

CONTEXT PROFILE

 PORTUGAL



FARMER

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INNOVATION

Rotational grazing to reduce work labour and
costs and to mitigate the drought



[Video](#)



MAIN DOMAIN OF THE INNOVATION

Animal management



AGROCLIMATIC AREA

Mediterranean south



CLIMATE

Little rainfall



SOIL TYPE

Clay



MANAGEMENT

Pasture beef



TECHNICAL

Easy



FINANCE/INVESTMENT

Low



MARKET

Local-rural



SOCIAL

full-time farmer

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Case Study: PT_01	Agroclimatic Zone								
Item (Key Innovation Elements)	Alpine	Atlantic Central	Atlantic North	Atlantic South	Boreal	Continental North	Continental South	Mediterranean North	Mediterranean South
Increase in animal charge / animal density	++	++	++	++	++	++	++	+++	+++
Paddock size / Smaller pots	++	++	++	++	++	++	++	++	++
Less time in each plot	++	+++	+++	+++	+++	+++	+++	+++	+++
High value local breeds	+++	+++	+++	+++	+++	+++	+++	+++	+++
Better control of pasture growth / better grassland management / better grassland utilisation	+++	+++	+++	+++	+++	+++	+++	+++	+++
Permanent multispecies grassland / pastures	+++	+++	+++	+++	+++	+++	+++	+++	+++
Rotational grazing to improve pasture use and productivity	+++	+++	+++	+++	+++	+++	+++	+++	+++
Labour efficiency	+++	+++	+++	+++	+++	+++	+++	+++	+++
Local breeds (Sheep, cattle)	+++	+++	+++	+++	+++	+++	+++	+++	+++

 Strong transferability
  Slightly limited transferability
  Very limited transferability
  Generic information/not relevant

Implementation Gaps

- Investments on fences / Type of fencing / Increasing fencing costs when making more paddocks in the same total area
- Initial distrust of farmers
- Ability of the farmer to set up a grazing plan
- Plafond on local breeds number
- Type of grassland that is sown
- Residency time per paddock
- Impact on animal production – higher weight gain? Faster finishing time?
- Type and access of livestock drinking water system / Availability of drinking water for animals in grazing sectors is critical in most rainfed areas
- Availability of work force to manage large herds and pastures is essential / Possibility to distribute drinking water to very paddock. Increasing cost.
- Possibility to adapt when you have smaller herds. How high does the grazing pressure have to be for the system to still be effective. There is a turning point where there are too many animals and not enough pasture availability for the grass to grow sufficiently. This differs on different soil types. And also in different agroclimatic zones where e.g. more water is available and grass growth is higher
- The permanent separation of small grazing areas could be very expensive or require many years to be implemented
- More frequent transferring of animals requires more work, not less

Research Gaps

- Knowledge on adaptation and management of grass varieties
- Animal production benefits of the system
- Cost-benefit analysis in terms of investment in infrastructure
- Herbage production / How to increase/manage pasture productivity under climate change in rainfed conditions (adapted varieties, pasture improvement)
- Appropriate rotation length
- Impact of drought
- What level of supplementation is required

Suggestions to Adapt

- Electric fencing
- Use existing field boundaries to reduce fencing costs / Use of existing hedges or natural vegetation/landscape elements, if any, to fence grazing areas or use of electric fences
- Relevance for smaller herd/flock sizes
- Adaption of the system for farms with smaller herds and different animal species and less available hectares
- Use of local breeds well adapted to graze natural forage resources
- Use shepherd dogs to help manage flocks and defend sheep from predators during grazing or resting (many shepherd breeds are local and specialised)

COST-BENEFIT ANALYSIS

INVESTMENT COSTS

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

ON-GOING COSTS

On-going advisory costs	low
On-going certification costs	mid
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	none or low
Additional farm income through agroecological/agri-environmental payment schemes	mid

◦ Environmental

Animal feed self-sufficiency increase	mid
Biodiversity increase	none or low
Improved nitrogen cycling	high
Soil regeneration	mid
Animal health and welfare improvement	high

◦ Social

Workload reduction	mid
Engagement of young generation	not applicable/not known

Literature

English

- Abandonment in grazing systems: Consequences for vegetation and soil - ScienceDirect Positive effects of these types of grazing systems on soils and therefore grass growth
- Rotational grazing – an overview: <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/rotational-grazing>
- <https://www.sciencedirect.com/science/article/pii/S0167880920300785>
- <https://www.sciencedirect.com/science/article/pii/S1125471824002780>