

How to monitor up-take? Who is setting up the indicator system and using it?

Co-construction of a result payment scheme for the Montado - a case study

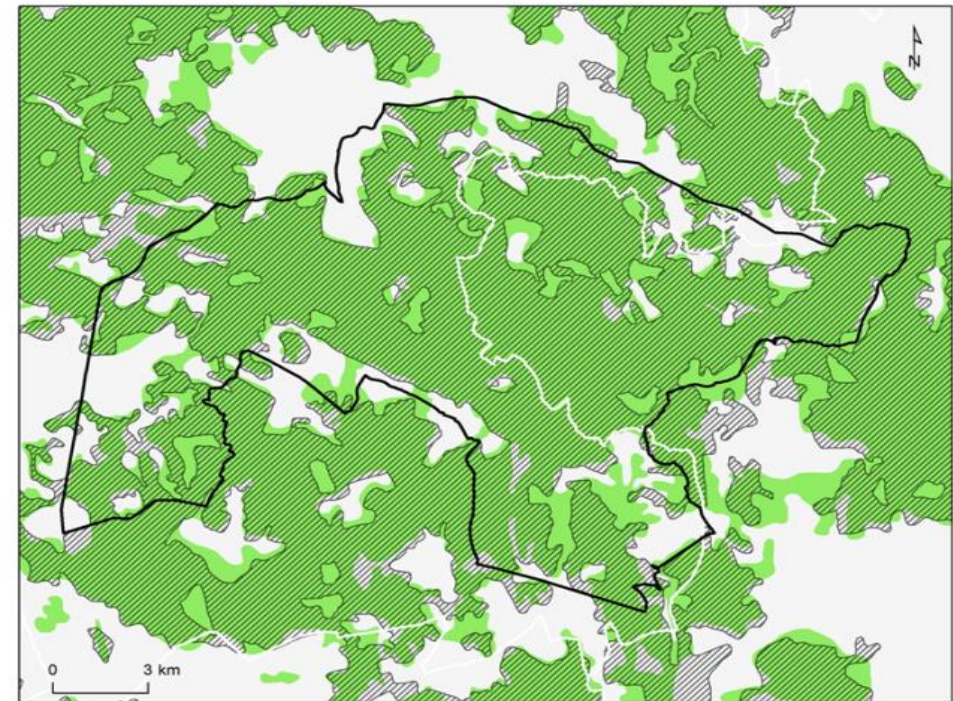
M Isabel Ferraz-de-Oliveira, Teresa Pinto-Correia, M Helena Guimarães, Elvira Sales-Baptista

EURAGRI Conference

Bringing Science to Society through Co-innovation and Co-Creation – the “Soil-Health and Food Mission”



Montado – an HNV system



MONFURADO NATURA 2000 SITE
Distribution of montado in 1960 and 2006

- Monfurado RN2000 site
- Montados (2006)
- Montados (1960)



A result-based scheme for the Montado

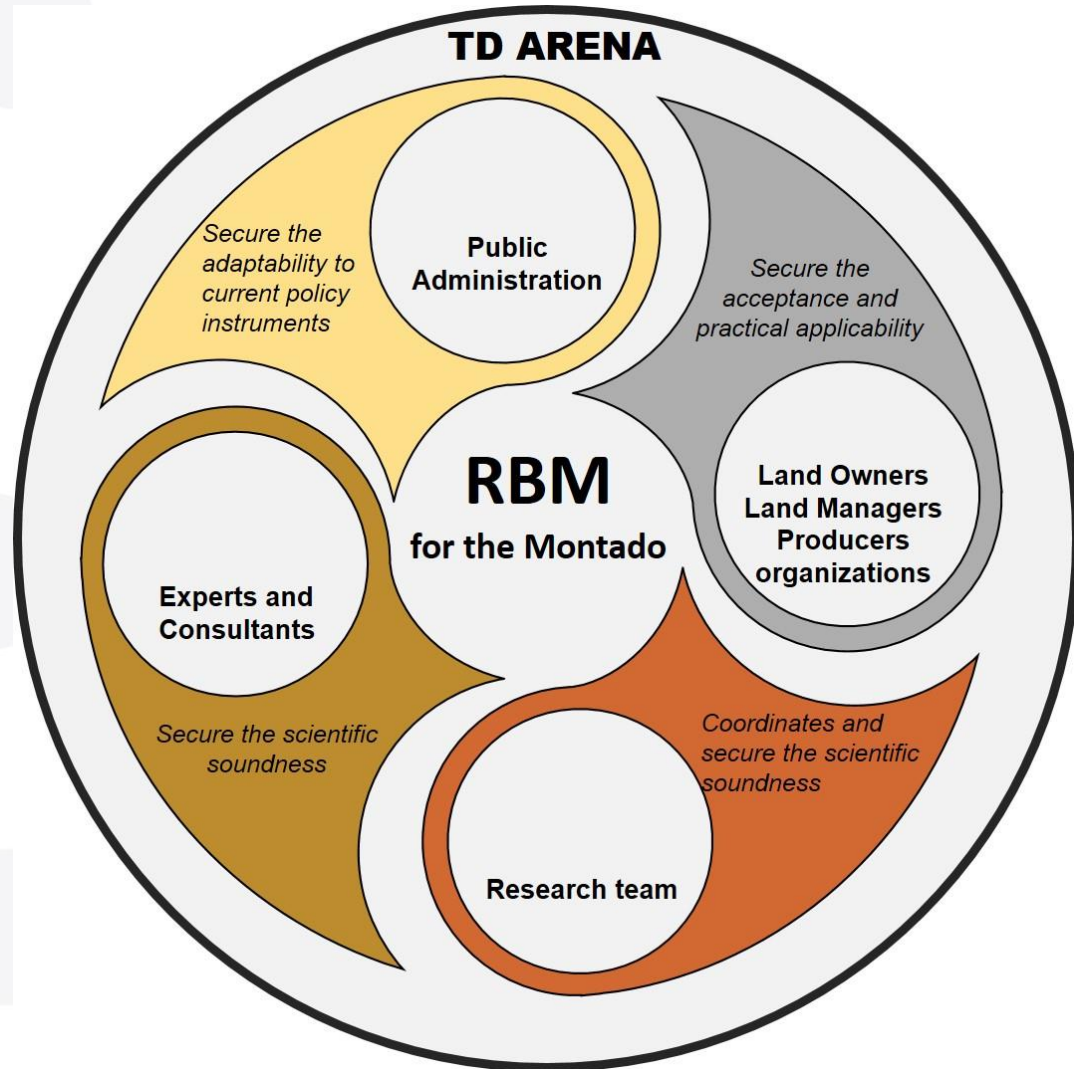
The co-construction process

Build upon previous projects and interactions

- Projeto Europeu HNV-Link (2016-2020) (H2020)
- Burren Programme – Farming for conservation
- RBAPS Project (2015-2018) in Ireland and Spain
- Tertúlias do Montado in MED/UEvora
- Interactions with specialists on Montado environmental outcomes and result indicators



The transdisciplinary (TD) arena



- A **platform for dialogue** among stakeholders
- Maintained and **enriched throughout de co-construction** process
- Based on **tangible relations** and shared goals but also on **intangible links**, values and inspirations.

Source: Pinto-Correia et al., 2021; unpublished

How we are constructing the result based model

- ✓ Different steps
- ✓ Different actors
- ✓ Different skills



1

Selection of the environmental outcomes

The environmental outcome has to be clear:



Be dependent on the **farm practices**

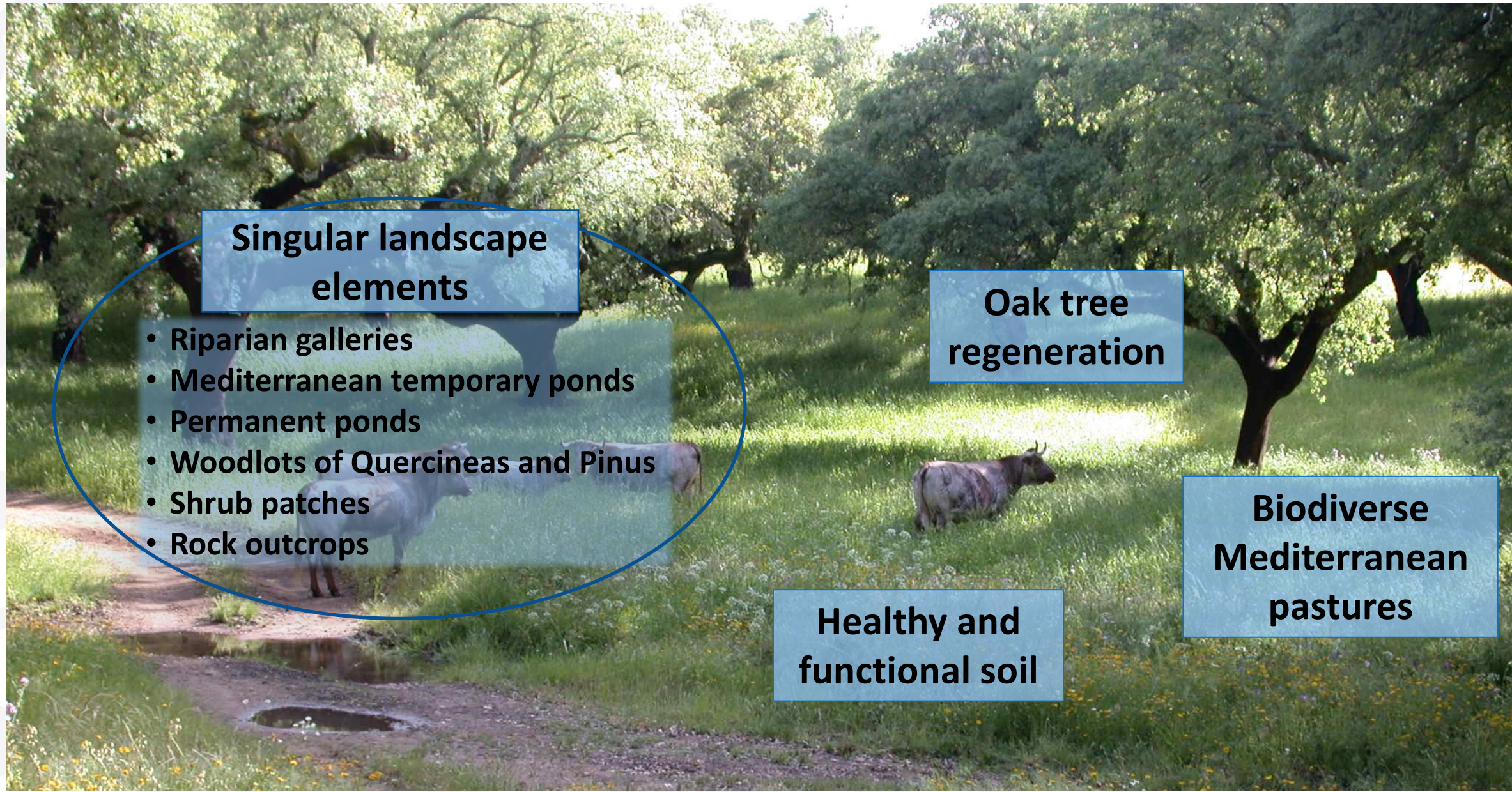


Be an objective of a **known conservation** state (conservation priority at Nacional ou Regional level)



Be object of **scientific knowledge** that allow the selection of indicators for its evaluation.

Targeted environmental outcomes



Singular landscape elements

- Riparian galleries
- Mediterranean temporary ponds
- Permanent ponds
- Woodlots of Quercineas and Pinus
- Shrub patches
- Rock outcrops

Oak tree regeneration

Biodiverse Mediterranean pastures

Healthy and functional soil

2

Selection of indicators to measure environmental results achieved

Result-based indicators for the Montado programme should:

- ✓ Be **responsive** to farm practices
- ✓ Be able to **detect the evolution** towards **full environmental results delivery**
- ✓ Be evidente through **visual assessment**
- ✓ Be **assessable by non-experts** after training
- ✓ Be **cost-effective**
- ✓ Be **socially accepted**

2

List of indicators to assess environmental results

| Indicator | Environmental outcome |
|--|-----------------------------------|
| A1 – Degree of soil coverage by <i>Rumex bucephalophorus</i> and <i>Chamaemelum mixtum</i> | Healthy and functional soil |
| A2 – Extension of bare soil | |
| B1 - Density of tree cover regeneration | Oak tree regeneration |
| B2 - Conservation status of regeneration | |
| C1- Balance among botanical herbaceous groups | Biodiverse Mediterranean pastures |
| C2- Degree of thistles coverage | |
| C3-Degree of shrubs coverage | |
| D1 - Diversity of singular landscape elements | Singular landscape elements |
| D2 – Representativeness of singular landscape elements | |
| D3 – Conservation status of each singular landscape element | |

✓ Each indicator is assessed in 4 levels

| A1 – What is the degree of soil coverage by <i>Rumex bucephalophorus</i> and <i>Chamaemelum mixtum</i> | | | |
|--|-------------------|-------------------|----------------|
| High | Medium-high | Medium-low | Low |
| > 50% coverage | 25 - 50% coverage | 10 - 25% coverage | < 10% coverage |

✓ Indicator assessment level is the basis for the calculation of the score for each plot

| Weighting of environmental results | Weighting of indicators |
|---|--|
| Healthy and functional soil – 25% | Degree of soil coverage by <i>Rumex</i> and <i>Chamaemelum</i> – 60% |
| | Extension of bare soil – 40% |
| Oak tree regeneration – 35% | Density of tree cover regeneration– 60% |
| | Conservation status of regeneration – 40% |
| Biodiverse Mediterranean pastures – 25% | Balance among botanical herbaceous groups – 40% |
| | Degree of thistles coverage – 25% |
| | Degree of shrubs coverage – 35% |
| Singular landscape elements – 15% | Diversity of singular landscape elements– 25% |
| | Representativeness of singular landscape elements – 35% |
| | Conservation status of each singular landscape element – 40% |

✓ Final score for each plot is directly related to the payment

Indicator assessment protocol

Steps:

- Plot selection
- Definition of the assessment path:
- Assessment method for each indicator
 - Evaluation Guide

- 10 Indicators
- 8 Montado plots
- 7 Farmers
- Total área - 459 ha
- Sítio de Monfurado (Natura 2000) and surroundings



Scoring sheet

Operationalization:

- Assessment path in a mobile app

Ex: GPX Viewer

- Color coding for diferente levels

Red to green

C1 – Qual é o nível de equilíbrio herbáceo da pastagem?

| Muito baixo (ausência de legum. e dominância de gramíneas pouco diversas) | | | | | | | | | | Baixo (ausência de legum. e diversidade nos outros dois grupos com prevalência de "gramíneas") | | | | | | | | | | Moderado (ausência de legum. e diversidade nos outros dois grupos com prevalência de "outras") | | | | | | | | | | Elevado (presença dos 3 grupos com diversidade em todos) | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|--|----|----|----|----|----|----|----|----|----|--|----|----|----|----|----|----|----|----|----|--|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

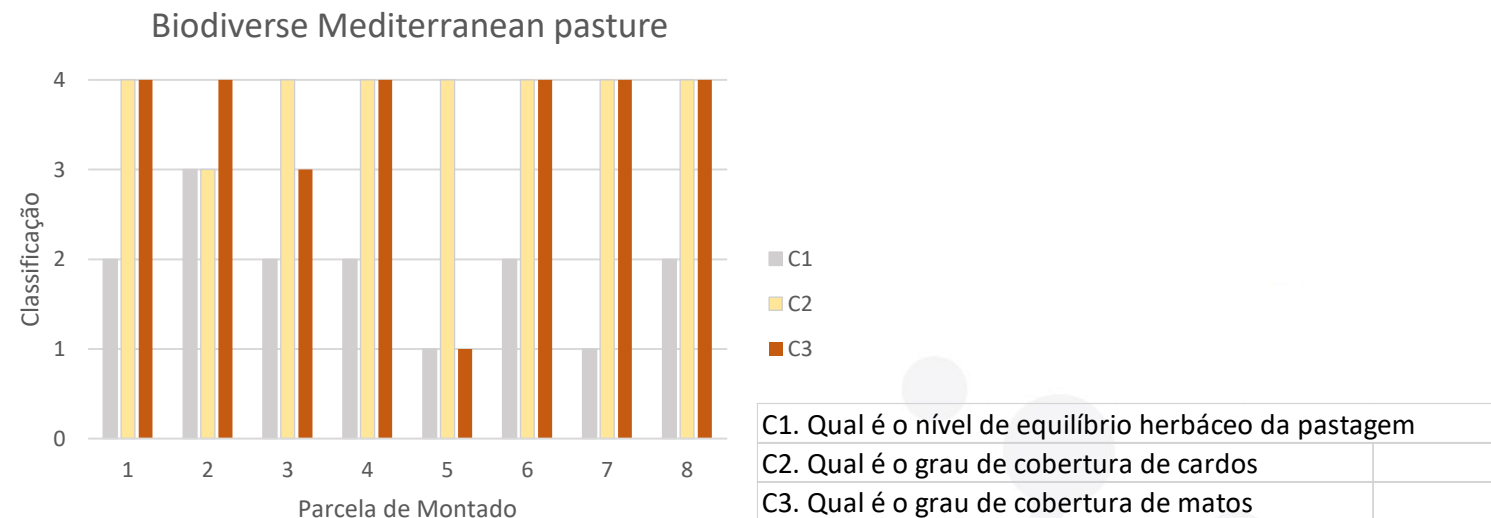
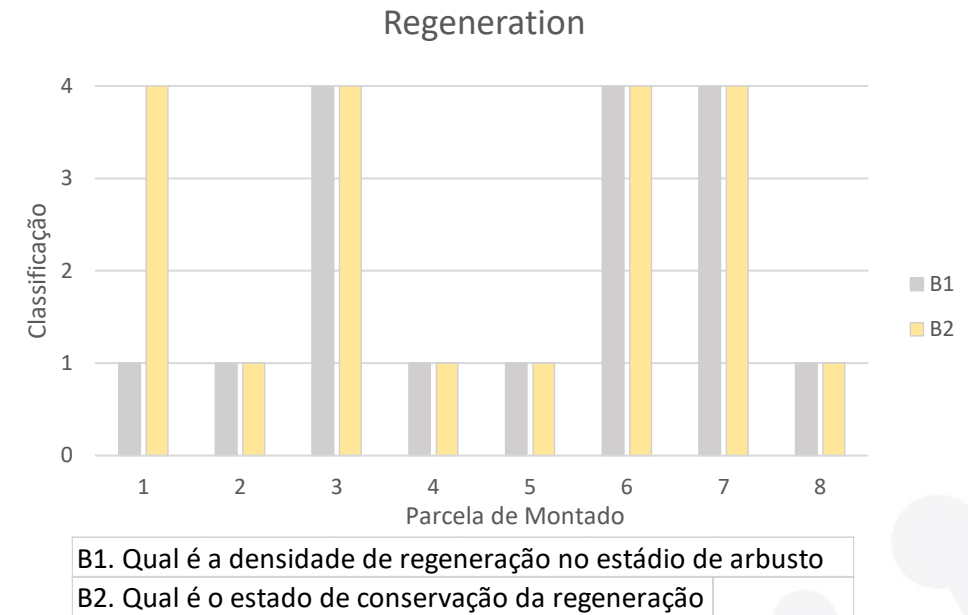
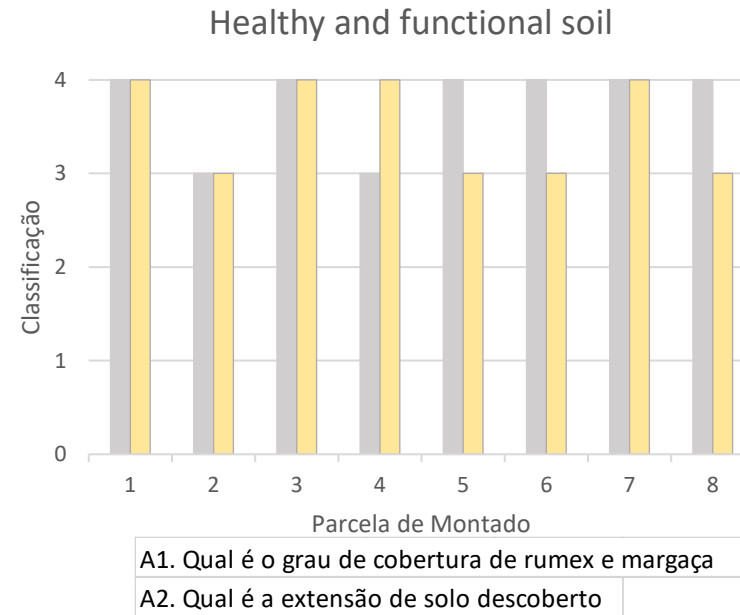
C2 – Qual é o grau de cobertura de cardos?

| Alto > 50% | | | | | | | | | | Médio-alto 25 - 50% | | | | | | | | | | Médio-baixo 10 - 25% | | | | | | | | | | Baixo ≤ 10% | | | | | | | | | |
|------------|----|----|----|----|----|----|----|----|----|---------------------|----|----|----|----|----|----|----|----|----|----------------------|----|----|----|----|----|----|----|----|----|-------------|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

Quantification of individual indicators

Maio 2021

- Small sample
- There are differences between plots
- Tree regeneration has low scores



Main challenges

- **Multiactor approach** and **knowledge co-construction** across the whole process
- To bridge the scientific knowledge gap to **link agricultural practices** to biodiversity and other **ecosystem service** outcomes at an appropriate spatial scale
- The shift from **compliance and rules** towards **results and performance**
- Farmer engagement in **ensuring delivery, innovation** and **adaptive management**

What have we learned so far ?

- **Innovation** has good conditions to emerge when different knowledge, perspectives and skills are combined in a process where actors involved **feel empowered**.
- Researchers took the lead as **initiators of the innovation** process, but the result-based program for the Montado has, step-by-step, been **appropriated** by farmers and administration.
- **Competitive research funding** is a supporting mechanism, but long term investment is a pre-condition for the co-construction of a **result-based program for the Montado** .



Many thanks for your attention!
Muito obrigada pela vossa atenção!

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