Result-oriented biodiversity measures for alpine agriculture

The Swiss alpine biodiversity is increasingly threatened by a dichotomous development: on the one hand by intensification of better suitable alpine areas and on the other hand by abandonment of less suitable alpine areas. To counteract the development of decreasing biodiversity effective measures to increase or at least stabilize the biodiversity level in the Swiss alpine region are needed. Two different approaches are applied by the Swiss government: an action-oriented approach since 1993 and additionally a result-oriented approach since 2001. The action-oriented approach demands certain actions from farmers, for example late cutting and no fertilization for an extensive meadow. If these actions are followed, the farmers receive subsidies. The result-oriented approach has no actions predefined. The farmers get subsidies if they achieve a high biodiversity-related result measured by a certain amount of indicator species present in their land. This thesis investigates the potential for result-oriented biodiversity measures that can create a higher income and at the same time increase biodiversity on Swiss mountain farms. The following research questions are tackled:

- How committed are the farmers currently towards result-oriented biodiversity measures?
- How do the farmers judge the result-oriented approach and why?
- Which result-oriented biodiversity measures are seen implementable by the farmers in the future and what are the reasons therefore?
- Which support do the mountain farmers need to better implement the result-oriented biodiversity measures?

The thesis is based on literature review, expert interviews, a qualitative and a quantitative survey. 21 farmers in the Canton of Lucerne were interviewed qualitatively as part of the European MERIT project (Merit based income from sustainable land management in mountain farming). The results obtained in these interviews were used to refine the questionnaire for the quantitative survey conducted with 1000 farmers in the German-speaking alpine region of Switzerland. Finally, 146 questionnaires were evaluated with several socio-economic statistical methods.

Currently one third of the surveyed farmers are committed to do the minimum requirements for biodiversity, which is to have at least 7% of their land used for biodiversity promotion. One sixth of the farmers are very committed as they have more than 27% of their land used for biodiversity promotion. Considering the preference on action- or result-oriented approaches, three quarters of the surveyed farmers prefer the action-oriented approach. This preference refers to the fact that less controlling is needed and clearer information which actions farmers have to take to receive subsidies are given. One quarter of the farmers prefer the result-oriented approach, mainly because they expect it to promote biodiversity more effectively. However, in the qualitative interviews many farmers mentioned that both approaches are needed to effectively increase biodiversity. The most preferred measures that farmers are willing to implement are the ecological improvement of meadows and forest edges, as they believe that this is socially desired. The least preferred measures that farmers are willing to implement are the ecological improvement of hedges as they believe that this is practically complicated and the ecological improvement compromises certain plant species which are disliked by the farmers. In order to support farmers in their efforts to increase biodiversity in the mountains, they mostly favor to be supported locally by the cantonal consultancy, the agricultural representatives and agricultural magazines.

As it can be deduced from the results, there are two types of farmers, one type that is implementing measures without knowing their detailed implications and wanting the least amount of controlling possible, the other type implements measures knowing which species are favored by the measures. Therefore it is important to adjust the consulting to the specific farmer group accordingly: The farmers preferring the result-oriented approach might be interested in projects that involve the definition of target species and measures for their support. Further it would make sense to continue regionalizing biodiversity-related measures in order to achieve specific ecological goals. These might be accomplished with voluntary meadow competitions that activate farmers preferring the action-related approach. Further research is needed to evaluate the ecological effectiveness of result-oriented

approaches in the alpine region especially regarding the impacts on faunistic diversity. Swiss agricultural politics, which promote action- and result-oriented approaches simultaneously, are generally appreciated by the Swiss mountain farmers and can therefore be continued the way they are proposed for the time period 2014-2017.

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