Preserving permanent mountain grasslands in Western Europe: Why are promising approaches not implemented more widely?

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ABSTRACT

To protect grasslands and maintain the ecosystem services they provide, many European countries have been offering agri-environment measures aimed at maintaining extensive grazing by cattle, sheep or goats. Yet, despite more than two decades of agri-environment measures, semi-natural mountain pastures are still seen as threatened by abandonment and subsequent shrub encroachment. Building on a three-round Delphi inquiry, we analyse the perception of a range of experts on how measures aimed at maintaining mountain grasslands are designed and implemented in Austria, France and Norway. Results show that the experts see the need for a stronger involvement of diverse regional actors, the need to increase the flexibility given to farmers in managing mountain grasslands, and the need to reconceptualise monitoring as a social learning process. While these approaches are implemented in some 'best practice' examples, they are not widespread. Understanding these approaches as requiring double-loop learning may contribute to explaining their limited spread. Indeed, they build on a radically different conceptualization of farmers and of researchers, and thus of how agri-environment measures need to be designed and implemented to be effective. Yet, such radical changes are likely to be resisted.

1. Introduction

Historically, permanent mountain grasslands have been used by farmers as pastures in the summer months, to graze cattle, sheep or goats (Poschlod and WallisDeVries, 2002). These grasslands are semi-natural, i.e. they require management by farmers to be maintained. They are species-rich, but productivity is low as the growing season is short and they are usually located on nutrient-poor soils (Hopkins, 2009). While this makes them less attractive to farmers, they are valued by society for the broad range of ecosystem services they provide. These services are highly interconnected and include regulating services, such as buffering climate extremes, preventing flooding, and purifying water; provisioning services, such as providing high quality fodder for livestock; supporting services such as nutrient cycling, maintaining biodiversity and soil fertility; and cultural services, such as contributing to the aesthetic value of open landscapes and offering a space for recreational activities (Gibon, 2005; Quétier et al., 2010; Lindeman-Matthies et al., 2010; Lavorel et al., 2011; Ocak, 2016).

The land-use changes induced by agricultural modernisation are threatening these extensive grasslands (MacDonald et al., 2000; Eychenne, 2008). Indeed, while in favourable areas agriculture has intensified, in less favourable areas – such as mountain areas – land tends to be abandoned. As a result of abandonment, the semi-natural mountain grasslands are encroached by shrubs and may over time revert to forests (Cocca et al., 2012; Carlson et al., 2014). This change in land-use is linked to changes in the ecosystem services that can be provided (Schirpke et al., 2013).

In an effort to counter-act the adverse impact of agricultural practices on the environment, the 1992 MacSharry Reform of the Common Agricultural Policy (CAP) required every Member State to introduce an agri-environment programme[1] (see Council Regulation (EEC) 2078/92; Potter and Goodwin, 1998; Strijker, 2005; Isoni, 2015). Since their inception almost 25 years ago, the programmes have evolved over the subsequent 7-year programming periods of the CAP. The programmes are diverse, not least given the high level of subsidiarity which allows the Member States much leeway in the design of their overall

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[1] While Norway is not a Member State of the EU, it has also implemented agri-environment measures as part of its agricultural policy.

programme and of individual agri-environment measures (Beckmann et al., 2009). What they have in common is the basic rationale: participation is voluntary, and the state pays participating farmers to deliver an environmental service. Such payments have been offered to farmers to maintain grazing the mountain pastures in the summer months, so as to keep the landscape open and contribute to preserving the specific biodiversity of these semi-natural grasslands.

The agri-environment measures have been relatively successful regarding their uptake, however they have been only partially successful in achieving their conservation goals (Uthes and Matzdorf, 2013; Dedeurwaerdere et al., 2015; Hinojosa et al., 2016). Various reasons for this limited effectiveness have been identified, such as the influence of broader societal changes leading to continued farm abandonment (MacDonald et al., 2000; Marini et al., 2011); a lack of economic attractiveness of the measures which focus on compensating cost incurred and income forgone, rather than being incentive payments (Hasund, 2013; Saunders, 2015); or the design and implementation of the measures (Gross, 2011; Ingram et al., 2013; Girard et al., 2015). Indeed, by prescribing specific management practices, the measures insufficiently acknowledge the spatial diversity of mountain grasslands, the complexity of ecological processes, and the uncertainties regarding the impact of climate change (Komac et al., 2013; Duru et al., 2015; Girard et al., 2015).

While there have been a number of studies focusing on why farmers do (not) adopt agri-environment measures (e.g. Morris and Potter, 1995; Schenk et al., 2007; Uthes and Matzdorf, 2013), there is much less literature available on the perception of institutional actors (e.g. Beckmann et al., 2009). However, the views of these institutional experts working in government agencies, in farmer associations, and in environmental NGOs are important, as Member States have been encouraged to design the measures in a decentralised and participatory way. The design of the measures is thus the result of a complex and protracted political process (Rutz et al., 2013). This process starts at EU-level and leads to a broad framework published by the European Commission (see e.g. Regulation (EU) 1305/2013 and Regulation (EU) 1306/2013) and ends when the Commission approves the agri-environment programme defined by each Member State. The individual agri-environment measures are designed in a process at (sub-)national level, and are thus influenced by the respective policy arena, with its specific government structures, political ideologies, and administrative culture, as well as relative political power of various policy actors at various scales (Beckmann et al., 2009). While the specific processes that lead to defining a measure vary, in most cases the agricultural administration and farmers' interest groups play a defining role, but the environmental administration as well as researchers and environmental NGOs may also be involved (Beckmann et al., 2009; Benoit and Patsias, 2014). Overall, despite nationally varying efforts to include a diversity of actors during development and evaluation, agri-environment programmes can still be seen as following a state-led and expert-led mode of governance, characterised by a top-down approach to designing and monitoring (Morris, 2006; Prager, 2015).

This paper aims to add to the discussion why agri-environment measures have so far been limited in their effectiveness in preserving semi-natural mountain grasslands. We propose that while measures targeting the maintenance of grasslands have certainly changed over the last 25 years, the improvements were mostly incremental, i.e. based on single-loop learning. While this might have improved the effectiveness of the administration of the measures in a number of ways, it has not achieved the expressed goal: maintenance of semi-natural mountain grasslands. The changes needed to achieve this goal might well require double-loop learning, which would imply to design and implement measures based on radically different assumptions.

The distinction between single- and double-loop learning was developed by Argyris and Schön (1978) in the context of organisational learning. It has been transferred to learning in a policy context (e.g. Grin and Lober, 2007; Pahl-Wostl, 2009; Hall, 2011). In the context of

agri-environment measures, we understand single-loop learning as referring to incremental changes, such as adaptations of contractual arrangements or fine-tuning specific aspects of prescribed management practices. This constitutes instrumental or technical learning, based on the experiences gained during the implementation of measures in the previous programming periods. It is concerned with adjusting the measures to address day-to-day problems and with increasing the efficiency of various processes. The aim is thus to improve performance, without questioning established routines, or the underlying assumptions and beliefs. In contrast, double-loop learning does question the assumptions that guide the definition of priorities, of the boundaries of the system under consideration, and of means suitable to achieve the goal. As a result, they present a radical departure from established practices. As Pahl-Wostl (2009) points out, this often implies the need for social learning, as it may lead to changes in the actors involved, and to shifts in the allocation of resources. Distinguishing between changes that build on single-loop vs. double-loop learning thus helps to understand why some proposed changes are resisted by some actors. Indeed, as changes building on double-loop learning tend to be a radical departure from mainstream approaches, they tend not be compatible with the dominant policy regime. This may curtail their spread.

The next section describes how we collected the data using a Delphi inquiry to ask experts in Austria, France and Norway to share their views on the current state of mountain grasslands and on the agri-environment measures to maintain open landscapes. We then summarize the changes the experts saw as necessary to make these measures more effective. We do so under three broad headings: involving a broader range of stakeholders, increasing the flexibility at farm-level, and re-framing monitoring as a social learning process. We then illustrate how these changes have been implemented in 'best practices' examples provided by the experts. We close by discussing the extent to which these 'best practices' build on double-loop learning, and how this may contribute to explaining why they are not implemented more widely. Indeed, we argue that the changes imply a radically different conceptualisation of farmers and of researchers; and as a result of the designs that are perceived as effective. However, radical changes in the design and implementation process are likely to be resisted.

2. Method: the delphi inquiry

The Delphi method of inquiry is a qualitative method through which information is gathered iteratively, involving a panel of subject-matter experts (Hsu and Sandford, 2007; Grisham, 2009; Häder, 2009). While the Delphi technique has been used to seek consensus and make predictions, in this study, it was used to reveal commonalities between the three countries, and to enable experts to learn from each other's experiences and proposals for promising design options. In contrast to interviews, the Delphi inquiry allows reflection on the results of the previous round and allows the experts to reflect on their answers in light of the answers of other experts.

Members of the expert panel were recruited in Austria, France, and Norway. Experts were identified informally, mostly through direct contacts of researchers, who were familiar with and engaged in networks related to mountainous grasslands. Further experts were identified through their membership in formal working groups and committees, as well as through referral. The aim was to include all groups who were or who could be involved – directly or indirectly – in the design or administrative implementation of measures. We thus recruited experts from a range of occupational backgrounds: experts working in government agencies (at regional, national, and EU level), in advisory services, in research and education, in NGOs concerned with environmental protection and rural development, as well as in private sector businesses. We did not include farmers because the aim was not to understand the challenges of implementing specific measures in a specific place, but gain an overall view of the administrative implementation process.