Results-based payments: a new tool requiring support decision tool to help adaptive management in complex silvopastoral systems

Teresa Pinto-Correia, Tiago Marques, Isabel Ferraz de Oliveira, Helena Guimarães, Maria de Belém Freitas

MED - University of Évora, Portugal
mtpc@uevora.pt jtiagom@uevora.pt
our silvo-pastoral landscape
A landscape resulting from a highly adaptive system

wood pastures for high quality livestock + open forest
<100 trees/ha
cork production, extensive use, several layers,
spatial and functional complexity, high spatial fuzzyness
hot-spot of biodiversity + leisure + heritage

diversity of products & income sources
High Nature Value x Ecosystem Services provisioning
  »» hunting, hiking, recreation, bird watching, identity, culture
  »» growing societal demand
As other silvo-pastoral systems, *Montados* are over-mature and suffer recruitment failure showing a significant shrinking and decline:

Between 1990 e 2014 and continuing....

»» 5000 ha/year have been lost
a step by step opening and reduction in area

A <10% Open Pastures

B 10-20% Clear Montado

C 20-50% Open Montado

D >50% Dense Montado

decrease in resilience
coming closer to threshold of no return

Estimating tree canopy cover percentage in a mediterranean silvopastoral systems using Sentinel-2A imagery and the stochastic gradient boosting algorithm
Sergio Godinho, Nuno Guimarães* and Artur CP

*ICAM - Instituto de Ciências Agrárias e Ambientais Mediterrânicas, LAG - Landcapes, Biodiversity and Sustainable Forest Research Group, Instituto de Ciências Agrárias, Center for Biologi, Evolution and Environmental Change (C2E), Alcoxe Biodiversity Group, Department of Biology, Faculty

A remote sensing-based approach to estimating montado canopy density using the FCD model: a contribution to identifying DNV farmlands in southern Portugal
Sergio Godinho, Nuno Guimarães* and Artur CP

INTERNATIONAL JOURNAL OF遜INIC RESOURC(2017)
https://doi.org/10.1080/00168923.2017.1369468
What can be done? ...looking for opportunities

2018 » EC announces more flexible and performance based CAP
»» emphasis shift from compliance and rules towards results and performance.

Strategic plans » countries define how they want to meet the 9 CAP objectives using CAP instruments while responding to the specific needs of their farmers and rural communities.

CHAPTER IV - TYPES OF INTERVENTIONS FOR RURAL DEVELOPMENT SECTION 1, Articles 64 & 65
7. Member States may promote and support collective schemes and result-based payments schemes to encourage farmers to deliver a significant enhancement of the quality of the environment at a larger scale and in a measurable way.

»» place to innovate and experiment
»» calls for NEW ways to incentivise farmers to deliver environmental benefits

Result Based Measures (RBM) within the agri-environmental scheme, defined for specific and targeted farm systems rewarding farmers for going beyond mandatory requirements.
1) a transdisciplinary (TD) arena

- Based on previous networks & projects
- A platform for dialogue among stakeholders » different actors & different skills
- Maintained and enriched throughout de co-construction process
- Based on tangible relations and shared goals & intangible links, values and inspirations.

Source: Pinto-Correia et al., 2021
2. selection of the environmental outcomes

»» room to link to the functionning of the system

The environmental outcome has to be clear and measurable:

- Be dependent on the **farm practices**
- Be an objective of a **known conservation** state (conservation priority at National ou Regional level)
- Be object of **scientific knowledge** that allow the selection of indicators for its evaluation.
Biodiverse Mediterranean pastures

- Oak tree regeneration
- Healthy and functional soil
- Biodiverse Mediterranean pastures
- Singular landscape elements
  - Riparian galleries
  - Mediterranean temporary ponds
  - Permanent ponds
  - Woodlots of Quercineas and Pinus
  - Shrub patches
  - Rock outcrops

= targeted environmental outcomes
3. selection of the indicators to measure these outcomes

Clear and measurable indicators have to be selected
Scientifically grounded and reflecting the environmental result

» the contribution from the scientific community
» in interaction with those that are going to use the indicators: farmers and technicians
### 3. Selection of the Indicators to Measure These Outcomes

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Environmental Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 - Degree of soil cover by <em>Rumex bucephalophorus</em> and <em>Chamaemelum mixtum</em></td>
<td>Healthy and functional soil</td>
</tr>
<tr>
<td>A2 - Extension of bare soil</td>
<td></td>
</tr>
<tr>
<td>B1 - Density of tree cover regeneration</td>
<td>Oak tree regeneration</td>
</tr>
<tr>
<td>B2 - Conservation status of regeneration</td>
<td></td>
</tr>
<tr>
<td>C1 - Balance among botanical herbaceous groups</td>
<td>Biodiverse Mediterranean pastures</td>
</tr>
<tr>
<td>C2 - Degree of thistles cover</td>
<td></td>
</tr>
<tr>
<td>C3 - Degree of shrubs cover</td>
<td></td>
</tr>
<tr>
<td>D1 - Diversity of singular landscape elements</td>
<td>Singular landscape elements</td>
</tr>
<tr>
<td>D2 - Representativeness of singular landscape elements</td>
<td></td>
</tr>
<tr>
<td>D3 - Conservation status of each singular landscape element</td>
<td></td>
</tr>
</tbody>
</table>
4. the indicator assessment protocol »» and implementation

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

![Map of Mitra - Cerca 2 Pedra da Pinha showing regeneration and biodiverse Mediterranean pasture classifications.](image)
Researchers as organizers and linkage to policy makers
- place attachment, network involvement, motivation
- using a window of opportunity
- integrating project funds for long distance goal
- being RESILIENT » attention and dialogue in all steps

Strategic Plan of the Common Agricultural Policy in Portugal 2023-26
JUST RELEASED, including the Result Based Payments as “experiment”:

Implementation in two pilot areas: Natura 2000, where conservation goals are identified
Advisory and everyday support: by research organization & local association

Low complementarity with existing measures but high level of payments:
- added value of this option for farmers
- Landscape elements as part of the requirements
Many thanks for your attention!