

The Network of Ecological Compensation Areas in Switzerland

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Background

Since 1993, the Swiss law and Ordinance on Direct Payments for Agriculture (ODP) enables farmers to be compensated for ecological measures. A catalogue lists different possible measures which can be implemented at farm level both to create space for nature and biodiversity and to generate an alternative income for farmers. Measures include the maintenance of e. g. semi-natural structures in the landscape such as high-stem trees, hedges, pastures and meadows which are not intensively used (detailed catalogue: ART 2009). Succeeding a fast increase in the number of these areas, stagnation has been observed (BIODIVERSITYMONITORING 2009). Additionally, it has become evident, that many compensation areas are in unfavourable conditions for biodiversity and their quality, especially species richness, is low. This motivated the extension of the ODP with an additional ordinance which tackles two main points: Ordinance on Regional Promotion of Quality and Networking of Ecological Compensation Areas in Agriculture (OEQ 2001).

Objectives

The OEQ for ecological compensation areas provides a mean to create corridors in the agriculturally utilised landscape. It asks for a general and independent analysis of the network capacities and possibilities within a landscape, encompassing at least several municipalities. This process is called "landscape development plan". Once this concept, including a rough biological/ecological analysis of species and habitats, as well as a map indicating the adequate places for establishing compensation areas, is formulated and approved by the cantons, the farmers in the studied areas will have the possibility to extend ecological compensation areas or to adapt their maintenance in order to obtain additional payments.

Enhanced linkage of single compensation areas within a network increases the possibility of exchange between meta-populations and thus the resilience within the ecosystem, especially in the context of climate change.

Involved organisations and stakeholders are:

- Swiss Ordinance on Direct Payments
- Local authorities (cantons) to implement and adapt laws and ordinances on regional level and create additional financial incentives

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- NGOs pushing the local authorities to perform the landscape analysis
- Farmers who implement the ecological compensation areas

Results

Since the implementation of the Ordinance on ecological quality and networking, 23% of all existing compensation areas receive payments for providing additional ecological quality (13% in the plains and 34% in the mountains, BDM 2006). These areas provide increased resilience as the species are able to migrate and disperse as a strategy of adaptation to external pressure, specifically climate change.

Many positive effects have been reported: Increased food provision (ASCHWANDEN *et al.* 2005) and increased habitat suitability leading to higher densities in field hares (HEYNEN 2008) or skylark (STÖCKLI *et al.* 2006).

Although many different species benefit from these measures, mainly common and widespread species are favoured by these adaptation possibilities (HERZOG & WALTER 2005).

Socio-Economic Benefits

In addition to the farmers benefiting from higher incomes due to direct payments, the local community receives an added value through a diverse and appealing landscape character which itself holds a higher potential for tourism. Additionally, the possibilities of ecological compensation measures provide an important alternative for farmers to diversify their income.

Environmental Benefits

Large corridors across the open, agriculturally used landscape support the active and effective population dispersal and exchange, ensuring resilience for species and increasing their chances for survival. Specifically, the combination of ecological compensation areas and nature conservation sites provides an interesting approach for an effective setup of a natural network for the dispersal and migration of most animal and plant species (KLEIJN *et al.* 2006).

Achievements and Challenges

Due to a strong link between the agricultural sector and policy, the system of ecological compensation areas has a rather stable basis, even though considerable amounts of money are involved. The positive perception of the ecological compensation areas as well as the backing of nature conservation in the Swiss population makes the system a successful and broadly supported instrument for nature conservation in agriculture.

Due to the national character of the OEQ and the local implementation (at the level of cantons and municipalities), however, the programme shows specific regional facets in its implementation which hampers the comparison between regions. The low interest in establishing ecological compensation areas in sites with good conditions for agricultural production causes problems in terms of gaps in the network. This results in the fact that in less intensively used mountain areas, the areas and share of qualitatively high level ecological compensation areas are higher than in the high-productive lowland areas.

Additionally, the focus on agriculture leads to undesired impacts since other sectors such as nature conservation or tourism are not considered adequately.

Long-winded adjustment processes are to be expected when implementing a nation-wide programme on ecological compensation.

Conclusions

Ecological compensation within the ordinance on direct payments provides a powerful and comprehensive approach to cover the important ecosystems within agricultural areas. Its extension with quality requirements gives an important basis for the effective setup of a network which holds the capability of resilience.

Due to its highly administrative character and strong policy involvement, it is not a very dynamic instrument to encounter adaptation for climate change. However, the relatively complicated and time demanding process for implementing the system is compensated by the resulting broad-scaled network of ecological compensation areas.

Further considerations, such as specific issues for climate change adaptation, need more time for being implemented.

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