

**알프스 산지 경관보존을 위한
유기농업과 농촌관광의 역할**

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유기농업연구소(FiBL) 사회경제연구부에서 근무하고 있으며 산지농업, 농업경영 및 경제, 농촌기업 연구를 수행하고 있다. '농민의 기업가적 능력개발 (Developing Entrepreneurial Skills of Farmers)'이라는 EU 연구과제에 참여하였고, 'FiBL 유기농업 네트워크(FiBL organic farm network)' 과제의 연구책임을 맡은 바 있다. 현재는 스위스 농업환경정책에 관한 연구를 수행하고 있다. 축산학으로 석사학위를 받고 '알프스 산지 여름농장의 지속성'에 관한 연구로 농업경제학 박사학위를 받았으며 그 과정에서 알프스 산지의 여름농장에서 직접 근무하면서 치즈를 제조하거나 소규모 농업관광에 관여한 경험이 있다.

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1973년에 설립되었으며 세계적으로 유기농법에 관한 연구와 기술보급을 수행하고 있다. 유기농업과 관련된 토양관리, 식물생산, 동물건강 및 행동학, 축산기술 분야에서 세계적인 수준이며 유기식품의 가공 및 시장분석에서도 세계적인 능력을 인정받고 있다. 유기농업연구소는 법적으로는 비영리 민간단체이지만 주로 스위스 연방농업부와 검역부로부터 재정적인 지원을 받고 있다. 이외에 다양한 공적 기관이나 민간단체 및 기업으로부터 프로젝트를 수주하고 연구비를 받고 있다.

유기농업연구소는 총 9개의 연구부서로 나누어져 있고, 현재 약 120명의 연구자들이 근무하고 있다. 현장중심적인 연구이외에도 자문, 교육프로그램, 전문보고서 및 각종 간행물(잡지, 통계자료, 문헌, 인터넷)을 통해서 농업에 관한 새로운 지식과 정보를 보급하는데 주력하고 있다. 과학적인 연구와 농업생산 현장을 밀접히 연계시키고 신속하게 지식을 전파하는 것이 유기농업연구소의 강점이다.

The Contribution of Organic Agriculture and Agritourism to Landscape Preservation in the Alpine Mountains

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1. Introduction: Relevance of Landscape and Tourism in the Alpine Mountains and Switzerland

The Alpine Mountains are one of the largest mountain systems in Europe. Essential parts of 7 countries (France, Italy, Switzerland, Liechtenstein, Germany, Austria, Slovenia) are situated in these mountains. Switzerland (61% of surface), Lichtenstein (100%) However, Liechtenstein is a small country with a total surface of only 160 sqm (Berggenuss 2009) and Austria (73%) are the countries with the largest shares in hilly or mountainous areas being part of the Alpine mountains (Berggenuss 2009).

As an ecosystem, the Alpine Mountains constitute an important regulatory system for biodiversity and water regulation. It is considered the most important reservoir for drinking water (in form of glaciers) and as largest reservoir of cultured and wild plant species and domestic animal breeds in Europe. Such a rich natural and cultural landscape provides the basis for many leisure activities in an environment of pure nature, water and air. Thus, while representing a vulnerable ecological sensitive area,

the Alpine Mountains are an important recreational area for locals and tourists (Fischesser 1998).

Sigrist (1998) estimates overnight stays in the Alpine Mountains to about 370 mio for 1995 and the rate of arrivals in the Alps compared to world tourism arrivals to 11% (rate of European tourism = 17%). This also complies with the share of value creation on world tourism of 10%.

Bätzing (2003) estimates that tourism in Austria and Switzerland (the two most important touristic countries in the Alpine Mountains) makes up approx. 6% of GDP.

Landscape is mentioned as the most important reason for tourists to visit (Rudmann 2004). Hunziker (2001) explored which landscapes the tourists prefer, and he found that a diverse and structured type of landscape is the most popular. Such a landscape has typically been shaped by agricultural activities in the past. Concluding, a prosperous Alpine tourism requires a cultivated landscape (Rudmann 2004, Hunziker 2001).

On the other hand, the demands of the tourism business for infrastructure and the many people arriving in the Alps may harm the ecologically sensitive areas and cause multiple socio-cultural problems (Bätzing 2003). The concept of "soft", "sustainable" or "eco" tourism tries to take this into consideration - and to balance the demand of tourism, other economic activities, social considerations and ecological considerations (Baumgartner 2002). To conclude, tourism activities in the Alpine mountains need the (ecological sensitive) cultural landscape. To maintain such a landscape, a respectful cultivation of the land is needed. In the past years there were discussions if an agricultural cultivation is imperative or if specially trained landscape managers could be employed to

do the job more efficiently. So far, the subject is still controversial. For this article, we follow the argument that (at least at the time being) agriculture is needed for an effective landscape management in remote regions like the Alpine Mountains.

In the following chapter, we focus on the context situation in Switzerland, shortly describing the history and actual situation of agricultural policy and which consequences resulted for the landscapes in Swiss Alpine regions. After this we describe our point of view, how the organic movement could contribute to landscape preservation. Furthermore, we will describe three examples of private initiatives which achieve landscape preservation through economic activity. Finally, we try to develop a vision of landscape preservation by means of organic farming and soft tourism and to describe the conditions necessary for an implementation.

2. Challenges for Landscape Preservation in the Alpine Mountains

The policy context of Switzerland and consequences for the landscape in mountainous areas

The history of Swiss agricultural policy can roughly be divided in the phase before and after 1992. Before that time, Swiss agricultural policy was designed to market support (Sanders 2007). As a reaction to the international liberalisation development and the recognition that the original path led to an incompatibility of economy and ecology, the new Swiss Direct Payment Scheme was introduced. This scheme introduced cross-compliance measures with minimum ecological standards, qualifying

farmers for direct payments. In 1996 the next step was taken, as the Swiss people accepted the multifunctionality concept for agriculture in a national vote, levelling the way for further governmental support of farmers and for further ecological development. The role of the organic farming movement within this development is described as follows: "According to Curry and Stucki (1997) and other this fundamental change was also pushed by the development and growing incidence of environmental-friendly alternative farming systems, the public support for environmental-friendly agriculture by the Swiss population and the availability of sufficient public funds to arrange the transformation process in a socially acceptable way" (Schader 2009).

Despite these environmental friendly developments and new support schemes for farmers, liberalisation led to increased economic pressure. As a consequence, remote areas like many regions in the Alpine Mountains, which are not able to produce as efficient as farms in flat areas, came under enormous pressure to improve economic efficiency and income. In these circumstances a popular way was to intensify production on surface where this is possible on one hand and on the other to abandon cultivation on surfaces where the input/output relation is too high (slopes, outskirts, ...). The abandoned areas become ecologically unstable until the original natural wood has taken over. During this transition time (which can take up to 50 years), the danger of natural hazards through snow or mud avalanches is higher, especially on slopes with stronger inclination (Bätzing 2003). But this is just one of the main problems. The other one is the loss of biodiversity in terms of species, plant communities and landscapes. The landscapes in the Alpine Mountains which have been cultivated for

hundreds of years have generated a reservoir of wild and farm plants which is one of the highest in Europe (see chapter 1). Many of them are endemic, which means, they can be found only in the Alpine Mountains and if they lose their habitat there, they will become extinct.

On the other hand, intensification has similar consequences, as intensive plant communities are more homogenous and less stable in terms of ecological hazards. Therefore, the aim should be to find another way around the path of intensification/abandonment in order to preserve landscape and biodiversity.

Organic farming as the silver bullet?

Which farming concept or system respectively could serve as a role model for such ecological sensitive areas? What makes the difference to conventional agriculture in respect to landscape preservation? First of all, it needs to full-fill at least three criteria:

- economics: economically viable agriculture as the main provider of cultural landscapes
- ecology: hand in hand with an economical focus, an ecological philosophy has to be developed in order to protect ecological sensitive areas
- innovation: the remoteness of regions like the Alpine Mountains can be seen as a opportunity rather than a handicap

In the basics, each farming system from conventional to organic and its intermediate branches could serve as such a role model. However, on top of these basics, organic farming actually can make a difference to conventional agriculture: following the multifunctionality concept, which in Europe is an accepted part of most countries' agricultural policies. The

vision set out for organic agriculture is its dual role of production for the market to meet a specific consumer demand for commodities with added value and land management providing public goods. Thus the jointness of this specific commodity output and the production of non-commodity goods creates a higher added value than conventional agriculture.

Moreover, there are aspects of organic farming which go beyond land management in its narrow sense. Moschitz (2008) states that organic farming cannot only be regarded as an alternative farming method but as a social movement which rests on shared values. Niggli (2000) summarised them as follows: respecting and enhancing production processes in closed cycles; stimulating and enhancing self-regulatory processes through system or habitat diversity; using strictly naturally derived compounds, renewable resources and physical methods for direct interventions and control (with only few and listed exceptions) and considering the wider social, ethical and ecological impacts of farming. Thus, the shared organic farming values represent a basis for decision-making in farmers' and operator's every-days life and are therefore the basis for sustainable management.

In the following section, we will describe the joint production of non-commodity and high quality goods by organic farming in more detail.

Organic Farming providing non-commodity goods

Also conventional agriculture provides non-commodity goods, and in some areas like water use, food quality and animal health, scientific literature identifies so far no differences between the farming systems. However, scientific literature shows also very clearly that in organic farming performs better than conventional farming systems in the provision

of non-commodity goods (see figure 1) (Stolze et al. 2000, Niggli et al. 2009):

Species and ecosystem diversity: Niggli et al. (2009) list numerous articles which analysed species and ecosystem diversity on organic and conventional farms. The main results are:

- Organic farming has a significant positive effect on flora and fauna on field and farm level. On average 50% more individuals and 30% more species are found on organically cultivated land.
- Organically cultivated land hosts more beneficial organisms such as ground beetles, epigeal spiders, earthworms, as well as birds and weeds on fields.
- Furthermore, several authors prove that organic farms in England and Switzerland have a larger amount of natural habitats or ecological compensation area. In Switzerland, all farms need to have 7% of ecological compensation area in order to trigger direct payments., which might be, according to the authors, a sign for a higher biodiversity performance.

Soil quality (and therefore food security): Mäder et al (2002) state that organic soils have a better structure and thus prevent erosion. Other studies point to further benefits for soil quality of organically cultivated land (for an overview see Niggli et al 2009). As a consequence one could also say that a better soil quality contributes to a better food security.

Animal welfare: the standards for animal husbandry are usually higher for organic certified farms (some examples: Germany: Naturaland 2009, Bioland 2009; Switzerland: Bio Suisse 2006 Europe: EU 2008). The ongoing EU-project EconWelfare (KBBE-1-213095) is currently analysing animal welfare standards in several countries in Europe and overseas. Results are expected to be published in 2010.

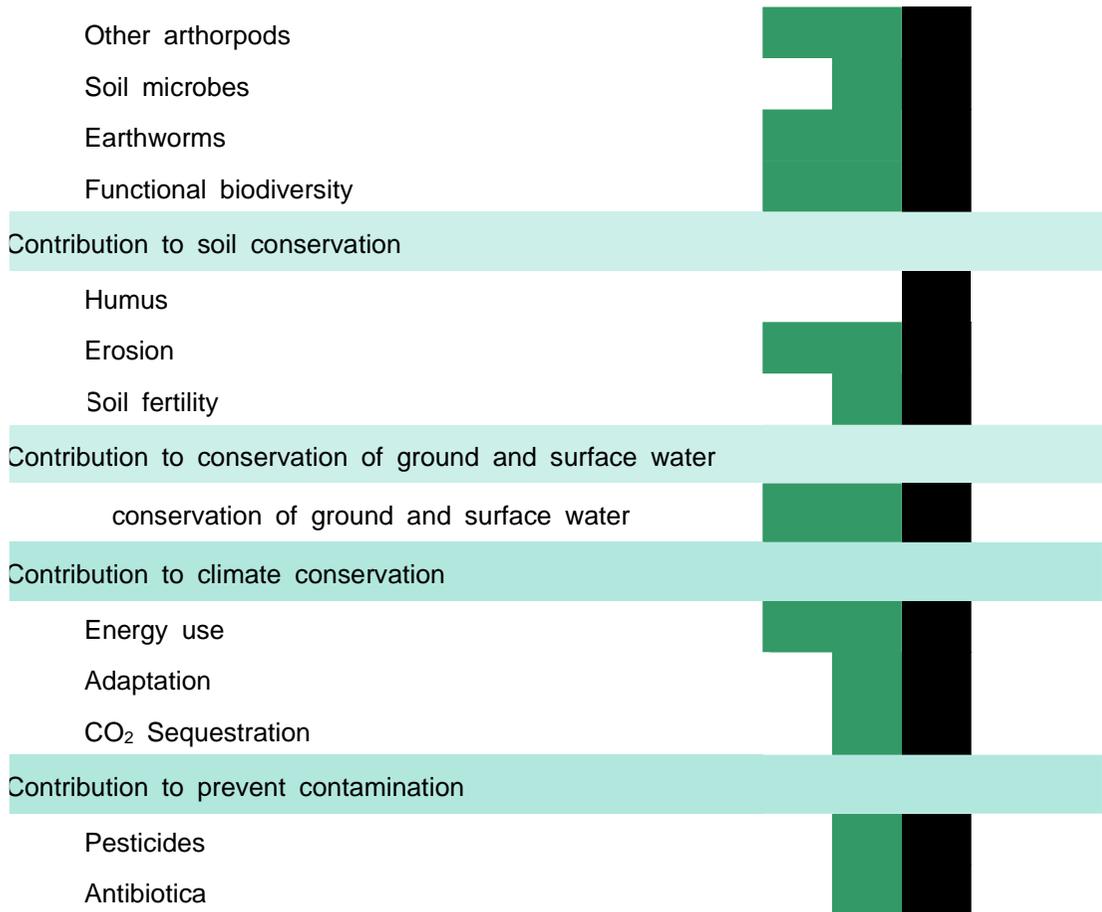
Prevention of natural hazards and contribution to climate protection: a

higher biodiversity and a better soil quality are elements which are helpful against natural hazards like mud and snow avalanches, especially in sensitive regions like the Alpine Mountains (Bätzing 2003). Less energy use, better CO2 sequestration and a better adaptation to drought and floods are mentioned as further benefits of organically cultivated land (Niggli et al. 2009).

Landscape: a study in Switzerland (Steiner 2006) showed that in contrast to conventional farms, organic farms have significantly more hedges. Thus, organic farms have more landscape forming elements.

Figure 1: public goods in comparison between conventional and organic agriculture





Source: Niggli et al. 2009

Production of high quality goods: Higher added value of Organic Farming

Price premium – consumer are willing to pay higher prices for organic food

The main contribution to a higher added value in economic terms through organic farming can be seen in the price premium paid for organic products. Organic food fulfils various consumer expectations of food quality, such as residue-free and environmentally friendly production as well as ethical criteria, leading to increasing consumer awareness of and

demand for organic food and as a result to consumer willingness to pay a price premium organic products. However, what is important to consumers is the credibility of organic production. Governmental organic farming regulations in the EU and Switzerland provide a legal framework for organic production, labelling and inspection ensuring fair competition and contributing to consumer trust. In this respect, the standard set by organic agriculture is unique.

Regional specialties

Regional specialties like varieties of cheeses or processed meat products are also available in conventional form. Concerning ingredients and processing usually there is no big difference between organic and conventional standards. But there is still the possibility of combination of these products with the values of organic farming (see Padel et al 2009) and thus, rise above the conventional products.

Agritourism

As described above, agriculture is important for landscape preservation and in the consequence often also for tourism. On the reverse, tourism can be used as a monetary resource to sustain agriculture –be it in form of provision of side jobs for farmers or by "paying" farmers for the provision of the necessary landscape.

Agritourism (as in the definition of Egger et al. 2008) combines both elements. Some of the main offers are

- Holiday farms (farms with vacation homes)
- Sleep on straw (in old barns, beds of straw are prepared. Mostly in form of dormitories)
- Bed and breakfast
- Brunch on Sundays with buffets of regional specialties, often produced on

the farm

- Diverse forms of refreshment bars / restaurants etc.

Also here, there is no general difference between organic or conventional tourism, except for an orientation on organic farming values.

3. Organic Farming, Landscape Preservation and Agritourism : three examples from Switzerland and Germany

In this section we want to describe two examples of initiatives which consider the connection between agriculture and tourism for landscape preservation and a third which describes the contribution of (organic) agriculture for landscape preservation without the emphasis of tourism.

Bad Hindelang (Germany): low-input farming provides landscape for tourism

The municipality of Bad Hindelang is situated in the region of Allgäu in the south eastern part of Germany. As an important touristic region, the income of about 80% of the inhabitants depends on tourism. One of the main reasons for tourists to come is the beautiful landscape. Also in this region, the landscape is essentially formed by agriculture and mankind.

As described in the former chapter, intensification of agriculture and economic pressure displaces the mountain agriculture, where machine use is limited also in the region of Allgäu. The decreasing number of farms caused the danger of fallow land and less attractive landscapes for tourism. In the consequence the association of "Natur & Kultur" was founded. The farmers as members of the association committed themselves to a low-input farming concept which should preserve a touristy attractive

landscape (~25% are organic farms). As compensation, the farmers receive payments from the municipality. In the past years, the concept was extended with direct marketing and special events such as farmers markets, as well as milk processing on farms.

The association writes in their information: "Our project is special because it is a closed system. Agriculture is not operated in a sense which harms nature. (...) The actual low-input agriculture makes sure that landscape and nature are preserved and the main income source of our people - tourism - is stabilised" (Original in German: Bad Hindelang 2009).

Jura (CH): Agritourism supports organic farming in the region

Agritourism in general is not yet strong in Switzerland in contrast to the neighbouring Austria. But experts agree that agritourism has still a vast potential, especially in connection with organic agriculture (Egger 2008).

The Jura Mountains (another mountain range in Switzerland) are situated north west of the Alpine Mountains. As a limestone mountain system, the landscape is very different to the Alpine Mountains (which is mainly of granite), but the principles described in the former chapters apply also here. We chose to include this example because it seems to be a new and innovative organic initiative. It consists of an organic farm network which connects the farms with an excursion path. The stages between the farms can be travelled by foot, by donkey, horse or horse-drawn carriage, by bicycle, scooter or public transport. Thus, the trips are framed as "soft" tourism in symbiosis with the crossed landscapes. The amount of work for participating farmers shall be limited by professional escorts for guests

who know the farms and can take over some of the tasks. Furthermore, the hosts are free to offer only provisions or also guest rooms or vacation homes, according to their own liking.

According to the organisers "the mission of the concept is to contribute to the dynamics of organic farming for the whole region by means of an organic farm network and the connection of these farms with an excursion path. In order to develop a strong connection to consumers/visitors, they are integrated into the culture, environment, values and authenticity of the whole region. The aim is to sensitise consumers/visitors for organic farming and its values with the perspective of increase income, to develop sales of regional products and further benefits in the collectivity of organic partners" (Bio Jura 2009).

The initiative has started only in 2009, so experiences are not yet available.

Rheinwald (CH): organically produced cheese supports landscape preservation

For several years already, all milk producers in the small valley of Rheinwald are organic farms. In the valley there are several dairies which produce regional organic cheese and contribute in this way to a sustainable agriculture and landscape. One of the highlights is the small dairy of Andeer, which exports its cheese even to America (Bienerth 2009).

Before 2001, the dairy had been out of production for several years, until the actual management couple took over. With their strict organic philosophy and an innovative spirit, they achieved to develop the dairy to

a success - for themselves and for the farmers in the surrounding municipality. With a total of only 400'000 kg milk, they produce about 20 different sorts of cheese and received numerous awards. With their engagement, 4 new employments were created and the survival of 5 farming families was secured (Bienerth 2009).

The valley of Rheinwald is not so touristy exploited despite its location along the road to one of the most important passes of the Alps. Nevertheless, there are hotels in the valley who include the dairy and their managers in the promotion, and the dairy is a popular subject for research projects about innovation, organic farming or marketing.

Even if the numbers do not seem huge, the contribution they make is significant as an outstanding example for a organic initiative which makes a difference for the region -also in terms of landscape.

4. Vision for successful landscape preservation through organic farming in remote rural areas

In the former chapters, we explained the context of the Alpine Mountains and challenges for landscape preservation. We also described the contribution of organic farming and some innovative initiatives in respect to landscape preservation.

In this last chapter, we try to bring the different aspect to a conclusion by sketching a concept for landscape preservation and the necessary conditions.

A public-private partnership for landscape preservation

Potential for tourism (or other regionally based economic activities like production of food specialties), engagement of organic farming and governmental support are the central points discussed so far. To bring together all these actor groups and engage them into an equal partnership seems for us to hold a big potential for (cultural) landscape preservation in ecologically sensitive and/or remote areas: A public-private partnership (PPP) characterises forms of cooperation between public bodies and private economy for the purpose of a better fulfilment of public tasks. As we explained in this article, the public good "landscape" is provided by agriculture. Due to actual economic developments, however, agriculture cannot maintain landscape management as satisfactory as it might be wished by tourism. To pay farmers for landscape management with public money on one hand and cooperation between tourism and agriculture on the other might be a good way for efficient and effective landscape preservation.

A further point, not yet mentioned is the potential of such initiatives to generate or build on regional identity (Schermer 2005). An involvement with such initiatives also means discussions about regional culture, organic farming values and regional economic and ecologic potential. The discussion of different actor groups about these subjects might lead to a new awareness and eventually to a (new) identity within the region. Furthermore, Schermer (2005) states that such processes might be used as a starting point for active regional development.

However, certain requirements have to be mentioned. To describe them, we follow more or less Schermer's model of the "Bioregion" (2005), which

applies in our view also for the here described PPP.

Natural factors: a generally positive image of the region is helpful but not compulsory. Furthermore, conditions of production lead to a specific kind of specialisation (regions with mainly crop land, or regions with focus on livestock husbandry). Some regions might therefore be more adaptable (remote areas or mainly low-input farming regions) to the concept than others (more intensive, or crop farming regions).

Socio-cultural factors: Generally, openness towards organic farming is crucial. On one hand, farmers have to be willing to change production methods (to secure supply), on the other, also public bodies and consumers need to be willing to pay the higher prices of organic farming products and services (side of demand). Furthermore, the two farming systems (organic and conventional) as well as strategies of different institutions within the organic movement have to be somehow compatible.

Infrastructural factors: Infrastructure which is needed for special regional products or services has to exist or to be developed.

Knowledge: in order to implement such complex initiatives like a public-private partnership, it is essential that the different actor groups possess the adequate knowledge. Knowledge management or education/extension on regional level is currently a much discussed issue in Europe. The tendency changes from a linear thinking model of knowledge transfer (research => extension => practice) to a systemic, network like thinking, where different actors are horizontally connected for experience exchange and co-creation of knowledge (see for example Leeuwis 2004, Schneider 2008, Rudmann 2008, In-Sight project 2008).

5. Literature

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