

The importance of alpine pasturing for the conservation of biodiversity - Intermediate results of the Interreg IIIB – project AlpNaTour

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Abstract: Mountain agriculture and alpine pasturing formed over centuries cultural landscapes with high biodiversity. In the Italian alpine bow the development of permanent grassland is characterised by a dramatic decrease. To preserve those ecologically valuable cultural landscapes, certain areas were declared as Natura 2000 sites. The implementation of the Natura 2000 network in general and the conservation of such man-made rural habitats often need specific management plans. In the framework of the EU-project AlpNaTour a management plan for a Natura 2000 site, located in a still agriculturally used area of the Stelvio National Park/South Tyrol (Italy) was developed. The complex interrelations between the requirements for maintaining alpine pastures and the protection of flora and fauna became obvious through a questionnaire-based analysis. Starting from this specific case the paper points out the challenges encountered in the elaboration of the management plan. Finally it gives indications whether the support of the analysed alpine pastures is reasonable or not.

Key words: Natura 2000, biodiversity conservation, management plan, alpine pastures

Introduction

The European network of protected areas Natura 2000 constituted by the Birds Directive¹ and Habitats Directive² contributes to ensure biodiversity including ecologically valuable natural and semi-natural habitats. At present this European initiative enters in its implementation phase. In Natura 2000 sites the maintenance or the development of the favourable conservation status of the habitats is implemented by measures on a landscape scale. These consider not only the environmental requirements of the site, but also the social and economic conditions of the region (Habitats Directive, Art.2).

The Habitats Directive (Art. 6) recommends the solution of conflicts emerging from all these requirements through management plans. At the same time it leaves a wide scope to the Member States for their elaboration. Therefore States and even regions applied different approaches.

The idea to compare and harmonise all these different approaches including guidelines and methods was the starting point for a European research project. The Interreg IIIB-project AlpNaTour aims at developing a guideline and checklists for the elaboration of management plans in the alpine space. Best practice will be derived from the analysis of existing guidelines and the application of different promising methods and approaches in Natura 2000 sites located in the alpine bio-geographic region.

The Italian sites investigated within the project are located in the Stelvio National Park in South Tyrol. The Stelvio National Park (1346 km²) is one of the largest in the alpine bow and

¹ Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds (Birds Directive). OJ L 103, 25.4.1979, p. 1.

² Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive). OJ L 206, 22.7.1992, p. 7.

connects to the Swiss National Park and to the Italian Natural Parks Adamello-Brenta and Monte-Tessa. One of the main targets in this vast network of habitats is to create the best conditions for the conservation and development of biodiversity. Here specific instruments contribute - especially within open cultural landscapes - to regulate the interests of both biodiversity conservation and agricultural land use. One of these instruments is the management plan and it will be developed for the Italian Natura 2000 site "Chavalatschalm" (IT 3110040). This area measures 3521 ha and its elevation ranges from 1358 m to 2935 m. The present habitats can be described as alpine and boreal heaths, siliceous grasslands, semi-natural dry grasslands with important orchid sites and mainly acidophilous *Picea* forests of the montane to alpine levels.

Mountain agriculture with alpine pastures is the main land use on site and responsible for the important rural habitats with high biodiversity (Dietl, 1995). Their favourable conservation status only subsists as long as the use of alpine pastures continues. Grazing these highlands may even increase biodiversity (Sarmiento, 2006). But the management of alpine pastures is not profitable anymore and needs financial aid. Since landscapes - like alpine pastures - are not valued in monetary terms, the challenge is to judge the appropriate provision and disposition of supporting landscape conservation (Hadjigeorgiou *et al.*, 2005). So the main question is, whether the support of alpine pastures through expensive measures is also reasonable - despite of the Natura 2000 aim - considering the socio-economic requirements of regional development.

The profitability of the alpine pastures has been analysed in an empiric study. It revealed the actual situation of the alpine pastures and analyzed their carrying capacity. Based on the results of this study, trends about the future prospects of the alpine pastures and indications for the elaboration of the management plan are derived.

Method

The three alpine pastures located within the site were examined during summer 2005. Here dairy cows are held over the summertime and their milk is directly processed into cheese and butter. Each alpine pasture belongs to a municipality and is organised by the elected foreman. All farmers of the respective municipality have the right to drive their dairy cows up on the alpine pasture.

The study was divided into two steps. First the alpine pastures themselves were surveyed in terms of infrastructures, type of management, working conditions and livestock. Important information was gathered from interviews with the foremen of the three pastures.

In the second step, the individual situation of 38 farmers using the alpine pastures was analysed. If general agricultural conditions are poor, no successors are found for the farms and as a consequence also the alpine pastures will be abandoned. Therefore quantitative and qualitative information about the general circumstances of the farms was gathered through a structured questionnaire. An open-ended interview focussed on the intentions of the farmers about the future management of their farms in the valley and the use of the alpine pastures. Open-ended responses allow a qualitative interpretation of the analysis.

Results and discussion

Actual condition of the alpine pastures

The infrastructure and working conditions of two of the three analysed alpine pastures are on a high level. Their foremen think positive about the future and envisage several projects for ongoing improvement. The infrastructures of the third alpine pasture would need restoration

works, but those won't be carried out as long as no street connects the alpine hut to the valley villages. Subject to these circumstances its foreman is not positive about the future. He fears that within the next years even less farmers will use his alpine pasture. Also the engagement and motivation of personnel like shepherds and workmen for milk products become harder and harder. For the continuity of management of this alpine pasture the construction of the connecting street is the essential factor. Finally the general decrease of dairy cows held on these three alpine pastures in the last decades has to be mentioned.

Future successors of the farms

The key factor for the future of every alpine pasture is the number of farmers using it. Their number as well as the number of dairy cows continually changes, depending on the general agricultural conditions. In addition not every farmer has a successor in prospect. Only 31,6% of the asked farmers know who will be taking over. From the remaining 68,4%, those farms are at risk to get abandoned within the next 10-15 years, whose farmers are over 60 years old. This applies to 21,1% of the asked farmers (Fig. 1). In consequence one fifth will not use the alpine pasture anymore. Interesting in this case is that 81,8% of the asked farmers think, that the conservation of cultural and rural landscape is "very important" or "important".

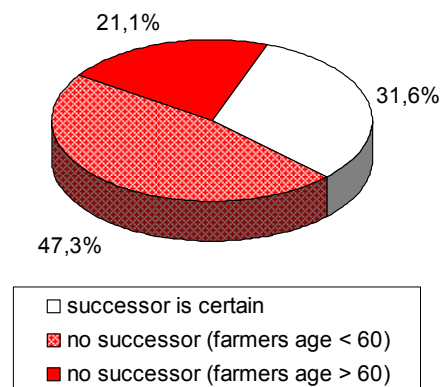


Figure 1: Amount of farms with prospect of a successor (considering the farmers age).

Conclusion

In the face of these results the management of the alpine pastures will go under the limit of profitability. A support is therefore economically not reasonable. Consequently the current land use with alpine pastures as a form of landscape management is not guaranteed for the future. Land use change results in site-related successional processes of the vegetation type. Vegetation of alpine pastures develops after the abandonment to forest as the secondary climax vegetation, losing the high biodiversity of the alpine pastures (Tasser *et al.*, 1999). Acting in the sense of Natura 2000 would mean to adopt measures against the loss of biodiversity and consequently to support the alpine pasture. Even if supporting the alpine pastures is not reasonable from an economic point of view it is from the environmental one.

But in some cases, like in the third analysed alpine pasture, only drastic and expensive measures like the construction of a connecting street would be an effective support. Indeed the street would facilitate the management of the alpine pasture. The accessibility of the alpine pasture by car would motivate more personnel to work there and allow interventions by the veterinary. Also the forage and the cattle itself could be easily transported by tractor.

Furthermore the needed restorations on the infrastructures of the alpine pasture would be reasonable and improve the working conditions. But this intervention would surely endanger the habitat itself and his rare species. The street would cut through a courtship-place of *Tetrao urogallus* (protected through the Birds Directive). The wood grouse is adapted to this type of cultural landscape with alpine pastures, needing their man-made open spaces for the courtship and as feeding places (Möckel, 2002). The dissection of habitat represents the biggest danger for the protection of *Tetrao urogallus* in the alpine space (Suchant, 2002). This intervention would not help to achieve the aims of Natura 2000 in the sense of protection of endangered species. Accordingly the construction of the street cannot be proposed in this Natura 2000 management plan, even if it would support the management of the alpine pastures. Different alternative projects to the construction of the street as a funicular for example have to be taken under examination.

The management plan has to deal with an old vicious circle of the actual reality of cultural landscape in the alpine space. Only the use of the alpine pasture contributes to the conservation of semi-natural habitats, but this form of traditional land use is not profitable anymore. The economic incentives given by the Province support the alpine pastures but it is not sure that they will also be enough for assuring their maintenance. As Giupponi *et al.* (2006) showed in their study, on-site dairy processing gives the opportunity of development of agri-tourism with high-quality products. So, all possibilities to conserve these alpine pastures have to be discussed. Based on this study and in consideration of the socio-economic aspects of the region and the conservation aim of the Natura 2000 habitats specific measures will be derived and tailored conflict-solutions will be developed. So the management plan can be an instrument to interrupt this vicious circle.

References

- Dietl, W. 1995: Wiesen und Weiden im Berggebiet. *Montagna* 6: 1-8.
- Giupponi, C., Ramanzin, M., Sturaro, E. & Fuser, S. 2006: Climate and land use changes, biodiversity and agri-environmental measures in the Belluno Province, Italy. *Environmental Science & Policy*. In press.
- Hadjigeorgiou, I., Osoro, K., Fragoso de Almeida, J.P. & Molle, G. 2005: Southern European grazing lands: Production, environmental and landscape management aspects. *Livestock Production Science* 96: 51-59.
- Möckel, R. 2002: Das Auerhuhn in den Kiefernheiden der Lausitz – früher, heute und in Zukunft. LWF-Wissen Nr. 35 – Bayerische Landesanstalt für Wald und Forstwirtschaft: 37-50.
- Sarmiento, L. 2006: Grazing impact on vegetation structure and plant species richness in an old-field succession of the Venezuelan Páramos. In: *Land use change and mountain biodiversity*, eds. Spehn, Liberman & Körner. Taylor and Francis, Basel (Switzerland) and La Paz (Bolivia): 119-136.
- Suchant, R. 2002: Das Auerhuhn im Schwarzwald – Beispielhaftes Konzept zur Erhaltung einer überlebensfähigen Population. LWF-Wissen Nr. 35 – Bayerische Landesanstalt für Wald und Forstwirtschaft: 54-69.
- Tasser, E., Prock, S. & Mulser, J. 1999: The impact of land-use on vegetation along the Eastern Alpine transect. In: *Land-Use Changes in European Mountain Ecosystems – ECOMONT – Concepts and Results*. Europäische Akademie Bozen, Fachbereich Alpine Umwelt, Blackwell- Berlin: 235-246.