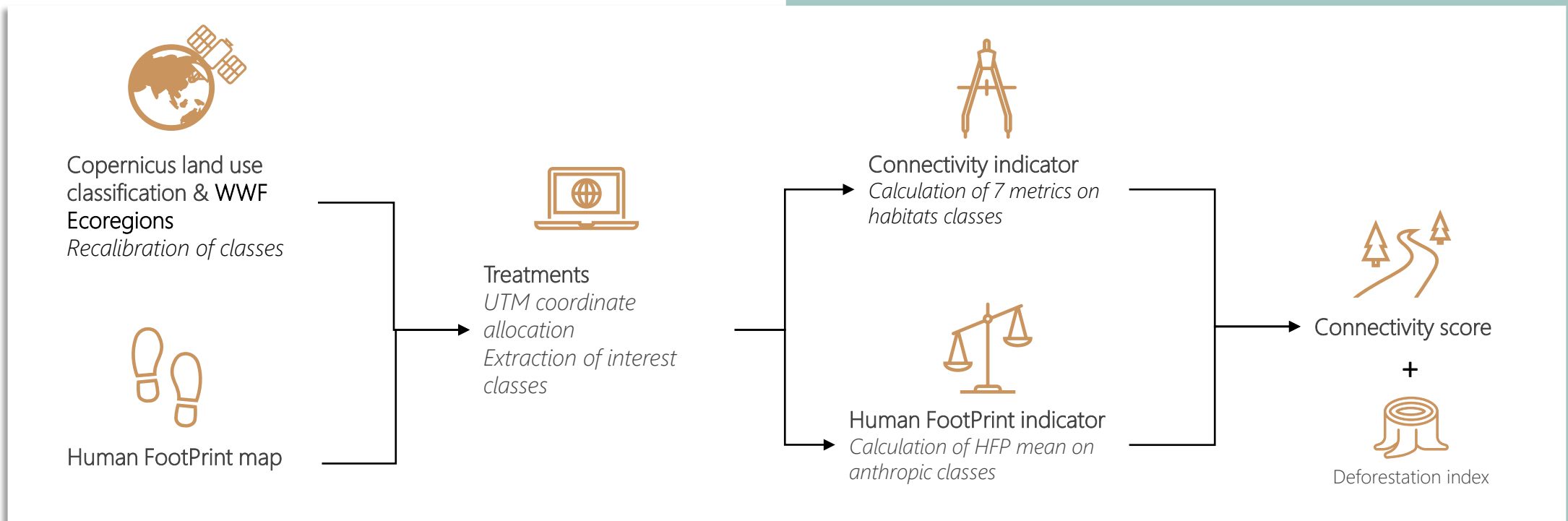


04

STRUCTURAL CONNECTIVITY

METHOD

Assessing the impact of humans on the connectivity of natural systems using satellite data



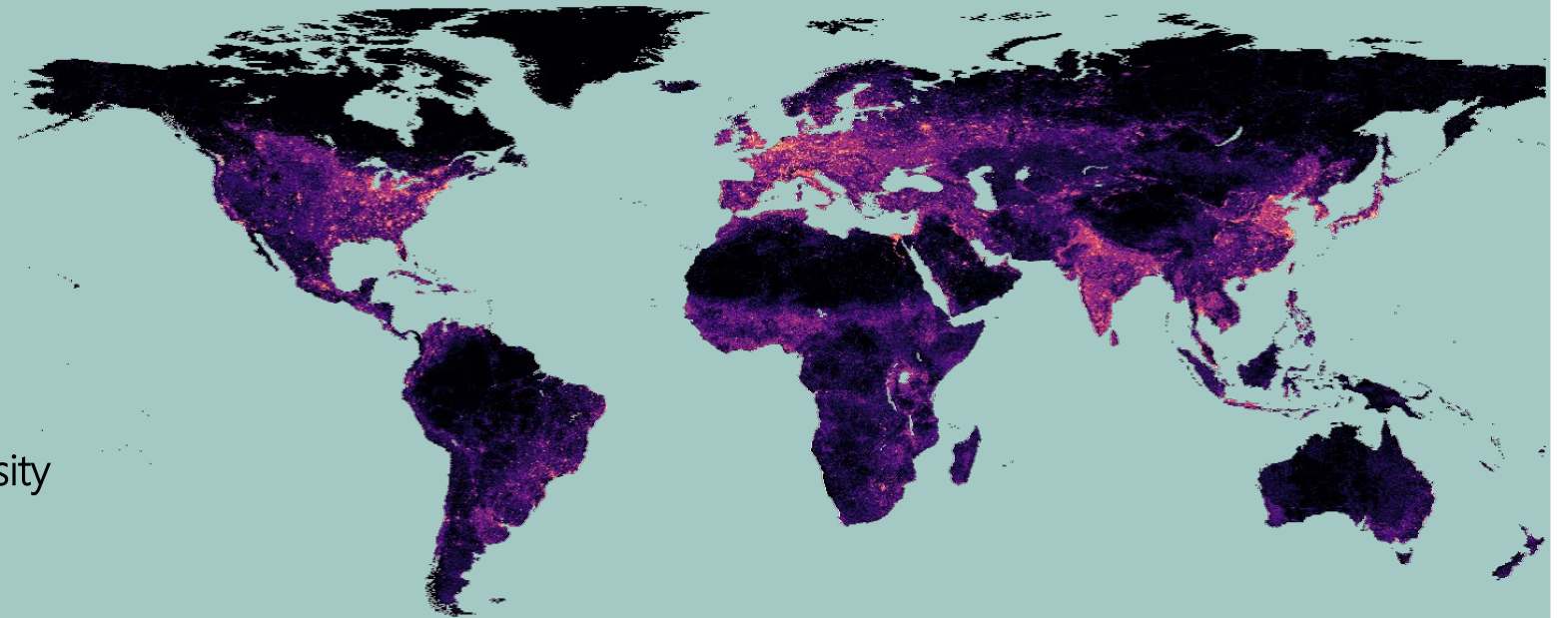
METHOD

INDICATORS : Human FootPrint

UNBL Map of the human footprint on biodiversity

- Qualitative score out of 50
- 1 km spatial resolution
- Temporal resolution: 2013

=> Take into account the threat of the intensity of ecological barriers to biodiversity mobility between patches and biomes.



https://map.unbiodiversitylab.org/earth?basemap=grayscale&coordinates=24.5034027,18.8405286,2&layers=human-footprint-2000-2013_100

METHOD

INDICATORS : Structural connectivity

Assessing the structural connectivity quality of within habitat patches :

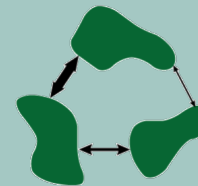
- Number of patch
- Total edge length of the class
- Degree of aggregation of the class
- Area ratio of patches in a class
- Probability of habitat diversity



Assess the quality of species mobility via connectivity between patches :

- Spatial contiguity of patch
- Average distance to the nearest neighbour of each patch

+ Percentage of landscape occupied by the natural classes



METHOD

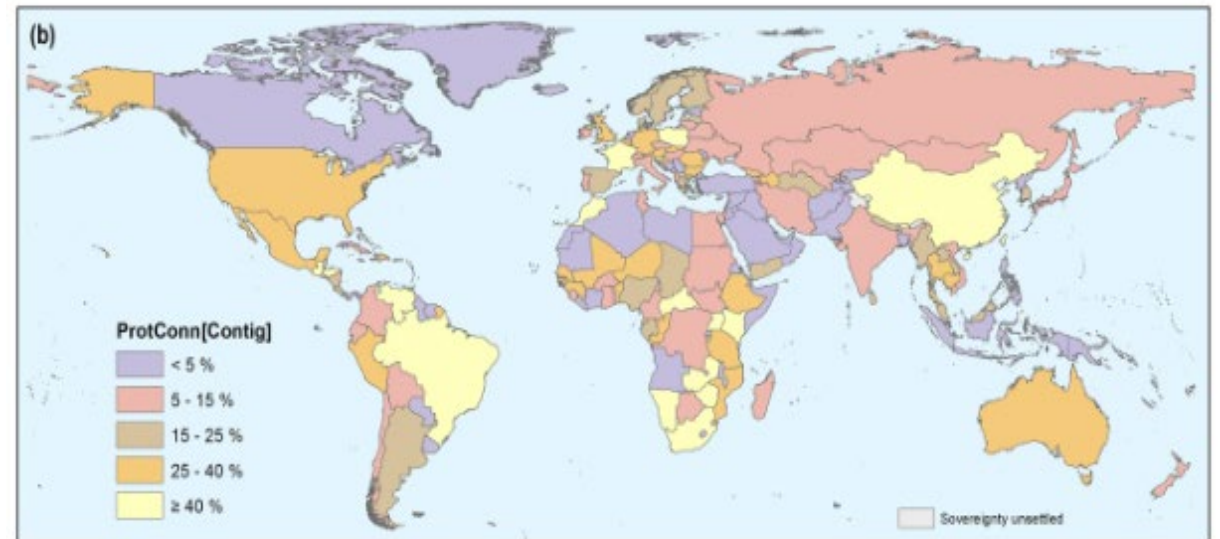
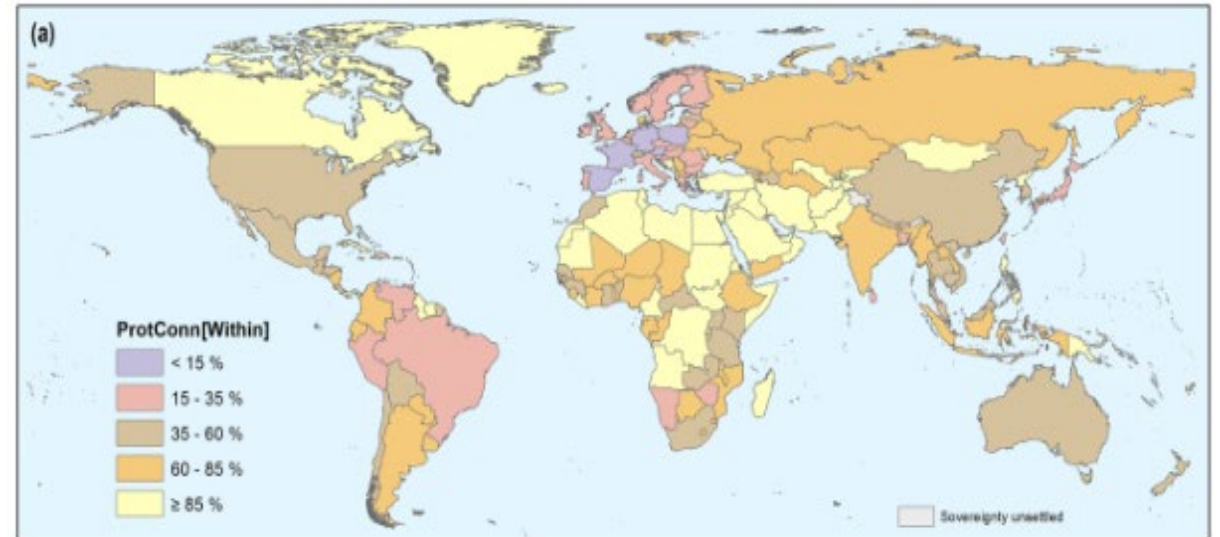
Inspiration

To build our equation we based ourselves on the structure of an existing model: **ProtConn**

This is a **protected area connectivity** indicator that assesses the two dimensions of structural connectivity (inter- and intra-parcel) as well as country boundaries.

Why not use this data?

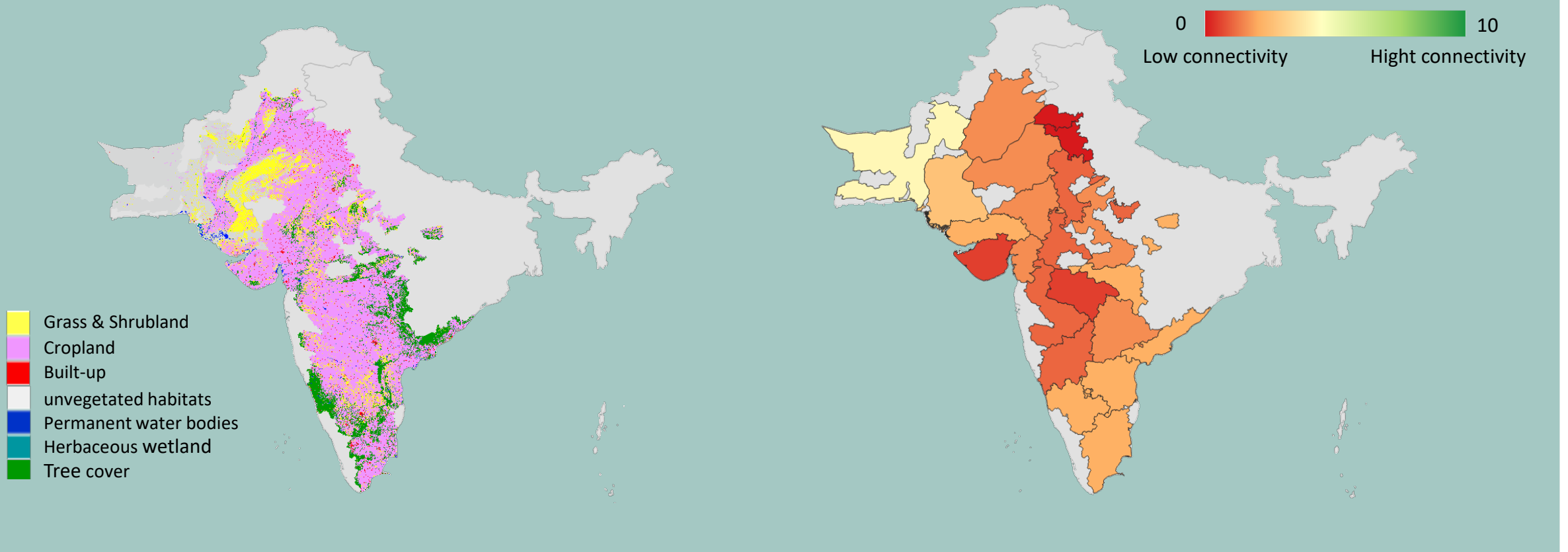
- Only considers protected areas
- Is not contextualized
- Does not consider anthropogenic threat

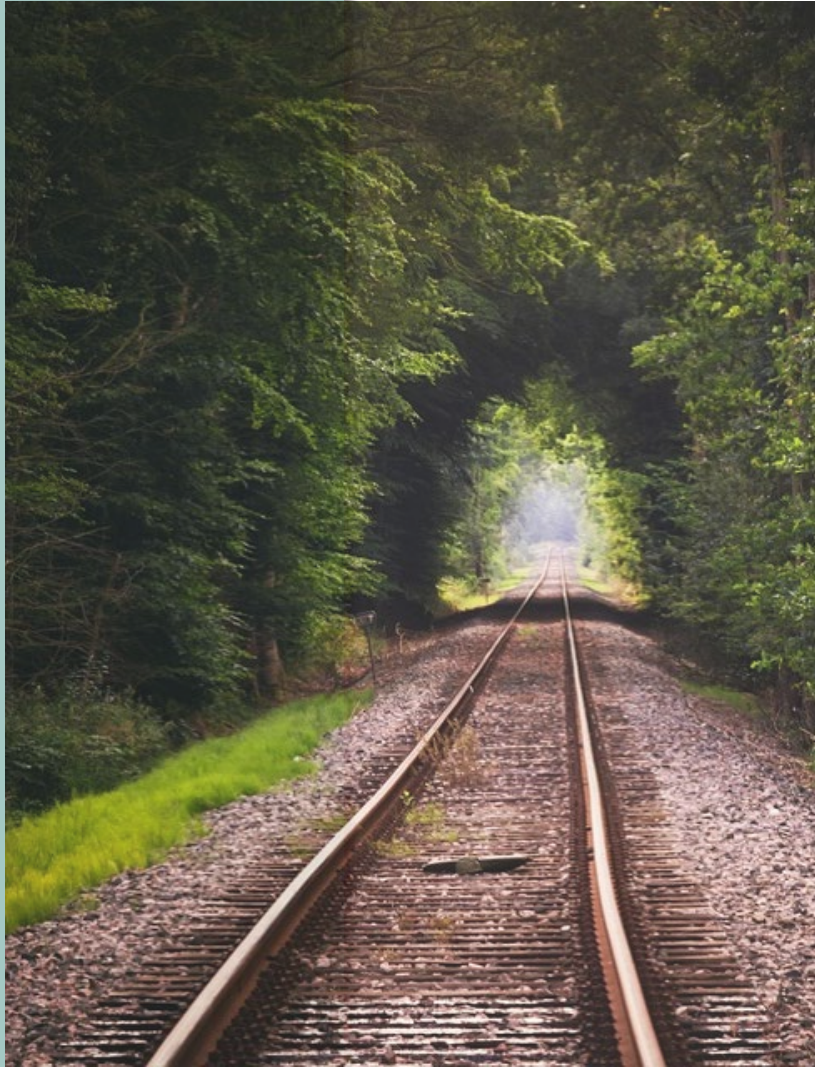


RESULTS

Sample: regions in India and Pakistan

Cotton





PRESPECTIVES

Evolution of the method

As we developed our method, we encountered some technical and computer obstacles. The size of our study areas is too large for the performance offered by the landscapemetrics.

- Further **study the variance** of each indicator to assess the reliability of our results.
- Recalculate connectivity at the **province level**, for better consistency with land use.
- Ideally: set up a validation study in the field.

An aerial photograph of a dense green forest with soft, white clouds scattered throughout. In the center, there is a circular logo with a white outline, containing a white silhouette of a coniferous tree. The text "THANK YOU" is overlaid in a bold, black, sans-serif font across the middle of the image, partially overlapping the tree silhouette.

THANK YOU