FARMERS AND CITIZENS PERCEPTIONS OF ECOSYSTEM SERVICES AND SUSTAINABILITY OF MOUNTAIN FARMING

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INTRODUCTION: private and public goods

Multifunctional mountain agriculture

Private goods
- Animal products

Public goods and services
- Conservation of biodiversity
- Maintenance of cultural landscape
- Prevention of hazards: forest fires (Med.)
- Etc.

- Non-excludable
- Non-rival
- Non-marketable
- Inherently linked to extensive livestock farming systems

INTRODUCTION: ecosystem services (ES)

- Direct or indirect benefits that humans get from nature
- Good link: (agro) ecosystem functioning ” human wellbeing
- Widely adopted by policy makers and managers
- Few studies on the delivery of ES by pasture-based animal agriculture (biophysical, economical or socio-cultural)

Ecosystem Services (ES)

- Provisioning
  - e.g. food, raw materials
- Regulating
  - e.g. soil fertility, climate regulation
- Habitat
  - e.g. photosynthesis, nutrient cycling
- Cultural
  - e.g. aesthetic, recreation, education

Millennium Ecosystem Assessment (2005)
OBJECTIVE

To gain information on the spontaneous knowledge and perceptions of farmers and citizens on relationships between mountain animal agriculture and the environment

- Delivery of Ecosystem Services
- Other sustainability issues
METHODOLOGY

- 5 focus groups (FG) about relationships between pasture-based mountain livestock and the environment
  - 2 FG (n=11) livestock farmers
  - 3 FG (n=22) citizens

- Moderator + general questions:
  - Do you know the term “ecosystem services”?
  - How do you think livestock production affects the environment and vice versa?
  - How these relationships between livestock production and the environment affect you?
  - What geographical areas/places can you identify that show the effect of livestock on the environment?
  - Should society pay for the delivery of environmental services? Who? In what way?

- Video-recording, transcription, text analysis

- Categorization and quantification
RESULTS

Ecosystem services (mentioned)

- Education/ cognitive dev.
- Spiritual experience
- Culture/ art
- Recreation/ tourism
- Aesthetic (landscape/ vegetation)
- Gene pool protection (biodiversity maintenance)
- Lifecycle maintenance (nutrient cycling, photosynthesis)
- Biological control (pests)
- Pollination
- Soil fertility/ erosion prevention
- Water purification/ waste management
- Regulation of water flows
- Disturbance prevention (forest fires)
- Climate regulation (incl. C seq.)
- Air quality regulation
- Ornamental resources
- Medicinal resources
- Genetic resources
- Raw materials (firewood, forage)
- Water
- Food (meat and milk)

No participant knew the term “Ecosystem Service”
RESULTS

FARMERS AND CITIZENS PERCEPTIONS OF ECOSYSTEM SERVICES AND SUSTAINABILITY OF MOUNTAIN FARMING

- Farming activity
- Local circumstances
- General concerns

Total
- Provisioning 36%
- Regulating 27%
- Habitat 21%
- Cultural 16%

Farmers
- Provisioning 18%
- Regulating 25%
- Habitat 37%
- Cultural 19%

Citizens
- Provisioning 47%
- Regulating 21%
- Habitat 13%
- Cultural 19%

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RESULTS

Other sustainability issues (mentioned)

- Policy/legal context
  - Legal framework (sanitary regulations/ abattoirs)
  - Communal grasslands (access, infrastructure, etc.)
  - Agri-environmental schemes
  - CAP

- Socio-economic context
  - Ethical aspects on food production (industrialization)
    - Food security
    - Food safety
    - Quality of food products
    - Rural development/ abandonment

- Social/farm
  - Wildlife (and other) conflicts
  - Farm continuity (ageing pop./ succession)
  - Quality of life/ satisfaction
  - Labour/ working conditions

- Economics/farm
  - Farm management: feeding system
  - Farm management: diversification
  - Farm management: self-sufficiency
  - Farm structure and size
  - Prices of outputs
  - Use and price of inputs (oil and feedstuffs)
  - Profitability
REMARKS

- ES more visible or familiar to humans are more easily identified and valued.
- Different stakeholders (farmers and citizens) valued differently some ES according to their capacity to satisfy individual needs or interests.
- But also shared a large number of concerns on the relationships between mountain farming and the environment.
IMPLICATIONS

- Agri-environmental policies in mountain areas should take into account the views and demands of stakeholders with different interests (citizens pay and farmers implement policies).

- Payments for ES: “public money for public goods”
  - Biophysical relations between agricultural practices and delivery of ES (indicators)
  - Quantitative monetary and socio-cultural valuation of ES
Thank you!
RESULTS

Ecosystem services (discussed)

- Provisioning
  - Food (meat and milk)
  - Water
  - Genetic resources
  - Medicinal resources
  - Raw materials (firewood, forage)
- Regulating
  - Air quality regulation
  - Climate regulation (incl. C seq.)
  - Disturbance prevention (forest fires)
  - Regulation of water flows
  - Soil fertility/erosion prevention
  - Water purification/waste management
- Cultural
  - Education/cognitive dev.
  - Spiritual experience
  - Culture/art
  - Recreation/tourism
  - Aesthetic (landscape/vegetation)
- Habitat
  - Gene pool protection (biodiversity maintenance)
  - Lifecycle maintenance (nutrient cycling, photosynthesis)
  - Biological control (pests)
- Ornamental resources
## Results

### Other sustainability issues (discussed)

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