CONTEXT PROFILE

PORTUGAL

FARMER
Nuno Rodrigues – Casa Agrícola Manuel Gil Ferreira

INNOVATION
Use of NDVI and thermal integral and implementation of a new culture

Video

MAIN DOMAIN OF THE INNOVATION
Improvement of grassland management

SOIL TYPE
Sand

FINANCE/INVESTMENT
Low

AGROCLIMATIC AREA
Mediterranean south

MANAGEMENT
Pasture beef

MARKET
Local-rural

CLIMATE
Little rainfall

TECHNICAL
Easy

SOCIAL
Part-time farmer

All contents of this document are expert opinions of the G4AE Scientific Technical Working Group

CONTEXT PROFILE

PORTUGAL

Case Study: PT_15	Agroclimatic Zone								
Item (Key Innovation Elements)	**Alpine**	**Atlantic Central**	**Atlantic North**	**Atlantic South**	**Boreal**	**Continental North**	**Continental South**	**Mediterranean North**	**Mediterranean South**
Implementation of agroforestry	++	+++	+++	+++	+++	+++	+++	++	+++
Availability of an irrigation system for temporary grassland on arable land	++	+++	+++	+++	+++	++	++	++	+++
Use of Normalized Difference Vegetation Index (NDVI) for irrigation planning	++	+++	+++	+++	+++	+++	+++	++	+++

+++ Strong transferability **++ Slightly limited transferability** **+ Very limited transferability** **× Generic information/not relevant**

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Implementation Gaps

- Lack of locally adapted validation curves for NDVI for the local vegetation
- Costs and water availability to establish and maintain an irrigation system

Research Gaps

- Locally adapted validation curves to predict yield for NDVI for the local vegetation
- Development of locally adapted Support Decision Systems to optimise irrigation

Suggestions to Adapt

- Use other tree species adapted to the local conditions

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COST-BENEFIT ANALYSIS

INVESTMENT COSTS

Total initial investment costs at start up:	high
• Initial authorisation costs (e.g. sanitary, veterinary, etc.)	low
• Initial advisory costs	low
• Initial buildings and machineries	high
• Initial certification costs	low
• Initial working capital (personal qualification, marketing and promotion, etc.)	high

ON-GOING COSTS

On-going advisory costs	low
On-going certification costs	not applicable/not known
On-going buildings and machinery costs	high
On-going working capital	high

BENEFITS RELATIVE TO ORIGINAL SYSTEM

- **Economic**

Reduction in energy consumption (electricity; fuel consumption)	none or low
Reduction in input use (fertilizers; pesticides; feed) etc.	mid
Payback period	high
Product value added	high
Additional farm income through agroecological/agri-environmental payment schemes	none or low

- **Environmental**

Animal feed self-sufficiency increase	high
Biodiversity increase	high
Improved nitrogen cycling	high
Soil regeneration	high
Animal health and welfare improvement	high

- **Social**

Workload reduction	none or low
Engagement of young generation	none or low

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Literature

English

- Serrano, J., Shahidian, S., Marques da Silva, J., Paixao, L., Calado, J., de Carvalho, M. 2019. Integration of soil electrical conductivity and indices obtained through satellite imagery for differential management of pasture fertilization. AgriEngineering 1, 567–585; doi:10.3390/agriengineering1040041

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