

Creating stakeholder categories through their identified ecosystem services and linking them to underlying ecological processes using synthetic matrices

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Scientific Problem addressed

- Marginal agricultural areas such as the mountains of Europe provide a variety of non market services besides agricultural production, involving a wide range of possible stakeholders
- Assessing the vulnerability of such areas depends on identifying who will be affected and why.
- The EU funded VISTA project models (agro-)ecosystem changes under a set of prospective agricultural land use scenarios.
- Categorising stakeholders through their vision and understanding of (agro-)ecosystems and their landscape setting makes possible an assessment of scenario impact on stakeholders.



Villar d'Arene, in the French Alps (1650 - 2900 m a.s.l.): a marginal agricultural area of spectacular scenic beauty and important cultural and natural heritage value. Is it vulnerable to land use change?

What will people think about future land use changes? Let's ask them!

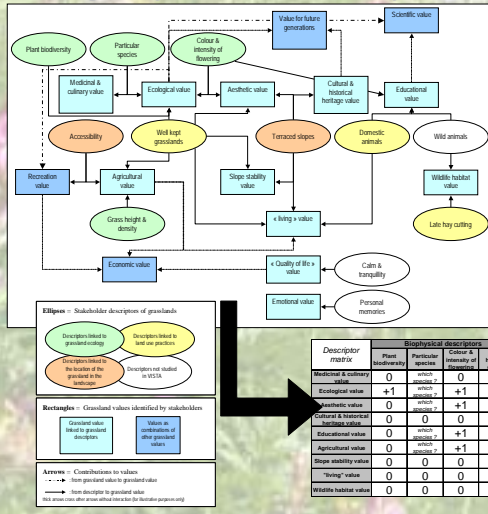


Methodology

We used semi-guided interviews to gather social data on the value and description of the landscape and its grassland component

- We preferred spontaneous descriptions of sub-alpine grasslands and their landscape setting in Villar d'Arene (Hautes Alpes, France) to a set questionnaire. Semi-guided interviews were used to keep the interviewee in focus. 45 interviews were carried out during the summer of 2004. The survey did not intend to be representative of a stakeholder population, but of its diversity.
- A qualitative synthesis was made of grassland features identified by stakeholders as being important for different values of the local grasslands. We called these features "descriptors". They can be related to either ecological characteristics of those grasslands or current land use practices (measured and/or modelled in the VISTA project). Other descriptors relate to given landscape components that will not change in the VISTA project's time frame). Other descriptors do not relate to measurable features of the grasslands - we do not take them into account.
- A multivariate statistical analysis of interviewee data (co-inertia of tables "interviewee x landscape description" and "interviewee x grassland description") was carried out to identify how landscape and grassland descriptions relate. This information was used to create abstract ideal type discourses about grasslands in their landscape setting. Those ideal types are our way of classifying stakeholders.

Linking ecosystem services to ecosystem features



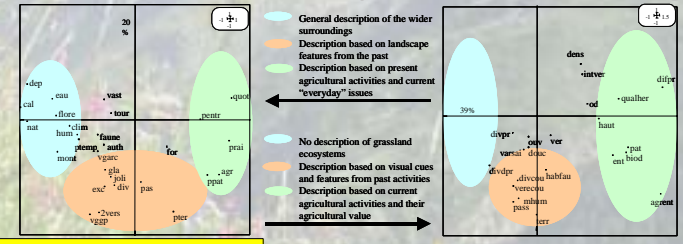
A qualitative synthesis of all interviews tells us which ecosystem features stakeholders relate to the ecosystem services they identified

A statistical analysis of the relationship between discourses on the whole landscape and its grasslands helps us create abstract "ideal type" discourses (3 in our typology)

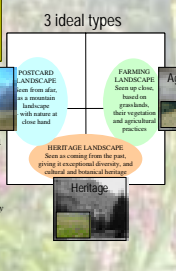


Field work provides us with ecological understanding of underlying processes

Stakeholder discourses on ecosystems and the wider landscape



- General description of the wider surroundings
- Description based on landscape features from the past
- Description based on present agricultural activities and current "everyday" issues
- No description of grassland ecosystems
- Description based on visual cues and features from past activities
- Description based on current agricultural activities and their agricultural value



Locals do not see the study site as a landscape but as their home, they often describe grasslands by their current agricultural use (agro-ruralist discourse). This vision of the site is in opposition to a vision often developed by tourists: the site is more than anything else, a scenic landscape (the link to its grassland components is rare - postcard discourse). A third (educated) category often insist on the heritage value of the landscape (both ecological and cultural - heritage discourse).

Linking stakeholder discourses to ecological knowledge

Links between data gathered using ecological field work and / or social surveys is synthesised in matrix format

Final Descriptor Matrix	% grasses	% legumes	% rosas	Vegetation density	Vegetation height	Synthetic value species index	Flowering index
Medicinal & culinary value	0	0	0	0	0	+1	0
Ecological value	+1	-1	0	+1	0	0	+1
Aesthetic value	0	0	0	0	0	+1	+1
Cultural & historical landscape value	0	0	0	0	0	0	0
Educational value	0	0	0	0	0	+1	+1
Agricultural value	0	-1	+1	0	+1	0	+1
Slope stability value	0	0	0	0	0	0	0
"Living" value	0	0	0	0	0	0	0
Wildlife habitat value	0	0	0	+1	+1	0	0

Ecosystem Service Matrix	Medicinal & culinary value	Ecological value	Aesthetic value	Cultural & historical landscape value	Educational value	Agricultural value	Slope stability value	"Living" value	Wildlife habitat value
"Postcard"	0	0	0	0	0	0	0	0	0
"Agro-ruralist"	0	+1	0	+1	0	+1	0	+1	0
"Heritage"	+1	+1	0	+1	+1	0	+1	+1	0
Agromonist	0	0	0	0	0	0	0	0	0
Naturalist	+1	+1	+1	+1	+1	-1	0	0	+1
National Park Authority	0	+1	+1	+1	+1	+1	+1	+1	+1

Matrices synthesise relevant data in order to link ecosystem features (here, descriptors of grassland ecological features) to ecosystem services (here, grassland values identified by stakeholders) and ecosystem services to stakeholders (here, ideal types based on discourses about grasslands in their landscape setting). Used to identify stakeholders most likely to be affected by ecosystem changes

Discussion

- Ideal type discourses were used to synthesise the diversity of relationships between people and grasslands. They voluntarily ignore the complexity of individual discourses. This means that one should not try to fit individual stakeholders into a given ideal type. Can these ideal types be used to assess impacts of ecosystem changes on real people?
- Focusing on discourses about ecosystem services rather than active use (material or not) means that non active stakeholders are not excluded from the valuation of those services. Discourses are the way people justify both their own behaviour and that of others. It is also through those discourses that political compromises are found, concerning options for acceptable ecosystem changes and their consequences.
- Acceptability is one way of measuring people's capacity to adapt to environmental change. Focusing on discourses, and changes acceptable to each one of them, can be useful to incorporate adaptive capacity into an evaluation of environmental change impacts.

Discourse has strong ties to social justification and political compromise. Making a future acceptable can be seen as an exercise in political compromise. Using discourses for environmental valuation means the valuation can be negotiated in the political arena

The VISTA Project

