Profitability of permanent grasslands: How to manage them in a way that combines profitability, carbon sequestration and biodiversity?

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More than 60 million hectares across the EU-28
35% of the total Utilised Agricultural Area (UAA)

(Eurostat 2012)
Context

Permanent grasslands are by far the first crop in Europe.

Area declined: abandonment, afforestation, urbanization, conversion to arable crops including green maize.

Changes influence biodiversity and ecosystem services they provide, e.g. C sequestration, cultural heritage, including the contribution to beautiful and living landscapes.
Several **Focus Groups** were created for ‘**helping the agricultural and forestry sectors to become more productive, sustainable and capable of tackling current challenges such as fiercer competition, more volatile market prices, climate change and stricter environmental rules**’

(http://ec.europa.eu/eip/agriculture/)
Context

All the aspects mentioned above on permanent grasslands motivated the creation of a Focus Group ‘Profitability of Permanent Grassland’.

The Focus Group regularly met and ‘addressed the challenge of evaluating the current situation, the status, the constraints and the perspectives for these habitats and their related rural communities’.

The group included farmers, farmers’ advisers, representatives of Farmers’ Unions and other NGOs, and scientists (20 people).
Focus Group: Profitability of permanent grasslands
COMPOSITION OF THE FOCUS GROUP: ORIGIN OF ITS MEMBERS

ATLANTIC
CONTINENTAL
MEDITERRANEAN
AREAS
Seven key issues:

1. Definition of a grassland typology in relation to their biodiversity and productivity
Seven key issues:

1.

2. Achieving grassland production and quality that matches animal needs
Seven key issues:

1. Benchmarking grassland production
Seven key issues:

1. 

2. 

3. 

4. Increased grassland functionality through diversification of sward composition
Seven key issues:

5. Increased resource efficiency (investment and cost reduction) to improve profitability and sustainability
Seven key issues:

5.

6. Differentiation of grass-based products for higher market value (product quality, product processing, increasing selling price, short marketing chain)
Seven key issues:

5.

6.

7. Evaluation of the environmental impacts of grassland-based and livestock systems using Life Cycle Thinking
Grass-based products: high market value

LCT (7)

Increased functionality through sward diversification (4)

Environmental and health risks

Ecosystem services from farmers

Increased resource efficiency (5)

Grassland typology (1)

Tools for farmers (2)

Benchmarking (3)

C sequestration

Life cycle of products and services

Methane emissions

Multifunctionality

Society
**FARMERS x BREEDS x PERMANENT GRASSLAND (BASIC RESOURCES)**

**FAIL FACTORS**

**LANDSCAPE BIODIVERSITY**
- Society does not understand the processes and why landscape is like that
- Lack of global analysis on impact assessment

**FARMERS**
- No recognition of grass production with PGs in the same way as another culture
- Management of permanent grassland extremely complex and not enough technical skills
- Social pressure against innovations
- Too much bureaucracy and regulations not accepted
- Innovation costs money and may not have direct effect on income
- Lack PGs productivity assessment
- Lack of links between actors
- Each actor has own priorities

**LOCAL BREEDS**
- Lock-in situation: investments, market structure, social influence
- Lack of information about nutrient quality

**LOCAL PRODUCTS**
- Too much bureaucracy
- Lack of markets
- Very restrictive laws
- Lack information on food properties and how it is produced
- Innovative products are expensive

**PRODUCTS**
- Too much bureaucracy
- Lack of markets
- Very restrictive laws

**CONSUMERS**
- Lack awareness about multifunctionality of grasslands
- Reluctance to pay for ecosystem services
- Too many chemical product consumption

**PUBLIC INSTITUTIONS**
- Investments still insufficient & inefficient: in rural development, research and education
- Advisors need more training
- High diversity of scenarios in EU PGs = difficult to global policies / decisions
- Too much specialization = basic processes ignored
- Need political and public consensus
- Reduction coefficient s underestimating potential PGs

**SCIENCE & TECHNOLOGY**
- Inefficient knowledge transfer
- Inadequacy of problem priority
- Lack of multidisciplinarity when evaluating a problem
- Lack of infrastructure
- Unbalance between reductionism and system approaches
- PGs not very attractive for providers (fertilisers, machinery..)

**ENTERPRISES**
- Reluctance to invest on I+D+i
- Higher complexity and environmental limitations less attraction
FARMERS X BREEDS X PERMANENT GRASSLAND (BASIC RESOURCES)

FAIL FACTORS

LANDSCAPE

BIODIVERSITY

FARMERS

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ERS

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IONS

About multi-functionality of grasslands for ERS

Society does not understand the processes and why landscape is like that

Too many chemical product consumption

Lack awareness about multi-functionality of grasslands

Reluctance to pay for ecosystem services

Reluctance to invest on I+D+i
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NS
- Efficient education
- Training
- EU PGs = decisions
- Ignored consensus
- Potential PGs
Innovative ideas or actions, addressing problems of fail factors.

Six generic headings:

1. improved knowledge/information/expertise;
2. enhanced investment in research/education;
3. enhanced resources (actors/tools);
4. reduced bureaucratic and regulatory restrictions;
5. improved marketing infrastructure;
6. enhanced stakeholder communication.
**INNOVATIVE ACTIONS**

**FARMERS X BREEDS X PERMANENT GRASSLAND (BASIC RESOURCES)**

- **FARMERS**
  - Participate in OG
  - Motivate young farmers
  - Support local producers
  - Support risky innovations

- **LOCAL BREEDS**
  - Develop sustainable strategies

- **LOCAL PRODUCTS**
  - More research on food components
  - Transference on their properties

- **PRODUCTS**
  - Promote products including DPO; etc.

- **SCIENCE & TECHNOLOGY**
  - Co-define material and methods
  - Identify the needs
  - Promote Operational Groups (OG)
  - Adopt holistic and participatory approaches
  - Search for alternative products/compounds

- **TOURISM**
  - More studies on impact assessment

- **LANDSCAPE BIODIVERSITY**
  - Improve labour conditions
  - Need sustainable strategies

- **ENTERPRISES**
  - Support the creation and maintenance of markets
  - Public-private partnerships
  - Improve regulations to attract private industry

- **PUBLIC INSTITUTIONS**
  - Assume the problems
  - Reduce bureaucracy
  - More investment in rural development, research & education
  - Improve advisory service
  - Take local/regional/national peculiarities into consideration
  - Translate theoretical knowledge into practice
  - Implement corrective measures for eligibility

- **CONSUMERS**
  - More information about role of rural practices on society welfare

- **INVESTING MONEY**
  - Improve advisory service

- **LOCAL INDUSTRY**
  - Field assessment tools
  - Real time grassland data
  - Quality & sustainable systems

- **INNOVATIVE ACTIONS**
  - More research on food components
  - Transference on their properties

- **LCA studies for global analysis**

- **Search for more measures about services provided by farmers**
**FARMERS X BREEDS X PERMANENT GRASSLAND (BASIC RESOURCES)**

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**ROADS**
- Improve labour conditions
- Sustainable strategies

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**CONSUMERS**
- More information about role of rural practices on society welfare
- Use biological control
- Use plant species with therapeutic properties

**INVESTING MONEY**
- Field assessment tools
- Real-time grassland data
- Quality & sustainable systems
FARMERS X BREEDS X PERMANENT GRASSLAND (BASIC RESOURCES)

INNOVATIVE ACTIONS

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LOCAL BREEDS
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TOURISM
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ASTURIAS MOUNTAIN PASTURES
Conclusions

Issues identified as particularly important by farmers

Innovation Needs

- **Integrate data sets** at local level and implement ICT tools to connect advisory services and other stakeholders (Decision Support Systems, DSS).

- **Provide technology to farmers** to optimise grass production and to identify the best grazing systems using new technologies such as DSS, ICT tools, Big Data.

- **Re-think technical and political solutions** to improve farmers’ livelihoods by producing quality products.
DRONES FOR HERBAGE MASS ASSESSMENT
Smartphone apps for agricultural product marketing and delivery

- Enhance food security restrictions and consumer self-awareness
- Buy safe agricultural products with rest assured
- Enhance food safety standard
- Enhance consumer’s new awareness of food safety
- Evaluate food safety from scientific view
Smartphone applications facilitating grassland management
VIRTUAL FENCING
Sistema de localización GEOPOS
Livestock position tracking using GPS collars and mobile phone
Conclusions

Research needs

• Develop a benchmark system for future dairy and meat farms integrating productivity, environmental, biodiversity, carbon sequestration and adaptation to climate change

• Assess Life Cycle of PG systems including ecosystem services at regional level

• Develop tools describing ecosystem services of PG to respond to local demand

• Analyse what motivates different groups of farmers in their strategies for PG management
Conclusions

Development needs

• Share knowledge between farmers, scientists and other stakeholders about the management of PG in a participatory approach.

• Use demonstration/pilot farms.

• Manage animal/sward performance to maximise productivity, biodiversity, carbon sequestration and climate change adaptation.
ASTURIAS MEDIUM ALTITUDES
Conclusions

Development needs

• **Identify** animal/grassland systems adapted to available resources and markets.

• **Increase** biodiversity in agri-environmental measures (adding product value-labelling).
Conclusions

More efforts in participatory and holistic approaches

Ecosystem services may become valuable also in monetary terms in the future

LCA approaches should be developed to assess PG systems and to fill in this gap.
DEHESA, CÁCERES
Thank you