III INTERNATIONAL CONGRESS
ON SUSTAINABLE DEVELOPMENT, LANDSCAPE PLANNING AND TERRITORIAL GOVERNANCE

III International Congress on Sustainable Development, Landscape Planning and Territorial Governance

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A PROPOSED BIODIVERSITY OBSERVATORY IN THE CONTEXT OF GOVERNANCE CHANGE FOR THE NATURAL PARK OF *TEJO INTERNACIONAL*

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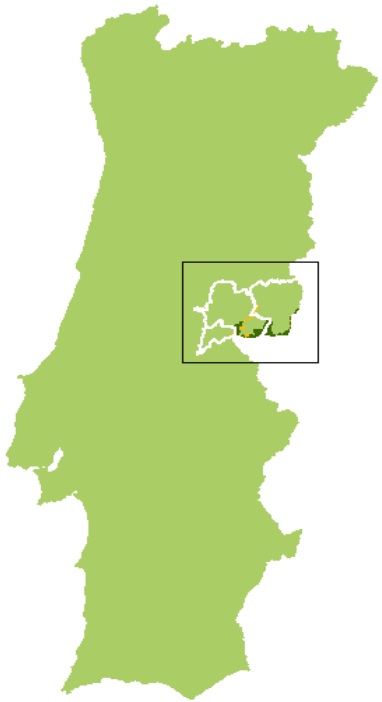
[3]QRural - Qualidade de Vida no Mundo Rural

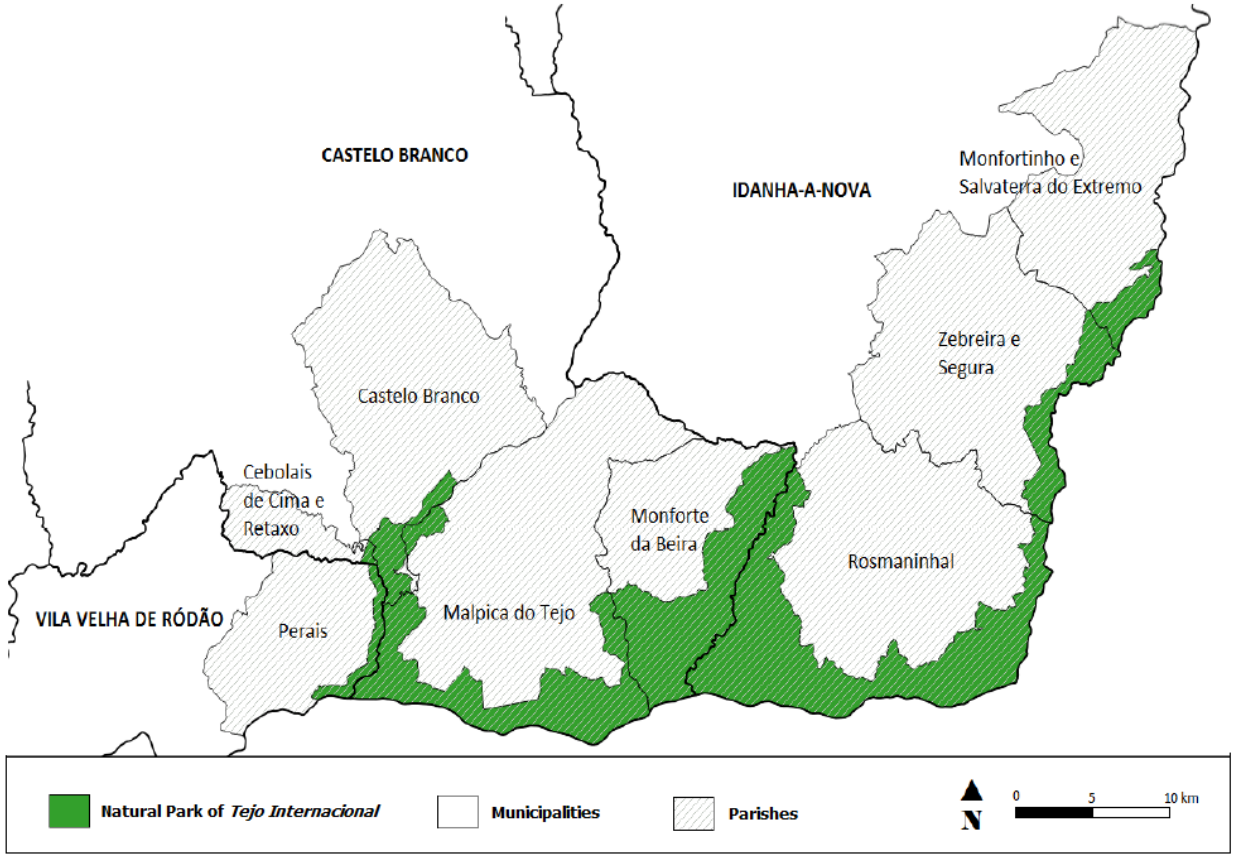
[4]VALORIZA - Centro de Investigação para a Valorização de Recursos Endógenos

[5]CICS.NOVA - Interdisciplinary Centre of Social Sciences

Framework

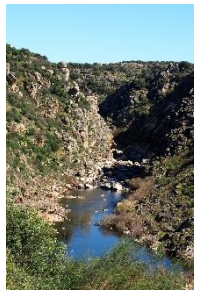
Straddling the frontiers of two neighboring countries around the Tagus River, Portugal and Spain, the **Natural Park of *Tejo Internacional*** (PNTI) extends over an area of 26,490 hectares in the district of Castelo Branco, Portugal.





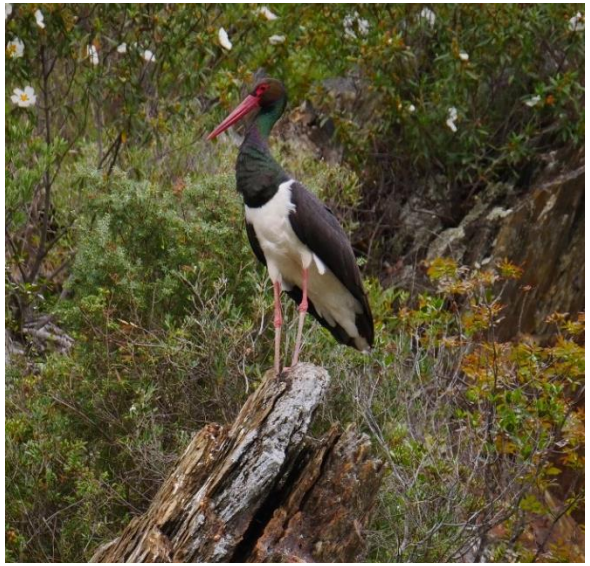
Framework

The vegetation of the Natural Park of *Tejo Internacional* (PNTI) is mainly typical of Mediterranean ecosystems, such as evergreen scrubland dominated by holm oaks and wild olive trees, with a mosaic of thermophilic formations, bush formations, and riparian vegetation. In this territory 726 taxa distributed by 98 botanical families have been identified to date, emphasizing the 51 endemic species detected.



Framework

The **PNTI** is well none in terms of its animal composition, including more than two hundred species of vertebrates. So far 179 species of birds have been inventoried in the Park area. Some of them with a high conservation status, such as the black stork, the imperial eagle, the black vulture, the Bonelli's eagle and the Egyptian vulture.



Governance

2000 - The Natural Park of *Tejo Internacional* (PNTI) was created - Institute for the Conservation of Nature and Forests;

2008 - Approval of the first PNTI Land Use Plan;

2017 - PNTI Collaborative Management Pilot Project was implemented

Partners:
Municipalities (Castelo Branco, Idanha-a-Nova and Vila Velha de Ródão), the Institute for the Conservation of Nature and Forests, Quercus, the Polytechnic Institute of Castelo Branco and the Business Association of Beira Baixa.

2019 - DL n.º 116/2019 - National co-management rules for protected areas, based on the experience and results of the PNTI Pilot Project.

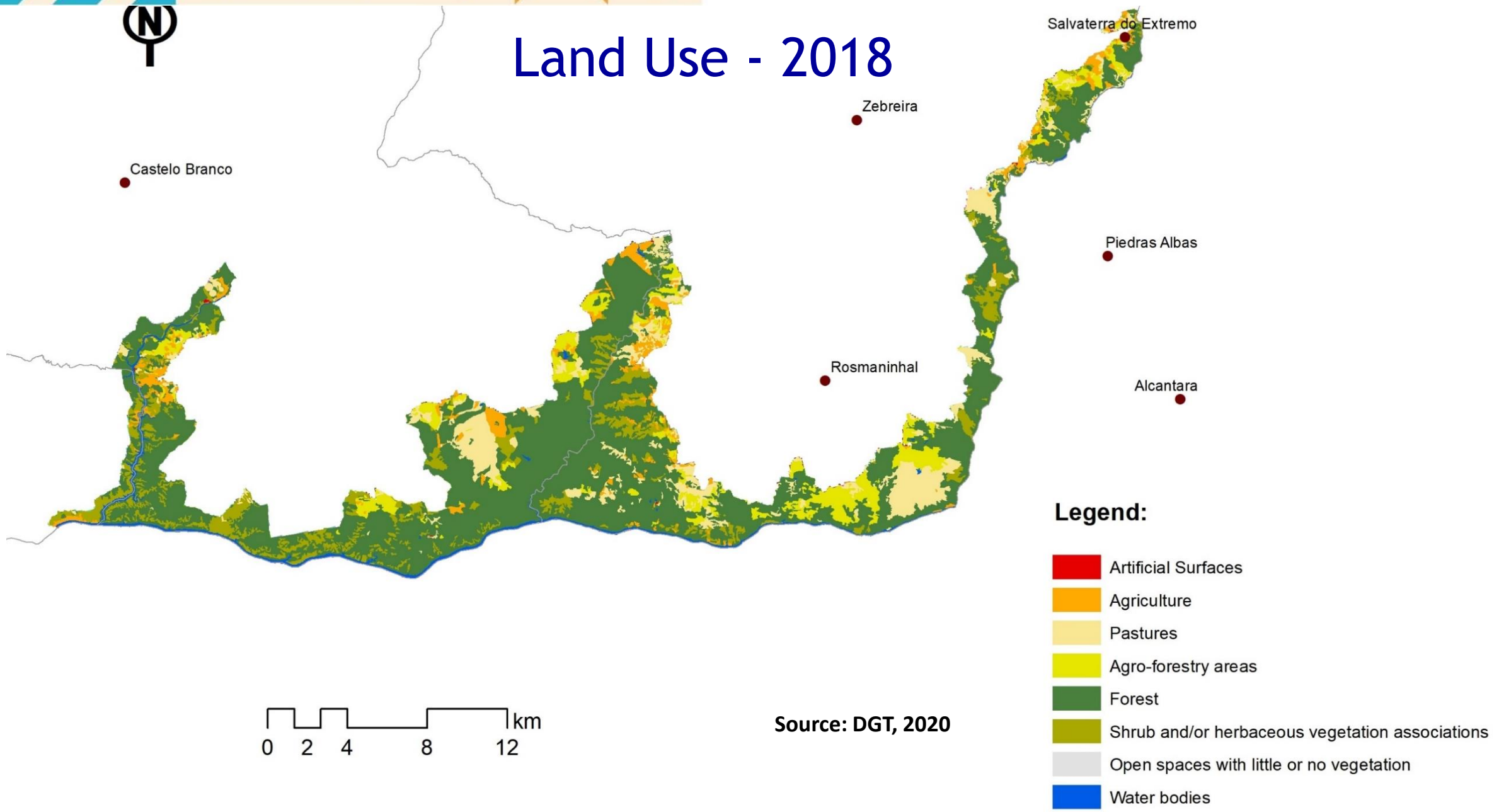
Governance

PNTI Collaborative Management Pilot Project

Strategic axes:

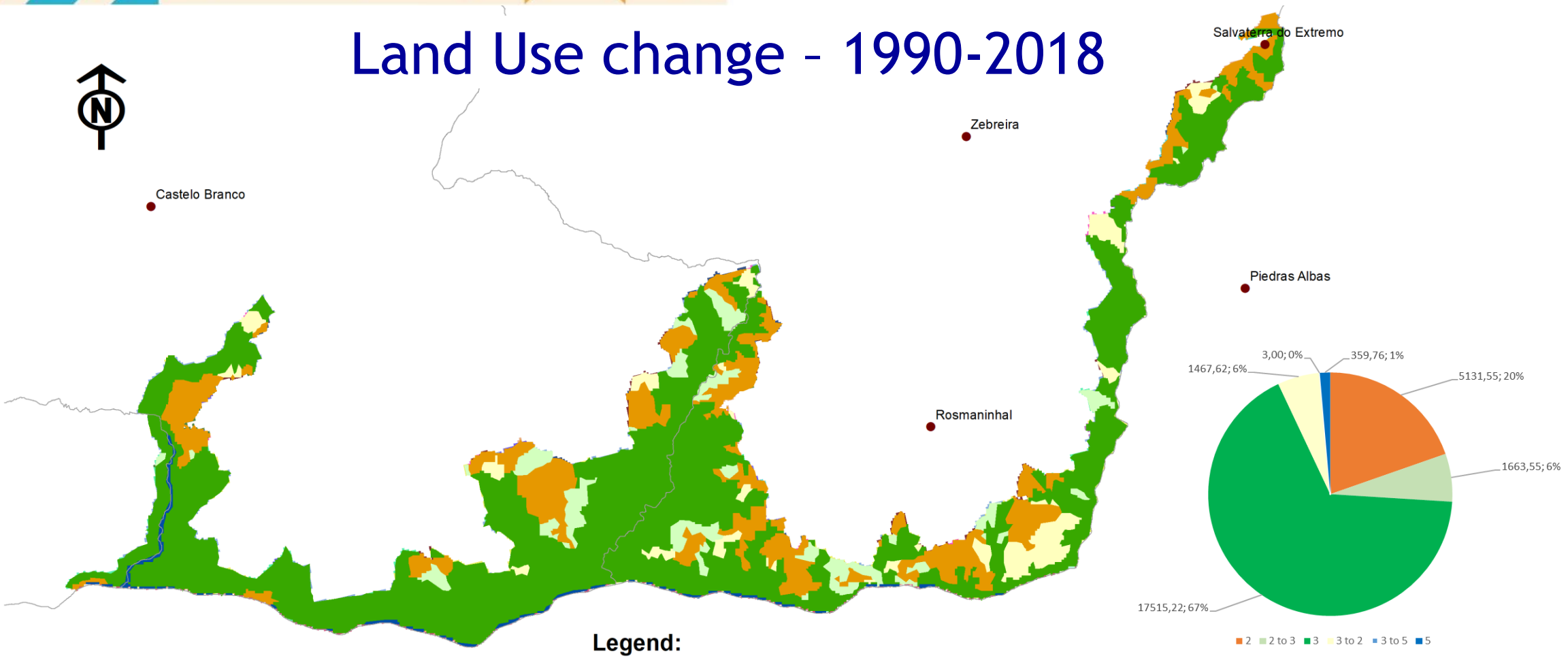
- Communication and promotion of a PNTI identity;
- Nature conservation and adaptation to climate change;
- Sustainable development and territorial valorization;
- Awareness, training and involvement of key actors.

Land Use - 2018



Source: DGT, 2020

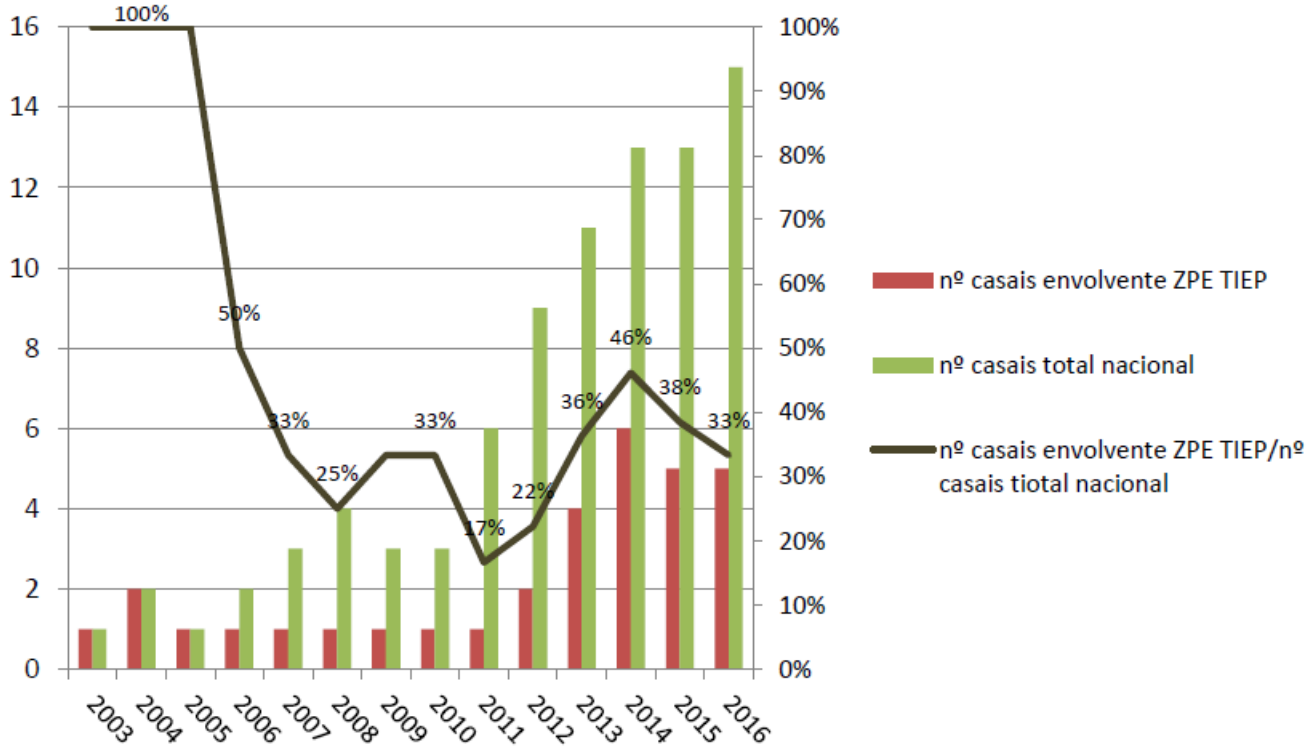
Land Use change - 1990-2018



Endangered bird species

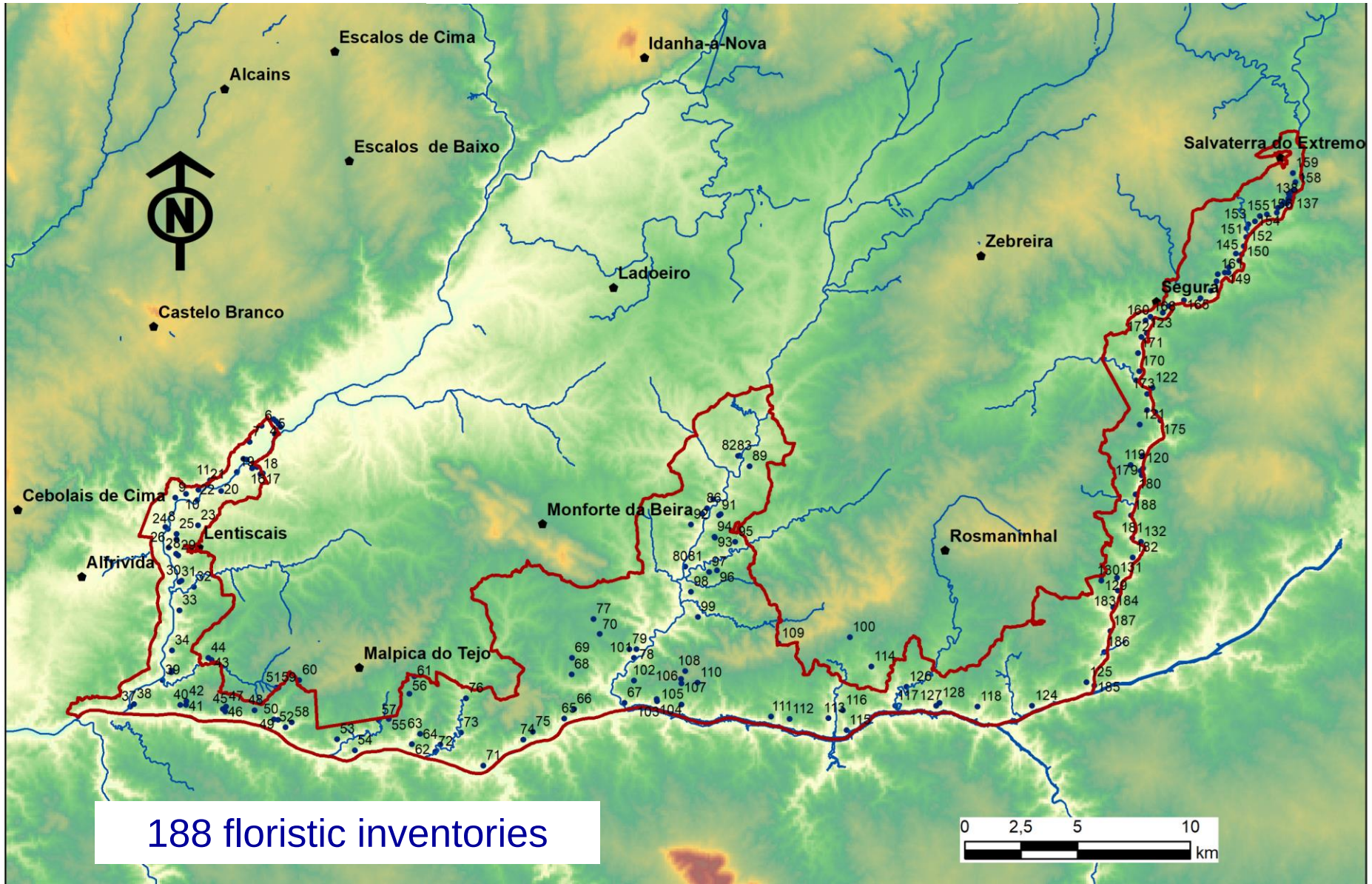
Espécie	Categoria de ameaça	Abundância na atual ZPE TIEP (casais)	Valores acrescidos pela ZPE alargada (casais)	Percentagem da população nacional na ZPE alargada	População nidificante nacional (data de compilação dos dados)
Águia-imperial-ibérica	CR	1	3 Território de nidificação e áreas de alimentação de todos os casais	33%	15 (2016) [4]
Abutre-preto	CR	10	1-2 Áreas de alimentação	91%	11 (2016)
Britango	EN	18	0 Áreas de alimentação	13,8%	80-84 casais (2000) [3]
Cegonha-preta	VU	23	2-4 Áreas de alimentação	25,7%	97-115 (2002-2004) [1]
Cortiçol-de-barriga-preta	EN		3-5 Locais de nidificação e invernada	Muito significativo regionalmente ; núcleo isolado	258 ind. [1]
Sisão	EN		5-15 machos territoriais Locais de nidificação e invernada de uma proporção muito significativa da população regional	Significativo regionalmente ; núcleo isolado	17500 machos [1].
Ganga	CR	8-10	Áreas de alimentação, inclusão da totalidade da área de nidificação e única área provável de invernada em Portugal	100%	13-17 (2013)
Tartaranhão-caçador	EN		Áreas de nidificação 3 a 5 casais		Não estimada
Adicionalmente:					
Águia-real	EN	8	0-1 Áreas de alimentação de todos os casais	12,5%	64-80 casais (2012) [2]
Águia de *Bonelli*	EN	7	0-1 Áreas de alimentação de todos os casais	5,4%	128-150 (2012) [2]

Iberian Imperial Eagle



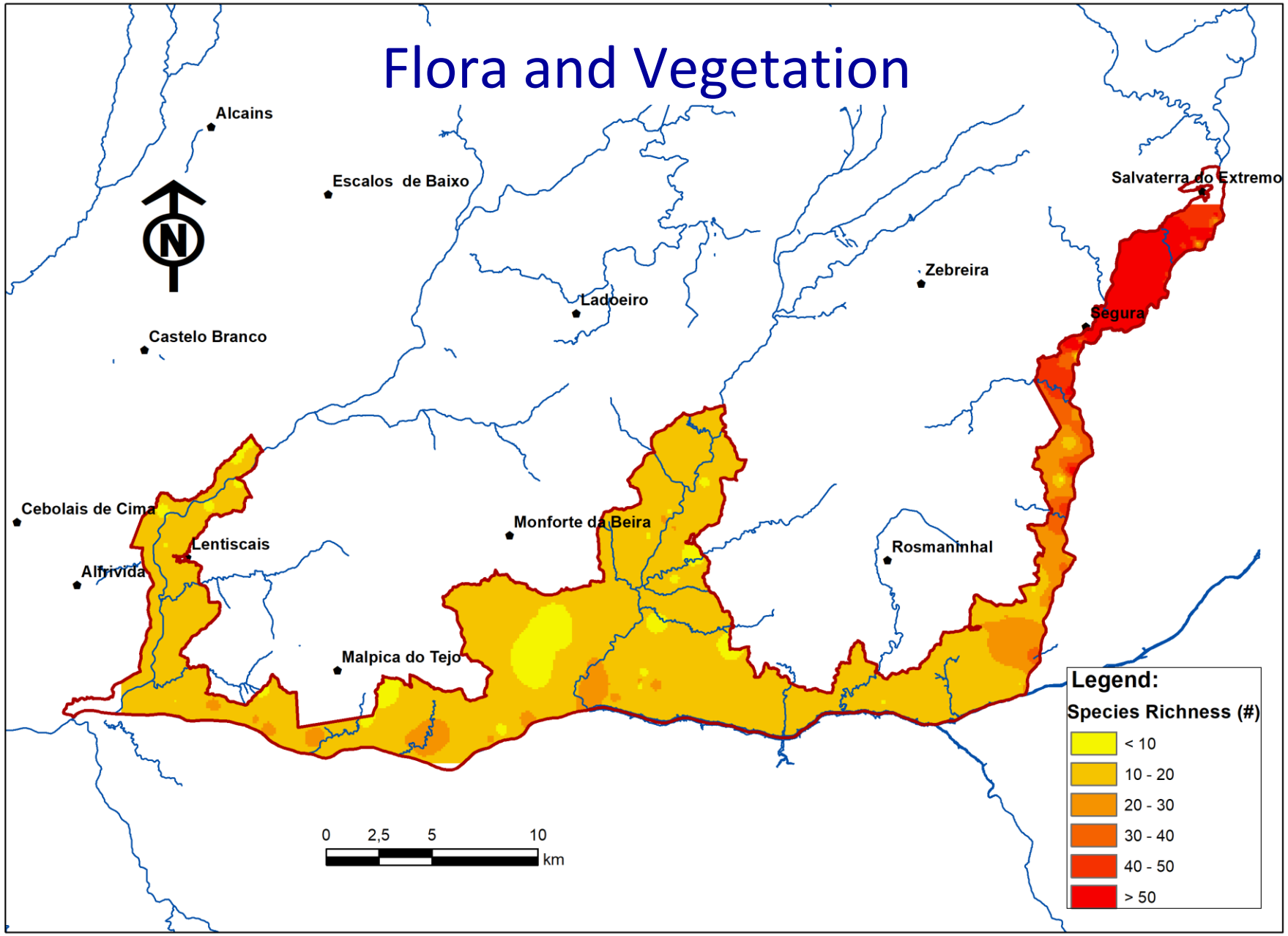
Source: ICNF, 2018

Flora and Vegetation

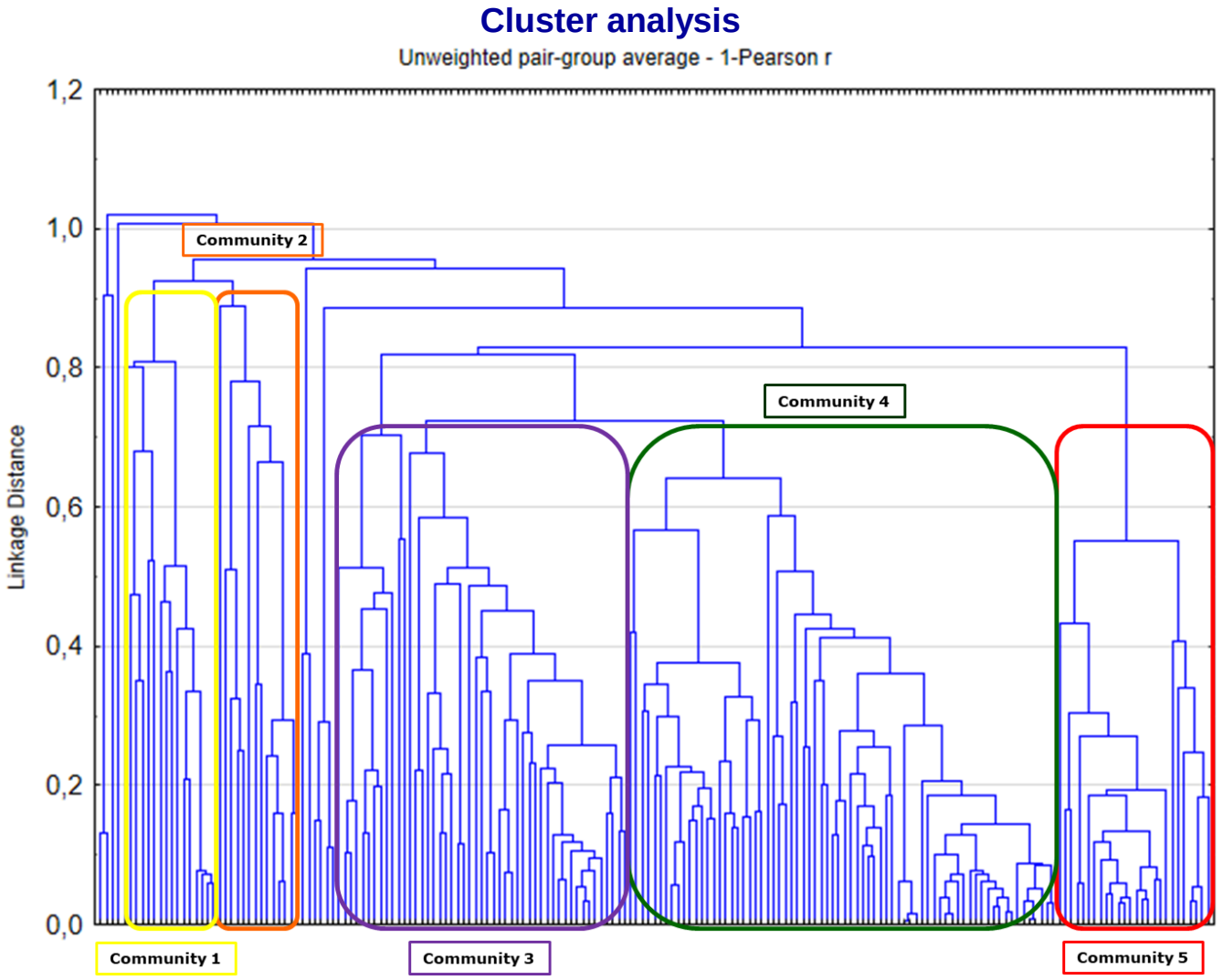


188 floristic inventories

Flora and Vegetation



Flora and Vegetation

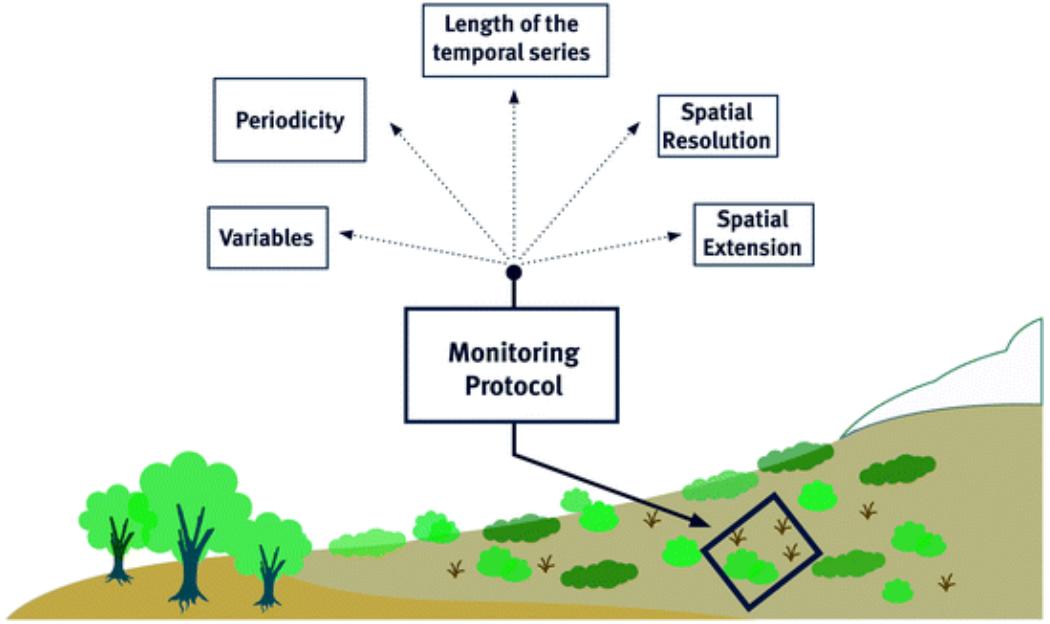


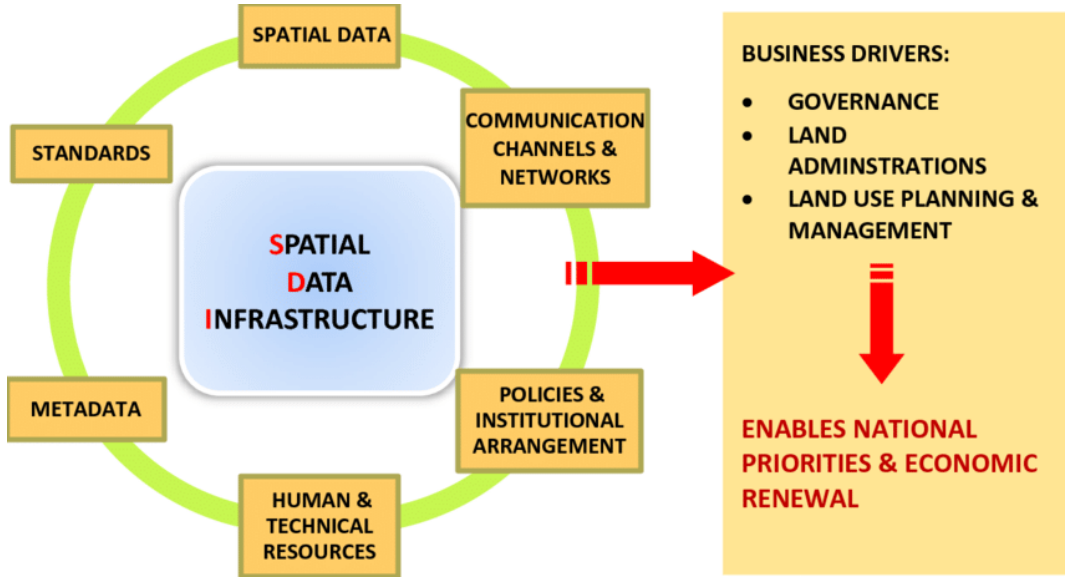
- **Community 1**: Different riparian vegetation types - (type 1) dominated by bushweed (*Fluggea tinctoria*), belonging to the community *Pyro bourgaeanae-Securinegetum tinctoriae*; (type 2) dominated by sage-leaved willow (*Salix salvifolia*), belonging to the community *Salicetum lambertiano-salvifoliae.*
- **Community 2**: Natural grassland communities with a high diversity of herbaceous species, belonging to different communities like *Trifolio cherleri–Plantaginetum bellardii*, *Bromo tectorum-Stipetum capensis* and *Phagnalo saxatilis–Rumicetum indurati.*
- **Community 3**: Low density holm oak forest (*Quercus rotundifolia*), belonging to the community *Pyro bourgaeanae-Quercetum rotundifoliae.*
- **Community 4**: Scrubs frequently associated to low density holm oak areas, dominated by gum rockrose (*Cistus ladanifer*), belonging to the community *Genisto hirsutae-Cistetum ladaniferi.*
- **Community 5**: Tall scrubs dominated by species like retama broom (*Lygos sphareocarpa*) and Portuguese broom (*Cytisus striatus*), belonging to the community *Cytiso multiflori-Retametum sphaerocarpae.*

PNTI Biodiversity Observatory

Aim:

To implement a LTER (Long Term Ecological Monitoring System) based in a Spatial Data Infrastructure (SDI) to evaluate the ecosystem supporting service Biodiversity, associated with the different land use models at the landscape level and management units' level.





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PNTI Biodiversity Observatory

Objectives:

1. To monitor the landscape structure change in the territory of PNTI;
2. To propose and implement a regional protocol for the collection of information on biodiversity in agroforestry environments (birds, carabids, vascular plants and mycological flora);
3. To relate the variation in biodiversity indicators with the structural, technical and economic characteristics of the management units and the main disturbance factors for ecosystems in the Park;
4. To identify and characterize the different models of agricultural, forestry and agroforestry exploitation of the territory based on a set of technical-economic variables;
5. Collection and processing of data regarding the existing flora and fauna diversity and statistical analysis in order to relate the indicators relating to biological communities with biophysical attributes and with agrarian exploitation models;
6. To monitor the impacts of PNTI management options in landscape and biodiversity.

PNTI Biodiversity Observatory

Expected results:

1. Detailed biophysical characterization of the PNTI area with identification of use typologies associated with agricultural and forestry exploitation of the territory;

2. Agro-economic characterization, through the survey of a set of potentially relevant variables (i.e., forest management, game management, land-ownership structure);

3. Collection of data on different biological groups, namely: birds, carabids, vascular plants and mycological flora. The collected data will be organized in a database associated with a GIS;

4. Knowledge of the effects of forestry, farming and agroforestry on the diversity of biotic communities in the PNTI area.

Thank you!

Acknowledgement

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