Benefits and costs of livestock systems in ten European case studies

Animal Future project

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EAAP annual meeting – Dubrovnik
August 27th 2018
Animal Future: Steering animal production systems towards sustainable future

Objectives:

• Assess the multi-dimensional consequences of innovations on benefits and costs
• Facilitate change decision by developing an indicator-based decision support tool
• Improve innovation capacity of livestock systems

Partners involved:

• A multi-actor approach
• A farm network of intensive and extensive production systems
Ten heterogeneous case studies across Europe

Highlands and Islands, Scotland
Extensive sheep and beef systems

Boulonnais, France
Dominant milk production based on permanent grasslands

Bourbonnais, France
Extensive suckling cows systems

Aragon, Spain
Extensive sheep farming

Alentejo, Portugal
Extensive beef systems

Gelderland, The Netherlands
Laying hen in indoor systems

Bayern, Germany
Oberbayern: small-sized dairy farms
Niederbayern: fattening pigs in indoor systems

25 Number of individual interviews
1 Number of workshops
24
1
1
1
1
1

6 workshops and 1 set of individual interviews
Methodology: workshops to catch stakeholders point of view about costs and benefits of the local livestock systems

Workshops aims:

- Share the **diagnosis of the strengths, weaknesses, opportunities and threats of the territory** (SWOT analysis)
- Identification of the **main issues at stake** for the livestock systems in the region
- List of the **costs and benefits** of livestock systems
- List of the **innovative practices** to enhance the benefits and limit the costs

Stakeholders involved

Local and regional actors: farmers, farmer organizations, advisers, processors, governments, NGOs etc.

Methodology

Participatory approaches and small groups

Andrew Barnes
**SWOT Analysis of the case studies according to stakeholders perception**

<table>
<thead>
<tr>
<th>MAIN STRENGTHS</th>
<th>MAIN WEAKNESSES</th>
</tr>
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<tbody>
<tr>
<td>- Livestock as a provider of <strong>jobs</strong> and rural <strong>sustainability</strong></td>
<td>- <strong>Low profitability</strong> and low income</td>
</tr>
<tr>
<td>- High level of <strong>environmental services</strong></td>
<td>- High dependence on public subsidies</td>
</tr>
<tr>
<td>- <strong>Food production</strong></td>
<td>- Lack of <strong>generational turn-over</strong></td>
</tr>
<tr>
<td>- A <strong>well structured branch</strong> which provides high level of services</td>
<td>- Low level of <strong>farmers qualification</strong> and lack of innovation</td>
</tr>
<tr>
<td>to farmers</td>
<td>- Lack of adaptability on <strong>climate change</strong></td>
</tr>
<tr>
<td>- Crop and livestock <strong>complementarity</strong></td>
<td>- Trend to <strong>intensification</strong></td>
</tr>
<tr>
<td>- Provider of good <strong>animal welfare</strong></td>
<td></td>
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</table>

<table>
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<tr>
<th>MAIN OPPORTUNITIES</th>
<th>MAIN THREATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>Product differentiation</strong> by quality and better consumer image</td>
<td>- <strong>Lack of communication</strong> with consumers and little social recognition</td>
</tr>
<tr>
<td>- <strong>Technical progress</strong></td>
<td>- <strong>Regulatory restrictions</strong></td>
</tr>
<tr>
<td>- Potential of <strong>organic market</strong> and diversification</td>
<td>- <strong>Uncertainty</strong> about CAP reforms and more generally the context</td>
</tr>
<tr>
<td></td>
<td>- Trend in <strong>substitution of animal products</strong> / reduction of consumption</td>
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</tbody>
</table>

*Over 4 (incl.) case studies reported these issues as relevant for them*
Concept: Portfolio of benefits and costs

Definitions

- **Benefits**: all livestock activities with positive contribution for the society to the three dimensions of sustainability (economic, environmental and social issues)

- **Costs**: activities with negative contributions on these issues

- **Portfolio**: represents a balance approach where the 3 pillars of sustainability are considered of equal importance
Case studies Benefits and Costs according to stakeholders

- An inspiring subject for CS stakeholders
  - More than 122 occurrences: 17,5 benefits or costs/workshop

- Items from the 3 pillars of sustainability
  - Especially environmental topics

- More benefits [26] than costs [17]
  - Livestock stakeholders express more easily benefits than costs when speaking about their production
  - Tendancy of overestimating the benefits and underestimating the costs
The Bertin Method as a way to analyse the data

**Main benefits and costs identified by CS stakeholders**

- **Principle:**
  - Swap rows and columns in order to show proximities between:
    - Territories
    - Benefits or costs from different chapters

- **Limits:**
  - Method and perception of CSF bias
  - Stakeholders points of view may sometimes be biased
  - Many items for very few occurrences make it difficult to conclude
  - Difficulty to isolate impacts from different livestock productions and systems in a territory
A context based characterisation of Benefits and Costs

The analysis shows a system effect:

- In general more benefits for extensive systems (especially environmental and cultural) but specifically:
  - Synergies between grazing systems and ecosystemic benefits
  - Trade-off between high production systems and cultural benefits
- A more important focus on traceability/food security for intensive systems
- Costs: system effect less obvious

**ENVIRONMENTAL ITEMS**
Gathers the majority of costs and benefits
Synergies for extensive systems

**CULTURAL ITEMS**
Cultural items are mainly seen as services
Synergies for extensive systems

**PRODUCTION ITEMS**
Mainly benefits, main costs about inputs consumption

**REGIONAL ITEMS**
Costs mainly internal to the farming job itself
More or less balanced for all case studies expect Gelderland (no cost)
### A context based characterisation of Benefits and Costs

<table>
<thead>
<tr>
<th>General to all case studies</th>
<th>Context based</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BENEFITS</strong></td>
<td><strong>COSTS</strong></td>
</tr>
</tbody>
</table>
| • Livestock offers multidimensional services  
  • *food fourniture for population* [7]  
  • *Actor to maintain life in rural area* [6]  
  • Livestock as an important economical actor  
  • *Wealth and job creation* [6]  
  • *Good image for tourism* [6] | • Livestock provides environmental services  
  • *Use of byproducts* [5]  
  • *Biodiversity* [5]  
  • *Soil quality* [4]  
  • *Forest prevention* [2]  
  • Livestock as a territorial actor  
  • *Landscape shaper* [5]  
  • *Valorization of land not suited for other activities* [4]  
  • Livestock as a risk for public health  
  • *Animals Future – EAAP 2018*  
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  • *Animal Future – EAAP 2018*  
  • *Animal Future – EAAP 2018*  
  • *Animal Future – EAAP 2018*  
  • *Animal Future – EAAP 2018*  
  • *Animal Future – EAAP 2018*  | • Livestock has a negative impact on land use: intensification or abandonment [6]  
  • Livestock offers poor working conditions [6] | • Livestock has a negative impact on environment  
  • *Air pollution* [5]  
  • *Soil exhaustion and pollution* [4]  
  • *Visual pollution* [3]  
  • Livestock as a risk for public health [2]  
  |
To sum up...

• Lots of interesting material for each case study:
  • Diversity of benefits and costs
  • List of innovations related to this subject
  • Identification of stakeholders involved

• No revolution about trade-off and synergies for the moment
  • But a confirmation of previous research work
As a conclusion
Perception of benefits and costs: a controversial subject

Livestock controversy registers *(E. Delanoue and al., ACCEPT project, 2017)*

- **Environment**
  - Impact of human activities on natural environments
  - GHG Emissions
  - Water pollution
  - Animal feed (soya, GMO)
  - Resource use (water, land)
  - Harmful effects (odours, noise)

- **Animal condition**
  - How animals are raised
  - Welfare definition
  - Living conditions
  - Pain Management
  - Animal ethics

- **Sanitary**
  - Impact of livestock production on health
  - Antimotic
  - Risks of epizootic diseases and zoonoses

- **Socio-economic**
  - Development Models
  - Intensive system
  - Geographic concentration

**Not identified by stakeholders**

→ Livestock actors do not systematically express the same costs as citizens or NGO
Thank you for your attention!

To know out more:

- delphine.neumeister@idele.fr
- Presentation: Evelien de Olde (at 14.30)
- Poster: Aart van der Linden (nr. 19.13)

The project Animal Future receives funding from the European Union’s Horizon 2020 Research & Innovation Programme under grant agreement no 696231 [Susan]