

Landscape Approaches; towards more sustainable governance of rural land-use in Mediterranean (Iberia)



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Évora, 26th October 2023



Structure & Contents

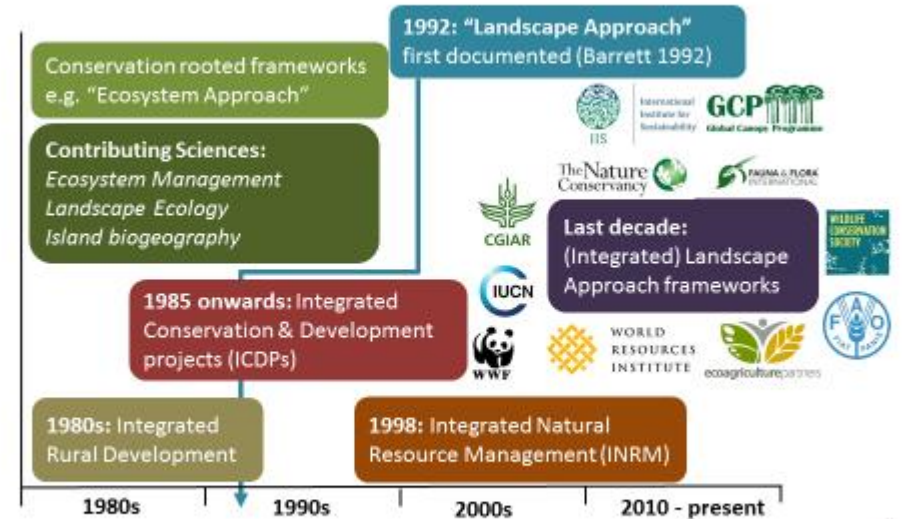
- **Landscape approaches: what, why, how and where?.**
- **Land-use changes, and related challenges, in Mediterranean Iberia.**
- **Opportunities.**
- ~~**Barriers Challenges**~~
- **Where to from here?**

Landscape Approaches (LAs).....

- aim to foster sustainable strategies that **reconcile agriculture, nature conservation and competing land-uses**,
- have been advocated as **strategic tools** for devising and implementing **novel governance strategies** for rural regions.
- testing and operationalization of LAs is however **still scarce across the Mediterranean** macro-regional context,
- This is despite the region being a **hotspot for the SDGs and 2030 agenda of the UN**, which condenses the majority of the challenges for which the Landscape Approach is directly relevant.

- Conciling land-use conflicts (food production vs biodiversity vs landscape/culture vs climate vs economic development).
- Multi-functionality.
- Acknowledge multiple forms of knowledge.
- Acting across scales (space & time).
- Adaptive Management (Resilience).
- Knowledge co-construction.
- Bottom-up + Top-Down.

Development of the "Landscape Approach"



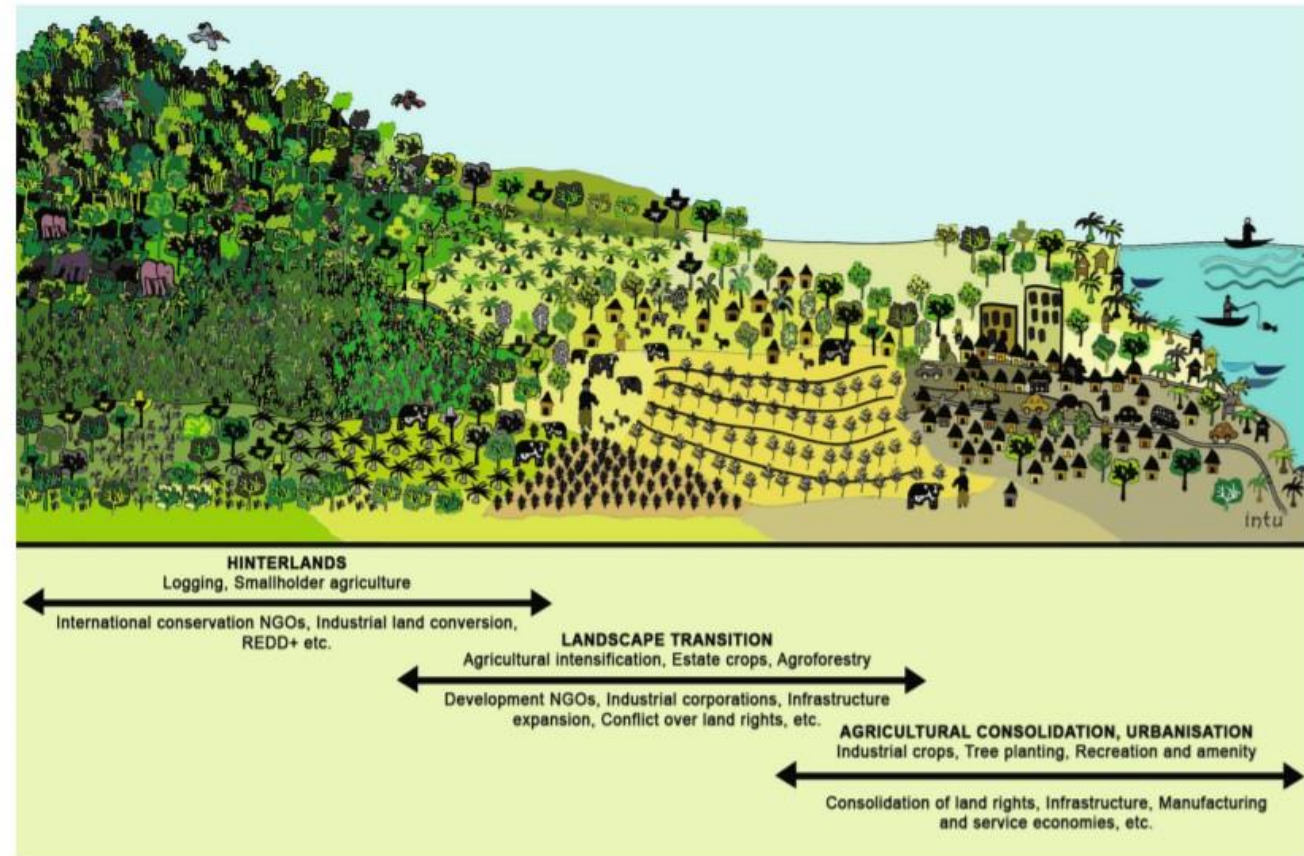
Center for International Forestry Research

<https://blog.worldagroforestry.org/index.php/2015/09/10/approach-a-landscape-from-the-ground-or-lose-your-way-in-words/>



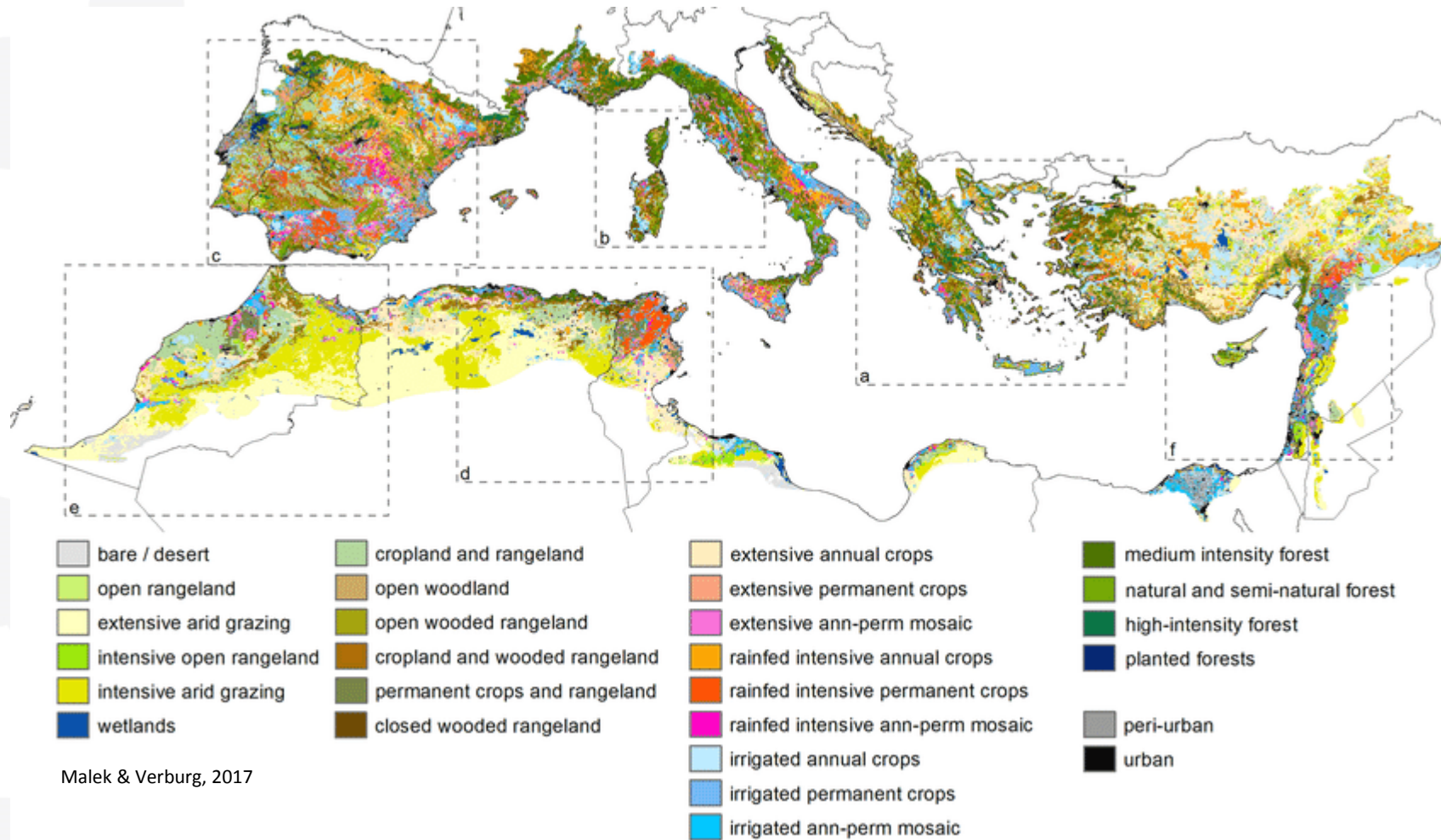


Sayer *et al*, 2013



Sayer *et al*, 2016

Land-Use Change in Mediterranean (Iberia)

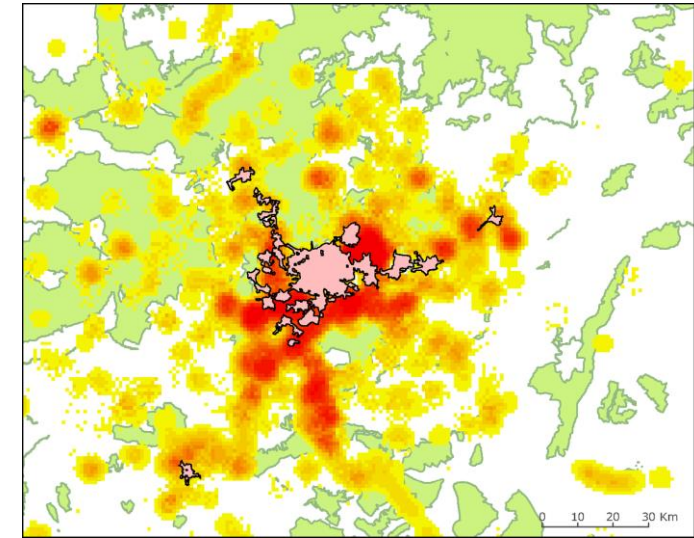
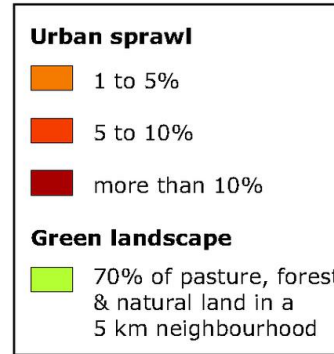


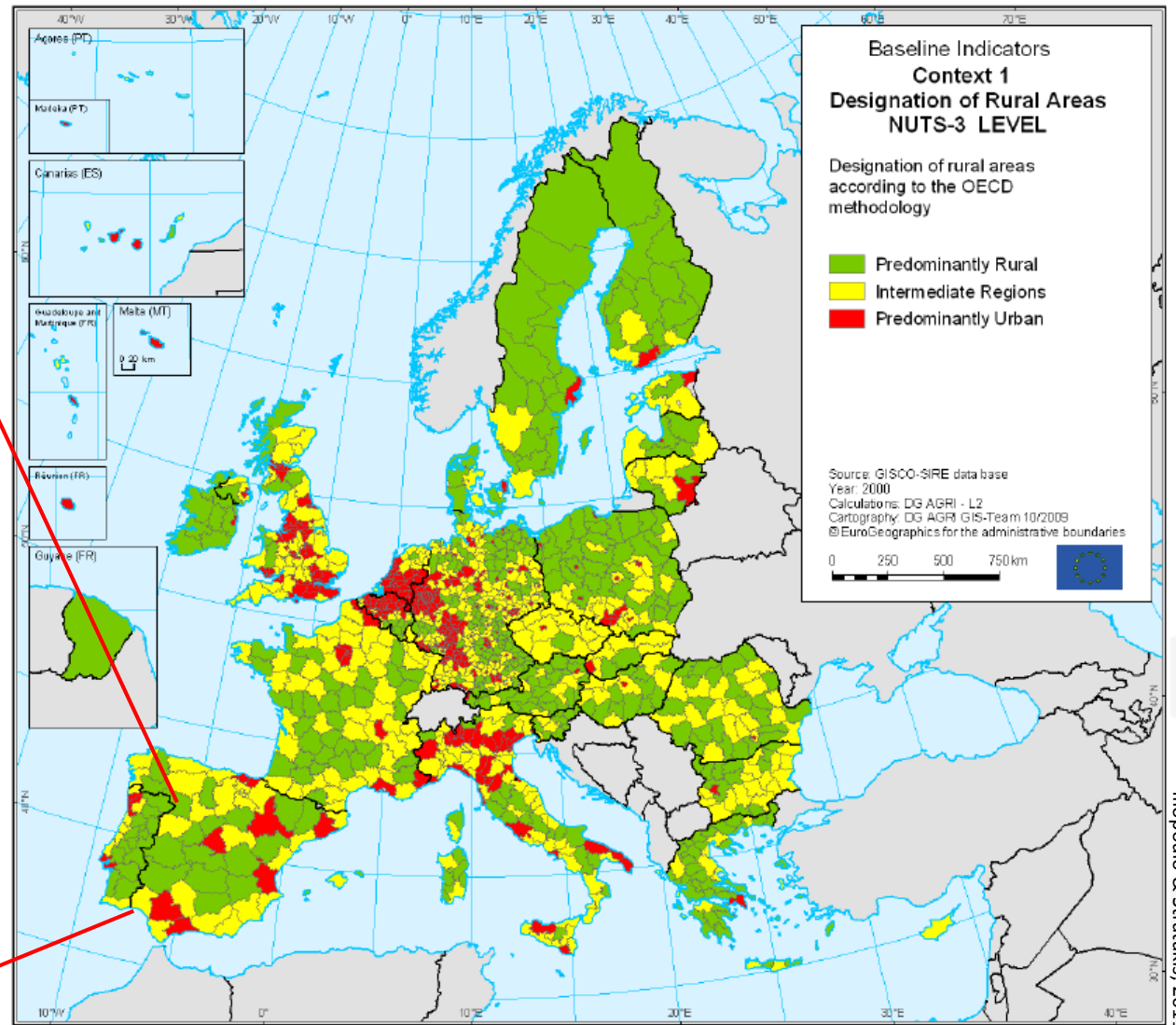
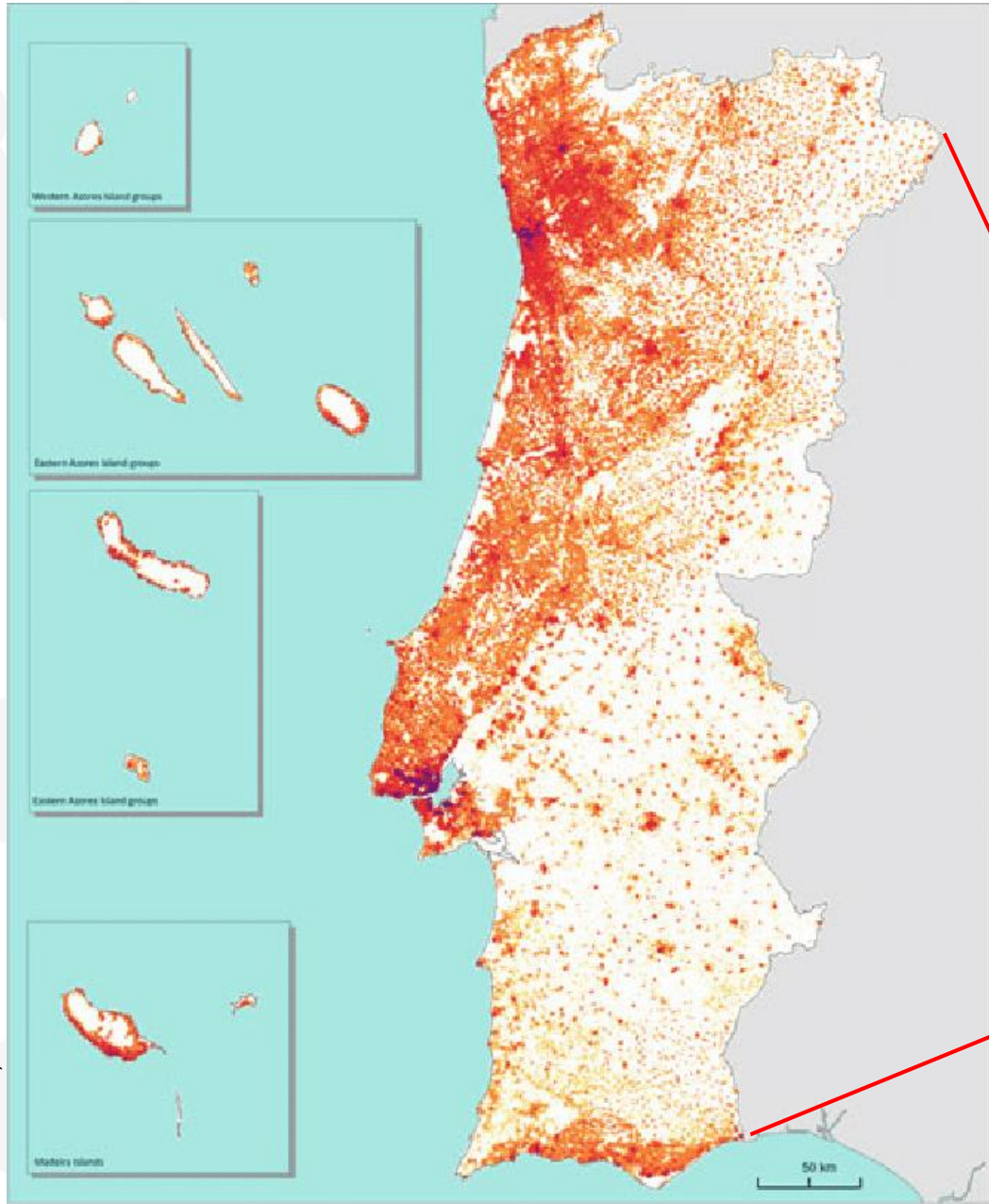
Malek & Verburg, 2017

A. Urban Sprawl

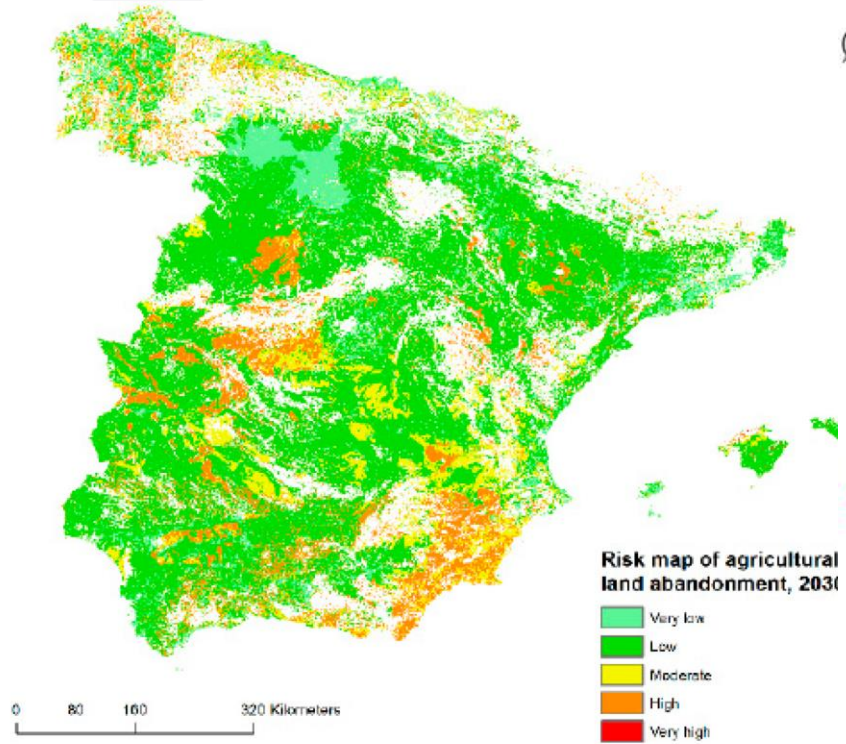


<https://www.eea.europa.eu/data-and-maps/figures/polarised-urban-sprawl-around-major-cities-and-the-coast-of-portugal-and-spain-1990-2000>



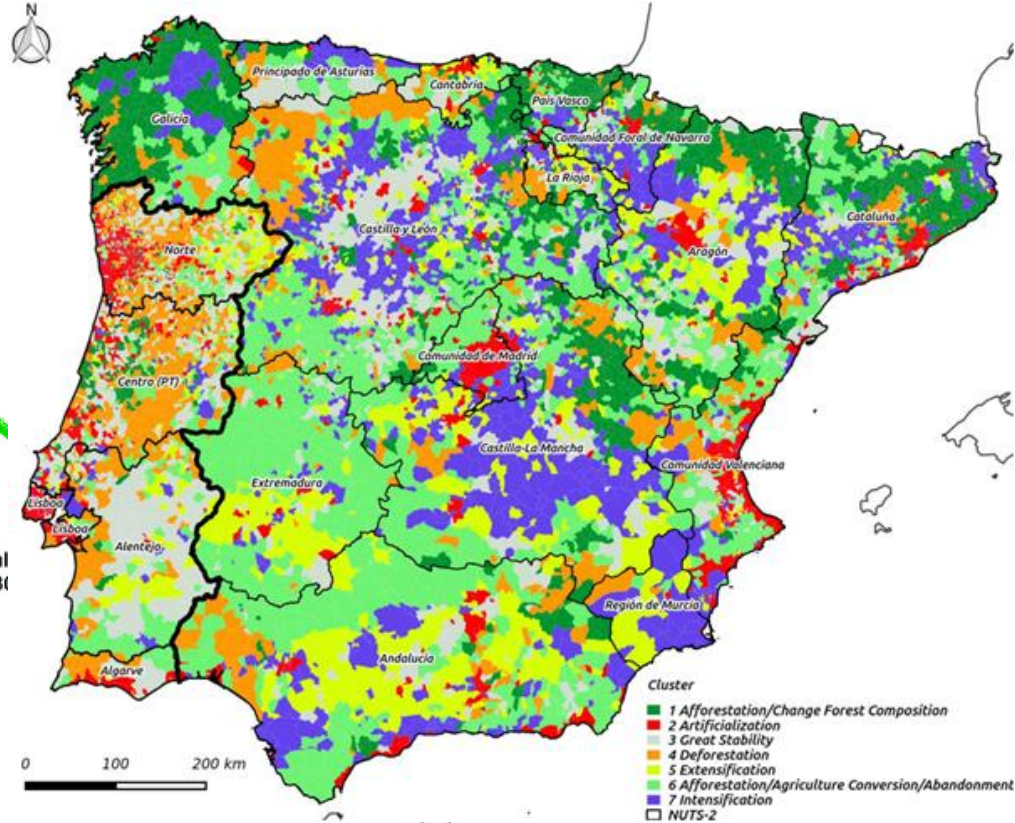


B. Land Abandonment

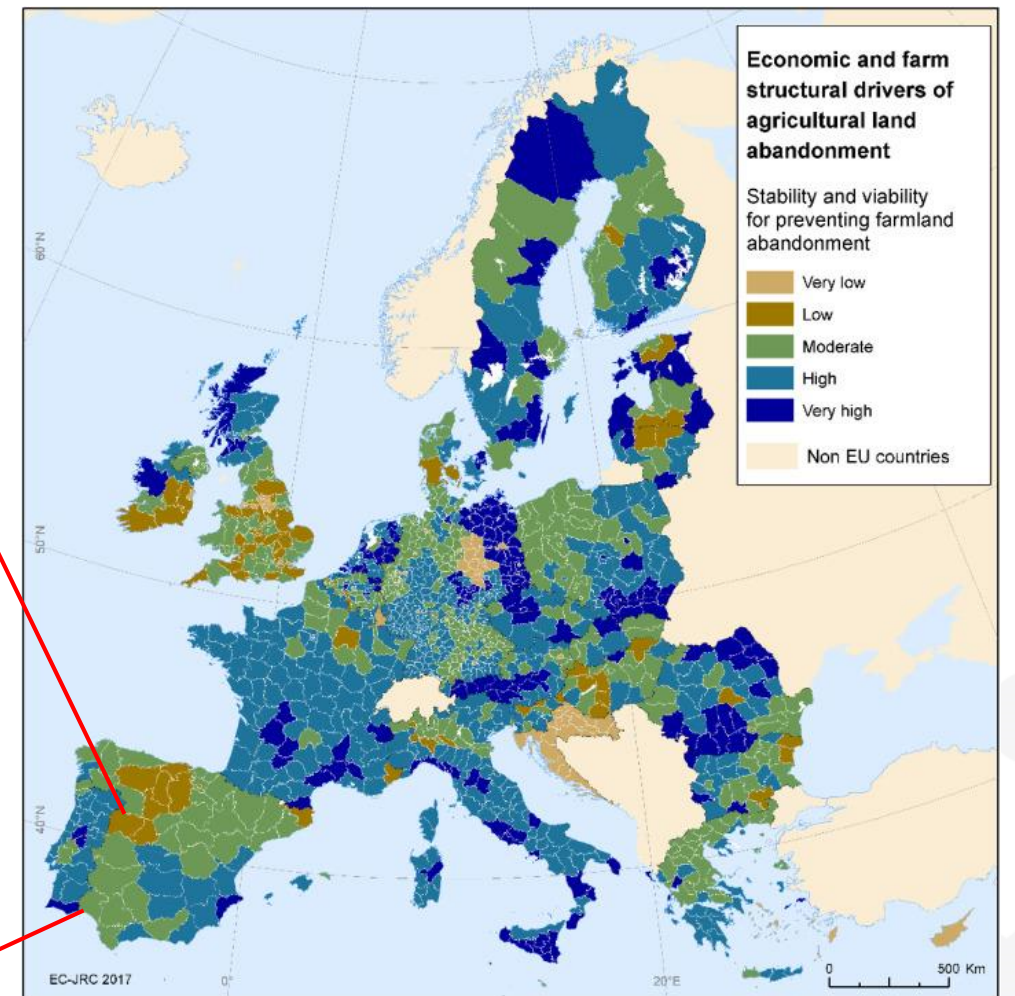
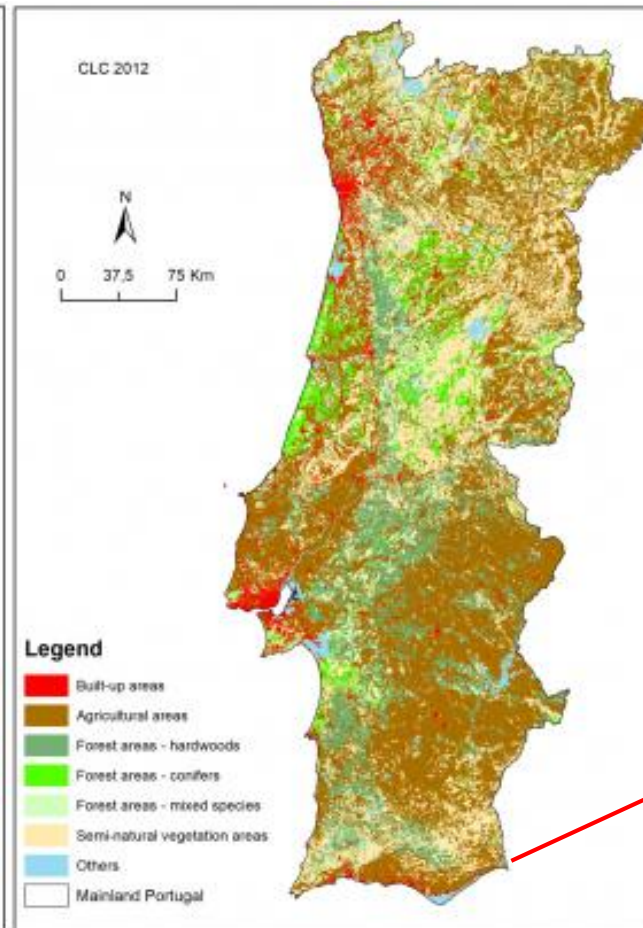
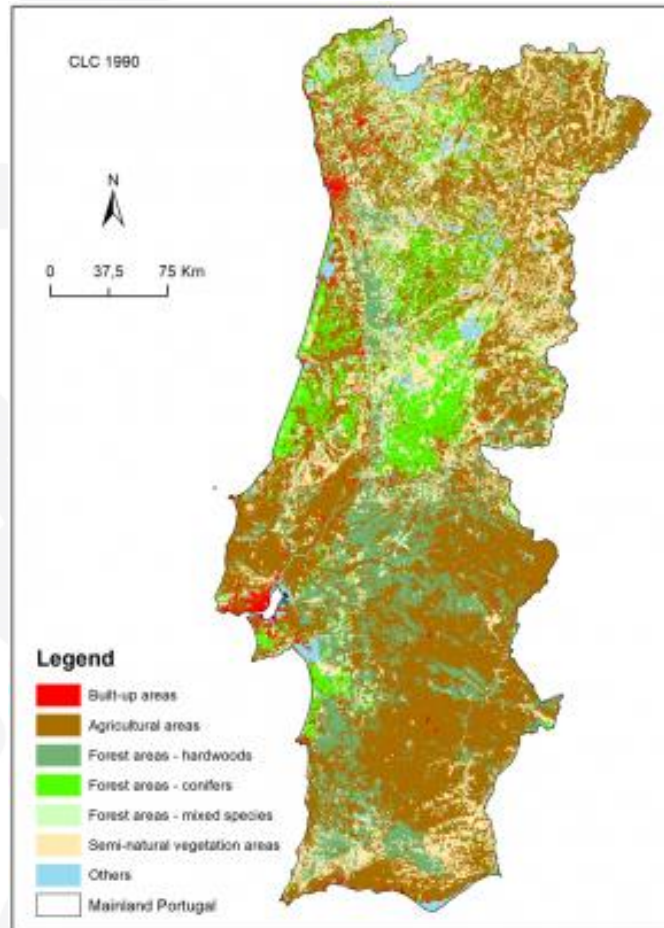


(a)

Perpiña Castillo et al, 2020

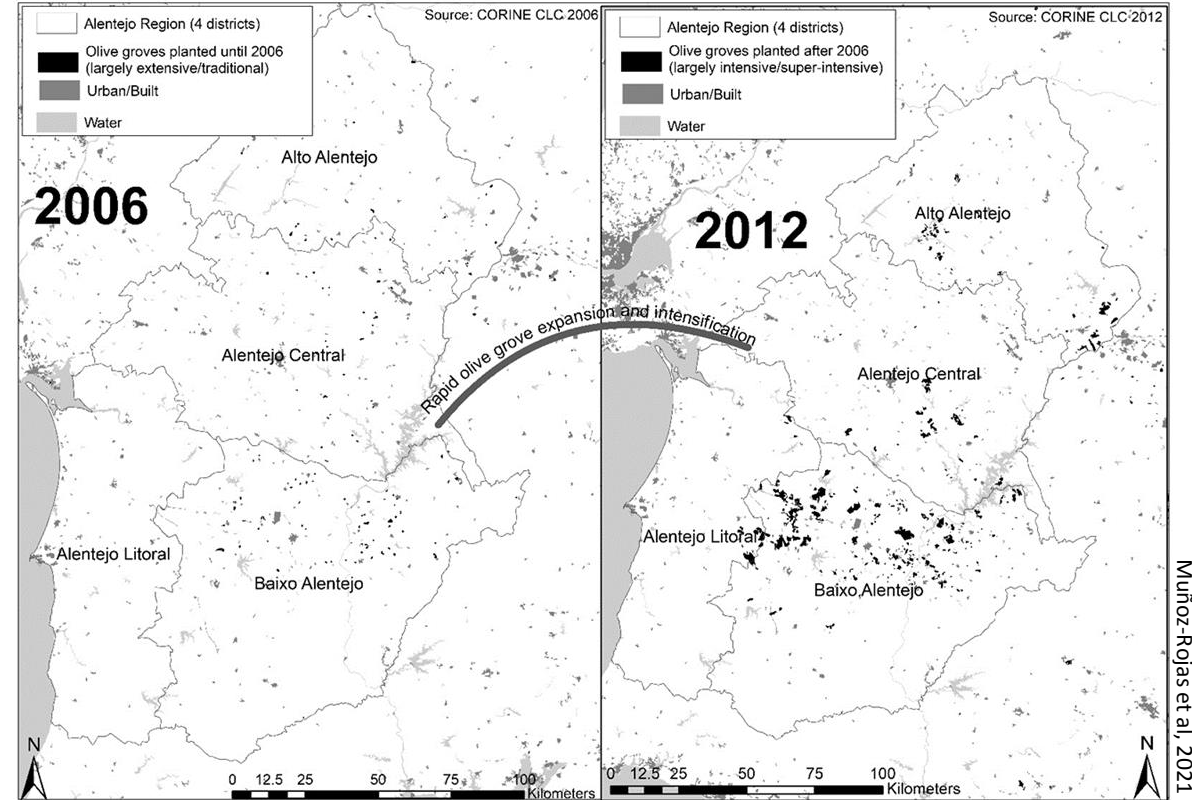


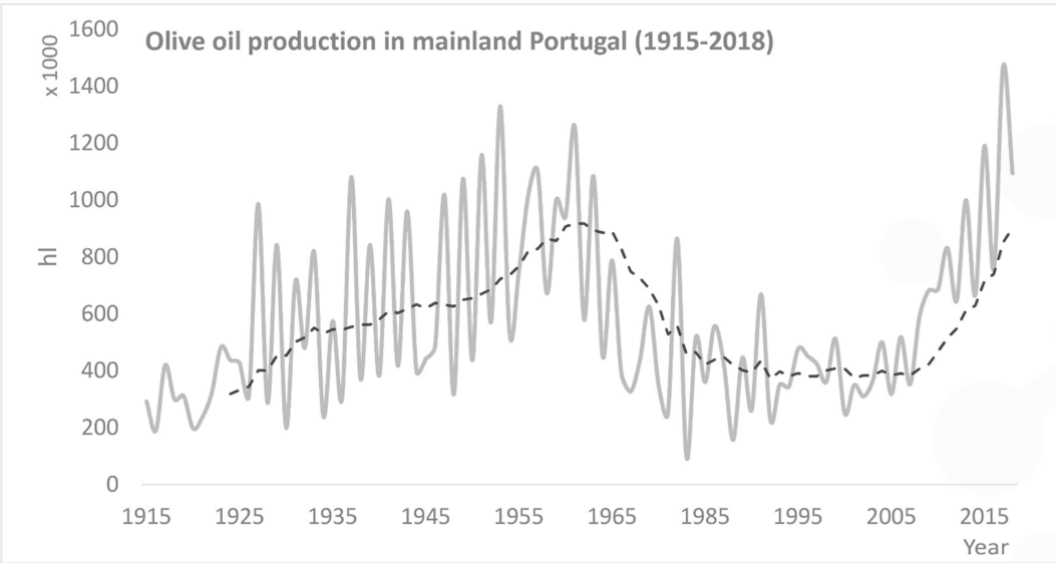
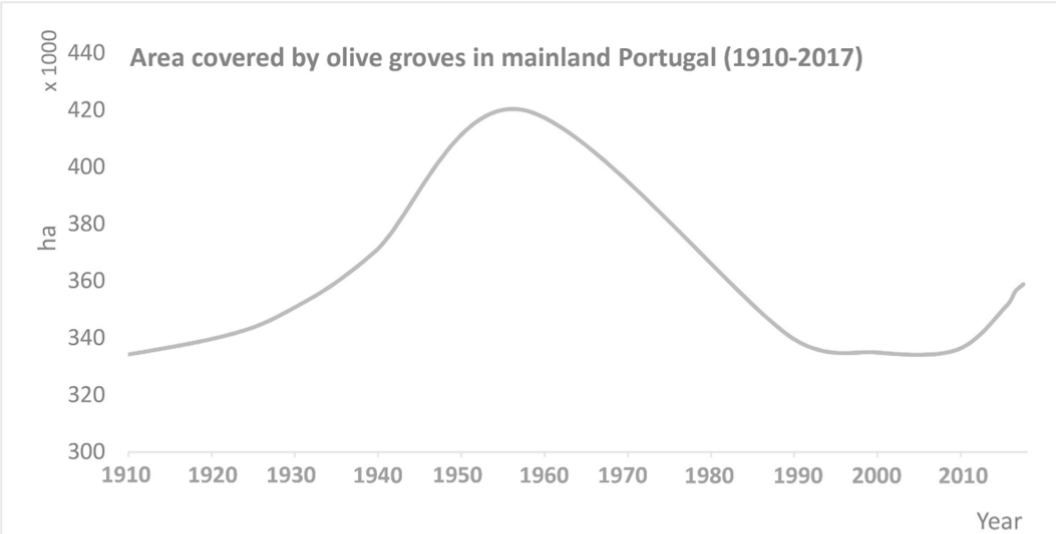
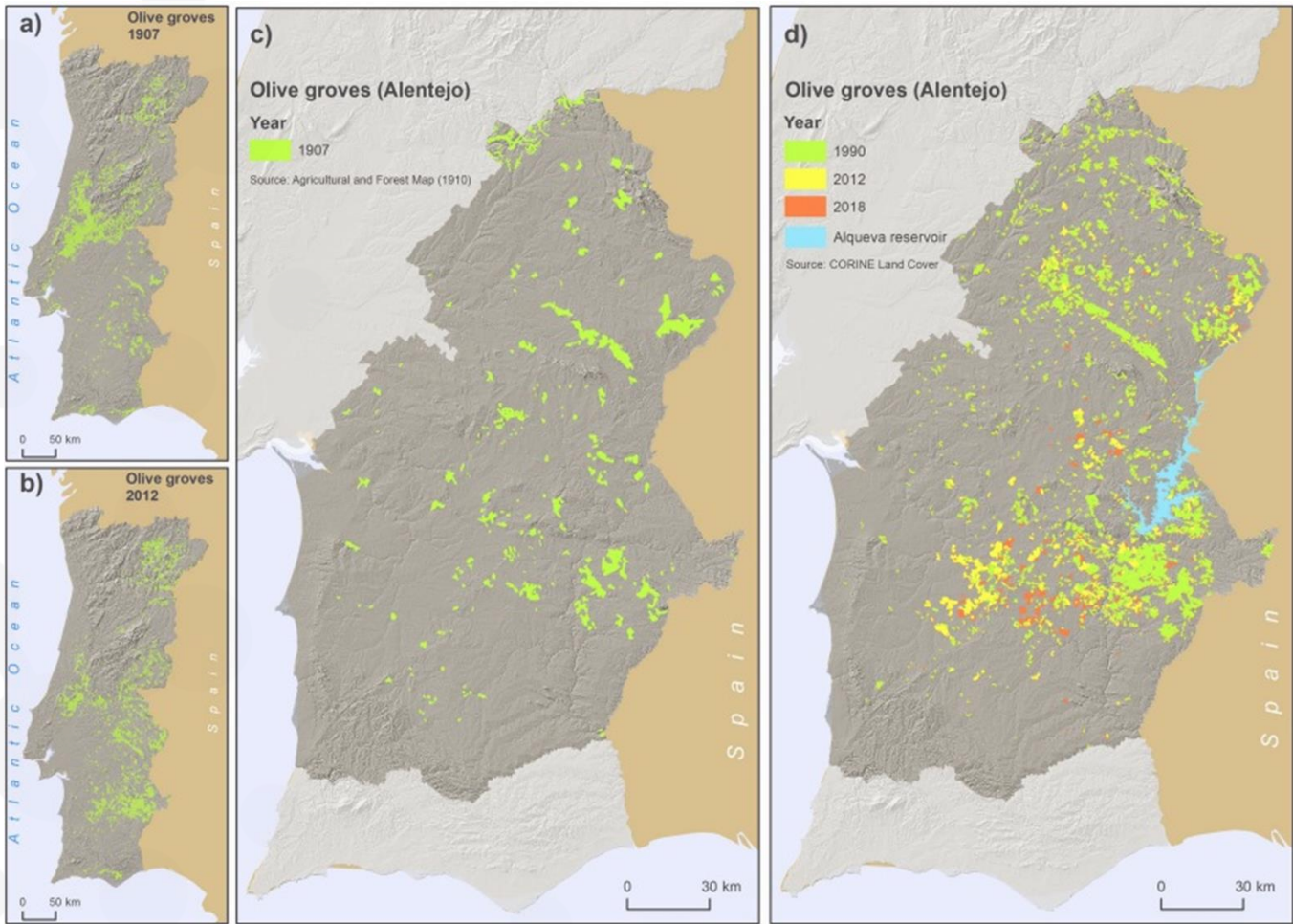
Fernández-Nogueira & Corbelle-Rico, 2018



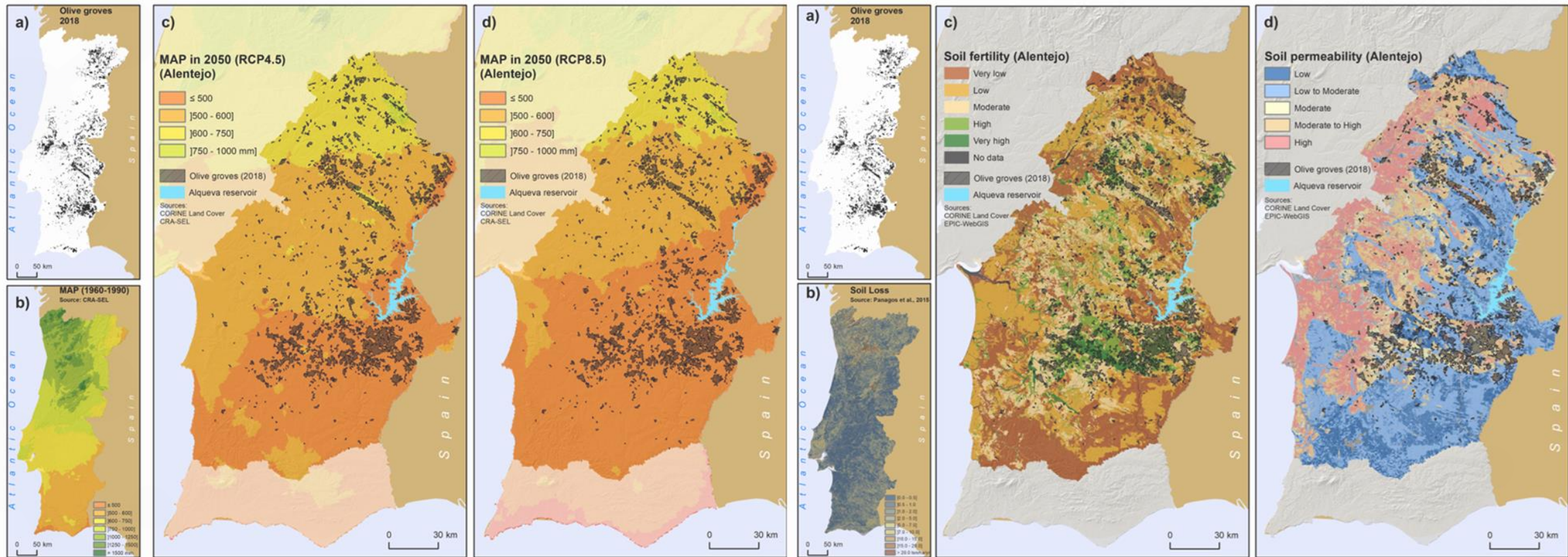
Bento-Gonçalves et al, 2018

C. Agricultural Intensification

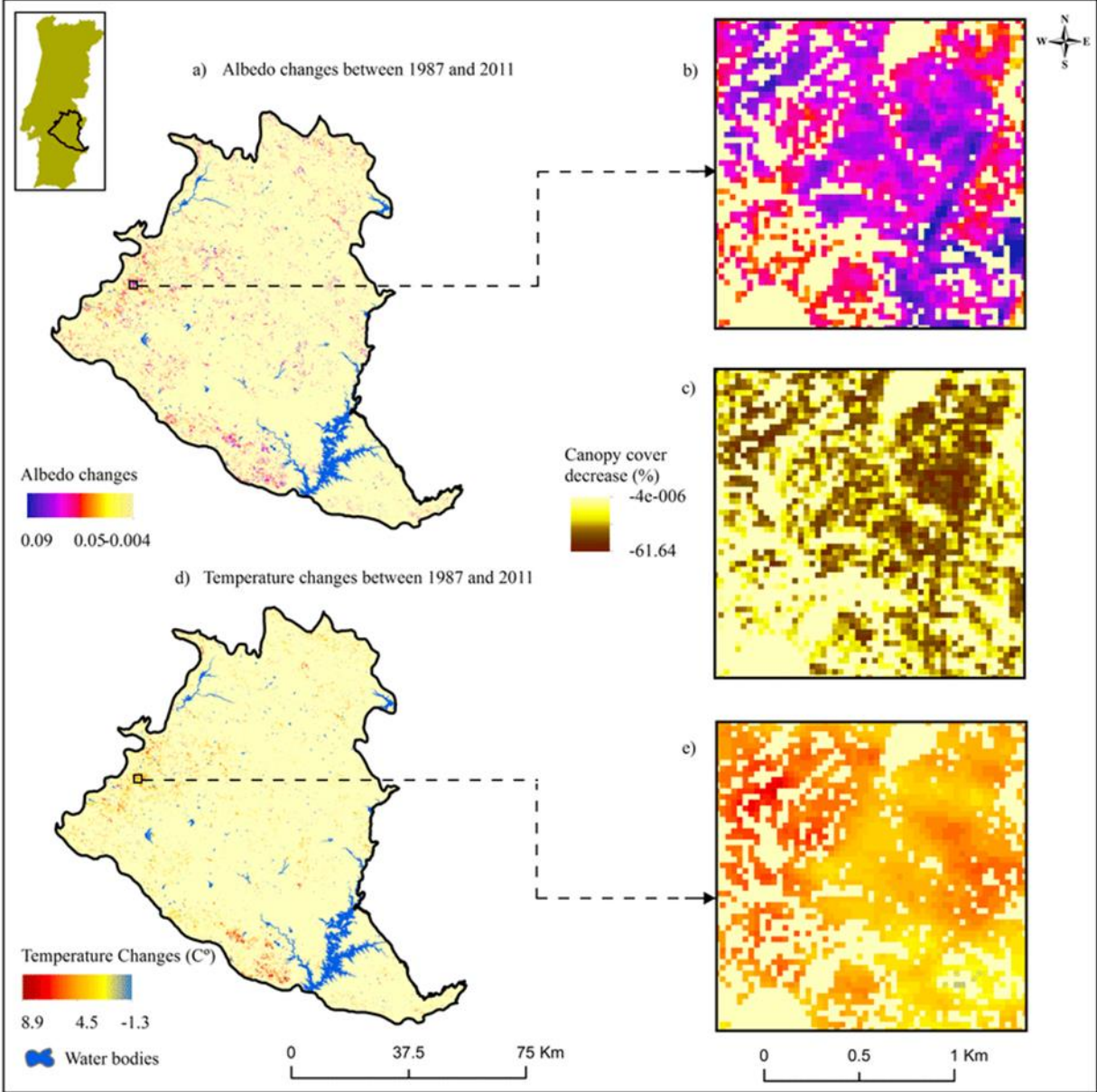




Muñoz-Rojas et al, 2023



D. Land Degradation.



Godinho et al (2015)



Prats et al, 2023

Google

Imagens ©2021 Google, Imagens ©2021 CNES / Airbus Maxar Technologies Dados do mapa ©2021 Portugal Termos

Soil erosion measuring and monitoring



Organic fertilizers



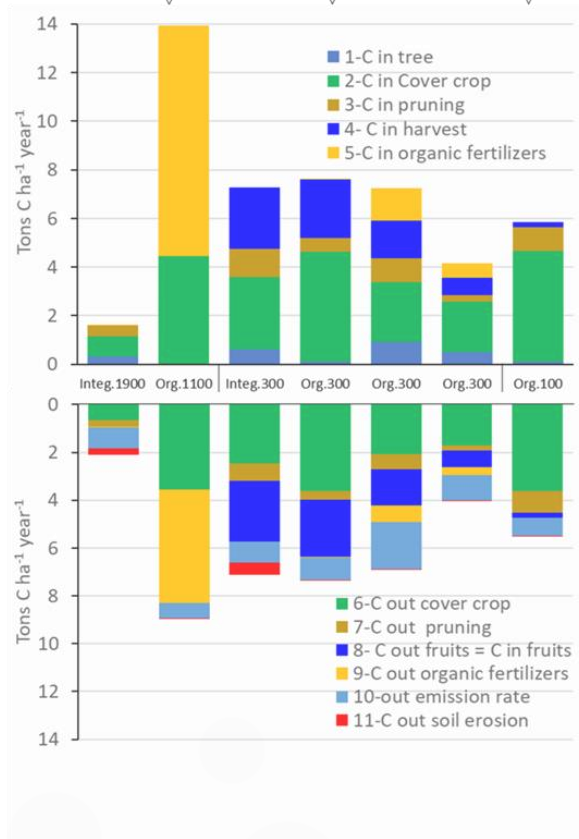
Calculate: Plant inputs -> Estimating total carbon

Cancel

Weather	SPQR	Plant input per month	January	0.004
Land management	SPQR.de		February	0.007
Measured Total Carbon	25.45		March	0.004
			April	1.002
			May	0.005
			June	0.004
DPM / BPM Ratio	0.1302		July	0.003
Year sampled	2021		August	0.003
Between 1960-2100	Row		September	0.004
			October	0.010
			November	0.010
			December	0.004
Modified values				
Total Organic Carbon (t C / ha)	25.450			2.1277
Biomass C (t C / ha)	0.5191			
RadioCarbon content	5.5			2.3091



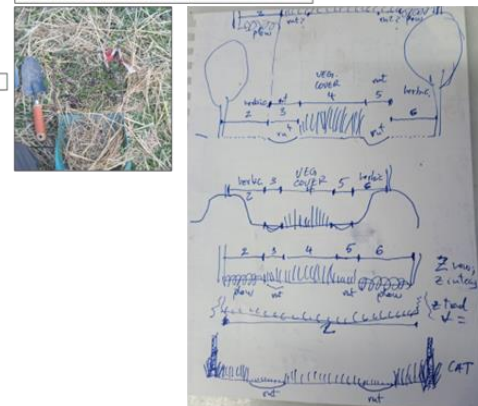
Prats et al, 2023



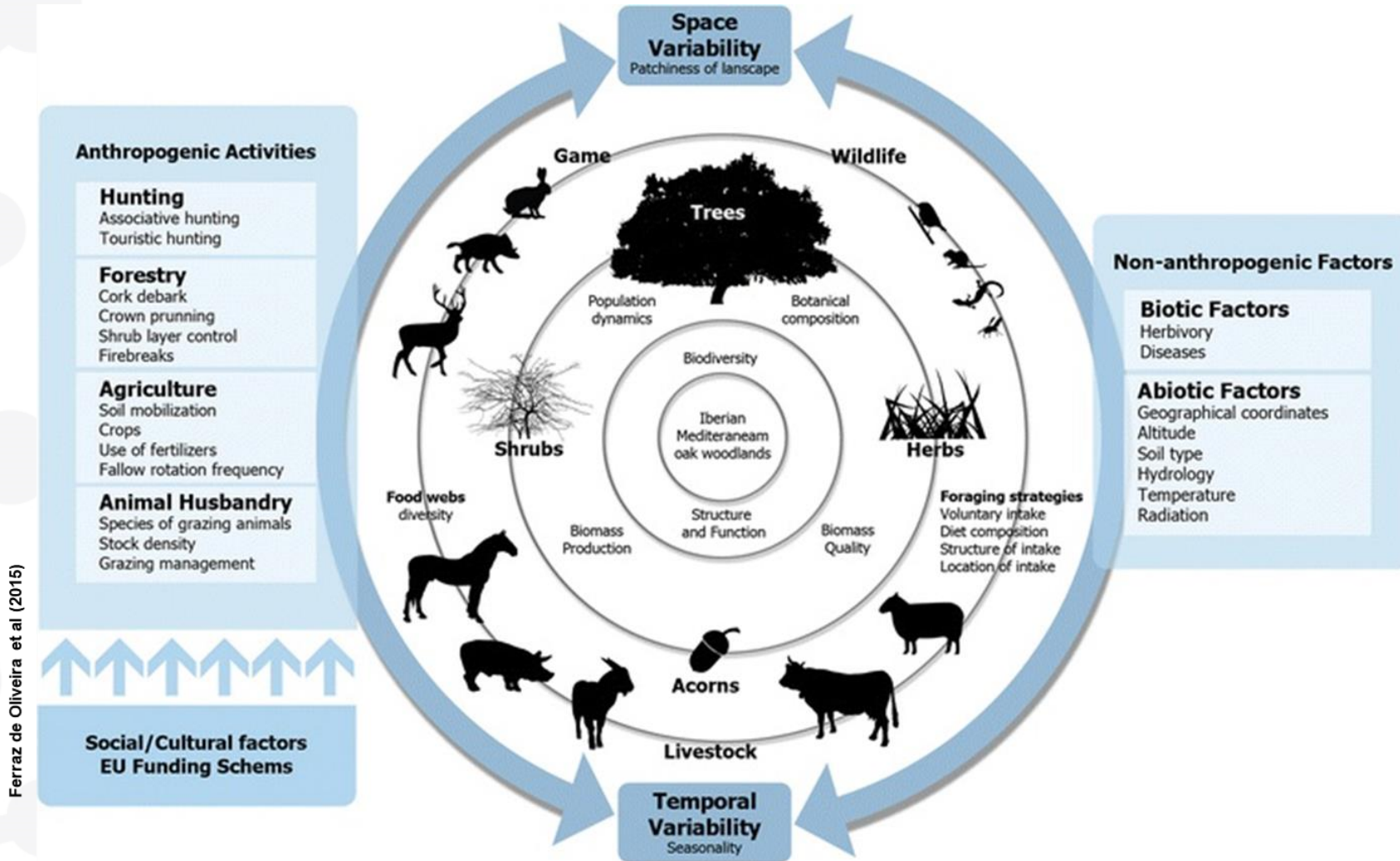
Soil C stocks sampling



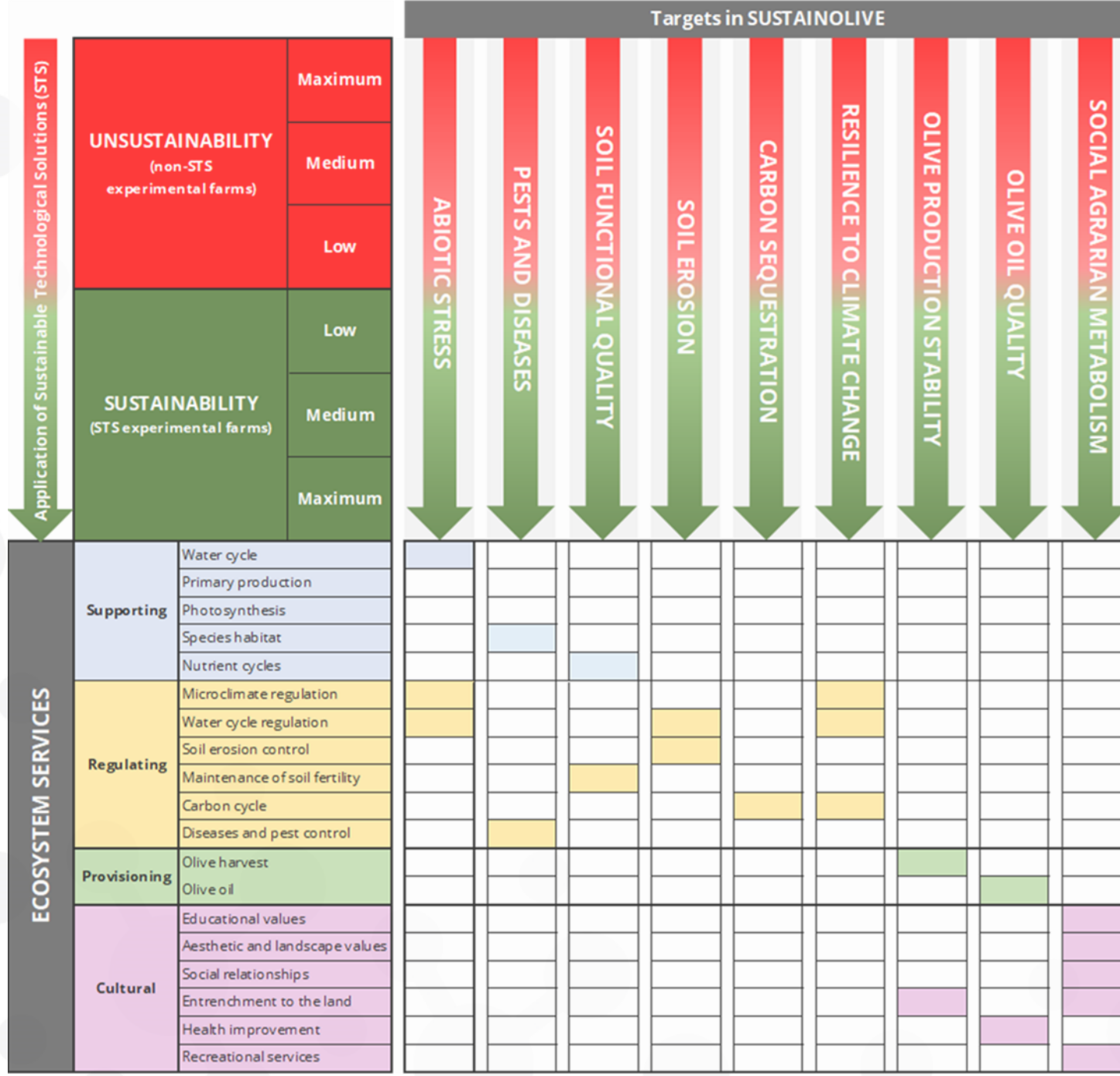
Cover crop sampling



F. Landscape and Biodiversity Decline.



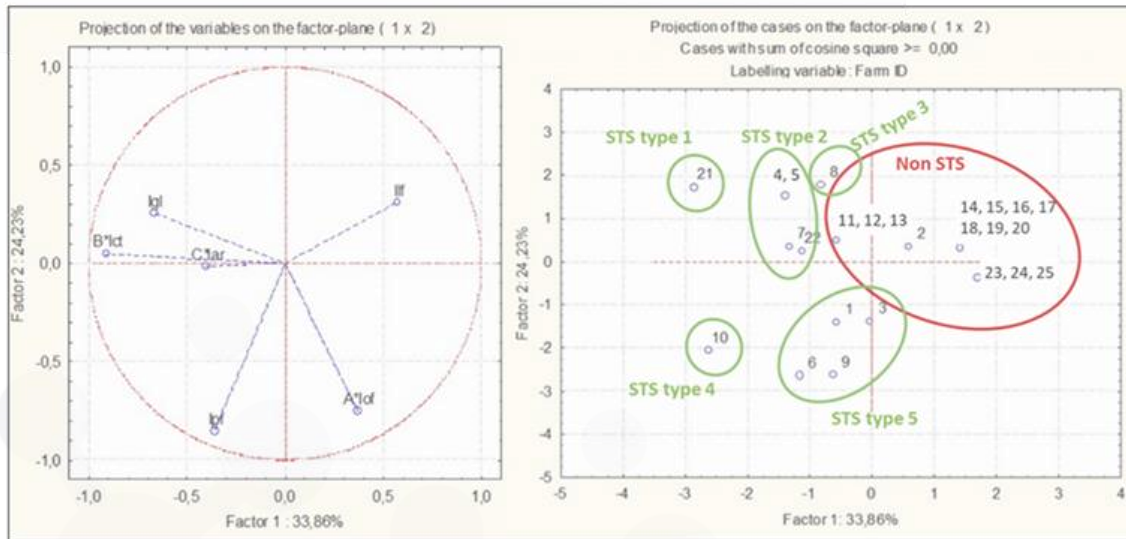
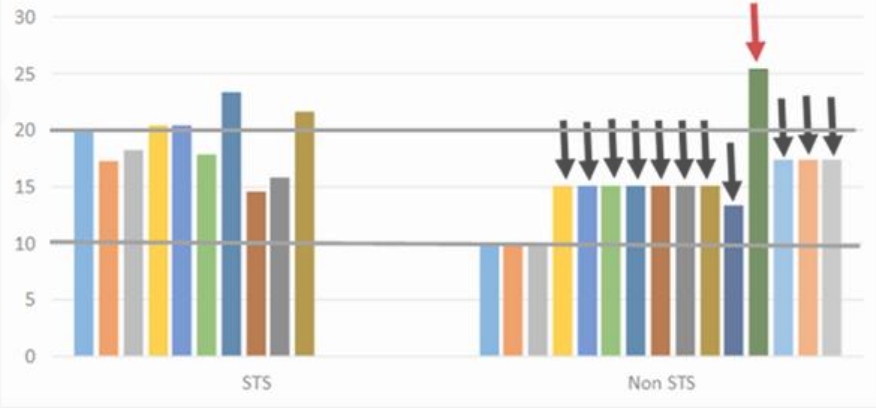
Ferraz de Oliveira et al (2015)



Liétor et al, 2023

PORTUGAL	
STS	Non STS
20,2	10
17,2	10
18,2	10
20,4	15
20,4	15
17,8	15
23,4	15
14,6	15
15,8	15
21,6	15
	13,4
	25,4
	17,4
	17,4
	17,4

Figure 2. STS relative importance of experimental plots in PORTUGAL



Muñoz-Rojas et al, 2023



Opportunities

Key land-use trends in Mediterranean Iberia/ Key land-use trends in Mediterranean Iberia	Urban sprawl	Land Abandonment	Agricultural Intensification	Desertification and Land Degradation	Landscape & Biodiversity Decline
1: Continual learning and adaptive co-management.	x	x		x	x
2: Common concern entry point.	x	x		x	x
3: Multiple scales.			x	x	x
4: Multifunctionality.	x		x	x	x
5: Multiple stakeholders.	x	x	x	x	x
6: Negotiated and transparent change logic.	x	x	x	x	x
7: Clarification of rights and responsibilities.	x	x	x	x	x
8: Participatory and user-friendly monitoring.		x		x	x
9: Resilience.	x	x	x	x	x
10: Strengthened stakeholder capacity.	x	x	x	x	x

➤ ~~Barriers~~ Challenges

- **Cultural barriers towards innovation,** cooperation and mutual trust may prove especially tough to overcome,
- **Land property structures and related inequalities** do not facilitate the implementation of negotiated and transparent negotiation mechanisms for the resolution of land-use related conflicts,
- **Administrative procedures** are largely inflexible, hampering implementation of LAs and related principles

Despite all the aforementioned ~~barriers~~ challenges, **multiple opportunities** are also in place that relate to the **increasing acknowledgement by farmers, local actors and policy makers** about the need to move towards enhanced sustainability standards and practices.

Open for discussion (short)

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<http://med.uevora.pt>

<http://www.labscape.uevora.pt/>

Obrigada pela vossa atenção

www.med.uevora.pt

