

CASE STUDY

ORGANIC FARMING IN MOUNTAIN REGION MURAU

(AUSTRIA)

D4.1 | Final Version | 07/2016

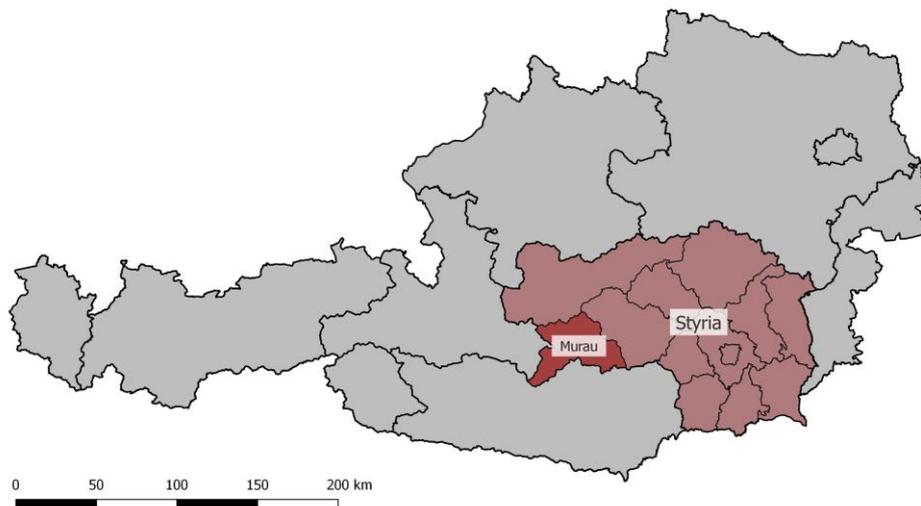
Gerhard Hovorka, Thilo Nigmann, Thomas Dax



1 Introduction

Austria is a predominantly mountainous country, where in general high nature value farming, clean environment and rich cultural and natural heritage prevail. The mountain area comprises 70 % of the Austrian territory and 50 % of the Utilized Agricultural Area (UAA). Alpine pastures are very important for cattle grazing in mountain areas during summer periods. Mountain farming has a key role in safeguarding sensitive eco-systems through the preservation of multifunctional landscapes and the general living environment and it is also fundamental to the tourism sector in Austria (Hovorka, 2011, 2016). Austrian mountain areas represent 70 % of all dairy cattle. Organic farming is the most environmentally friendly form of agriculture and is of high priority in Austria (Groier, 2013; Groier & Gleirscher, 2005; Schader et al., 2014), so that the high rates of 17 % of all farms and 20 % of UAA of organic land management positions Austria at the top of European countries in organic production (BMLFUW, 2015a; Hovorka & Dax, 2010). In Austria, 72 % of all organic farms are mountain farms (Hovorka, 2016). Given these numbers, this case study focuses on organic farming in a mountain region combined with a specific type of milk production, i.e. hay-milk production, which is a characteristic and long-established management type in the district of Murau.

Figure 1: District Murau in the Federal State Styria, Austria



The district Murau (part of the NUTS-III-region AT 226) is defined as mountain region and covers an area of 1,384 km². It is home to 28,388 inhabitants (2016) who live in the 14 municipalities of the region. It is hence sparsely populated and severely affected by rural depopulation. Only 20 percent of the area is considered as “permanent settlement area” (BMFLUW, 2015b). In the district Murau, 1,322 farms were registered within the IACS system in 2013. Organic mountain farming is a widely spread management system in Murau, 32 % of all farms are organic farms, respectively 35 % of all mountain farms are organically managed. Mountain farming in the region is dominated by milk production and livestock management as well as

forest activities which together constitute the three main sources of agricultural income. Within the region, the case study focuses on mountain farms producing organic hay-milk for the brand “*Zurück zum Ursprung*” (Z.z.U. – back to the origin). Organic hay-milk is considered the highest premium milk product in Austria at present. Hay-milk production is based on a relatively extensive type of farming (ARGE Heumilch Österreich, 2016a). About 33 % of all organic mountain farms in the district are represented by the project “Z.z.U.” (Nigmann et al., 2016). The project “Z.z.U.” started in 2006 as a conventional venture and transformed into a production label, exclusively based on organic land management in 2008. Milk of the mountain farms in the project “Z.z.U.” is processed by the regional Upper Styrian dairy (Obersteirische Molkerei) and the products are distributed throughout Austria by the retail chain Hofer which is the proprietor of the brand “Z.z.U.”.

The hay-milk project “Z.z.U.” comprises stringent regulations for organic mountain farming with organic hay-milk production that go beyond the requirements of organic farming. In addition, it requires silage-free fodder as well as certain specifics concerning pasture management that increases the quality of milk and positively affects the level of biodiversity (see 3.4 for more detail) (Schenkenfelder, 2015). It contributes to the maintenance and enhancement of the typical alpine landscape character and cultural heritage. Therefore, the hay-milk project “Z.z.U.” creates synergies between the improvement of the income situation of mountain farmers (e.g. higher organic hay-milk premium) and the maintenance of typical landscapes and the level of biodiversity (e.g. no abandonment of farms and grassland).

The case study focuses on ESBO No. 11: Species and habitats: Achieving (or maintaining) the presence of diverse and sufficiently plentiful species and habitats (ecological diversity) and ESBO No. 14: Landscape character and cultural heritage: maintaining or restoring a high level of landscape character and cultural heritage.

The hay-milk project “Z.z.U.” might become even a role model for other mountain regions and mountain farms. A greater involvement of organic mountain farmers and their representatives in the project design might further improve the project standards, broaden the participation and foster environmental benefits.

Hay-milk production is a traditional kind of milk production of high quality in Austria, but its importance and awareness for it is increasing strongly in the last years. The umbrella organization *ARGE Heumilch* exists since 2004 and now unites around 8,000 hay-milk farmers and 60 dairies, cheesemakers and alpine dairies. Sales of hay-milk products in Austria are rising (2015: plus 3.5%), while the overall market for milk suffered a fall in sales of 2.3% in 2015 (ARGE Heumilch Österreich, 2016b). Members of *ARGE Heumilch* deliver 420 Mio. kg hay-milk per year, which is 15% of the total milk delivered in Austria. Since 4th of March 2016 the Austrian hay-milk is registered in the EU scheme of Traditional Speciality Guaranteed (TSG), which highlights traditional character, either in the composition or means of production.¹ The hay-

¹ The three EU schemes known as PDO (protected designation of origin), PGI (protected geographical indication) and TSG (traditional speciality guaranteed) are the main instruments to promote and protect the names of quality agricultural products and foodstuffs http://ec.europa.eu/agriculture/quality/schemes/index_en.htm



milk project “Z.z.U” goes beyond the simple hay-milk production because in this project hay-milk production is linked to organic farming and mountain farming.

2 Definition of the Social-Ecological System (SES) studied

2.1 The SES Framework

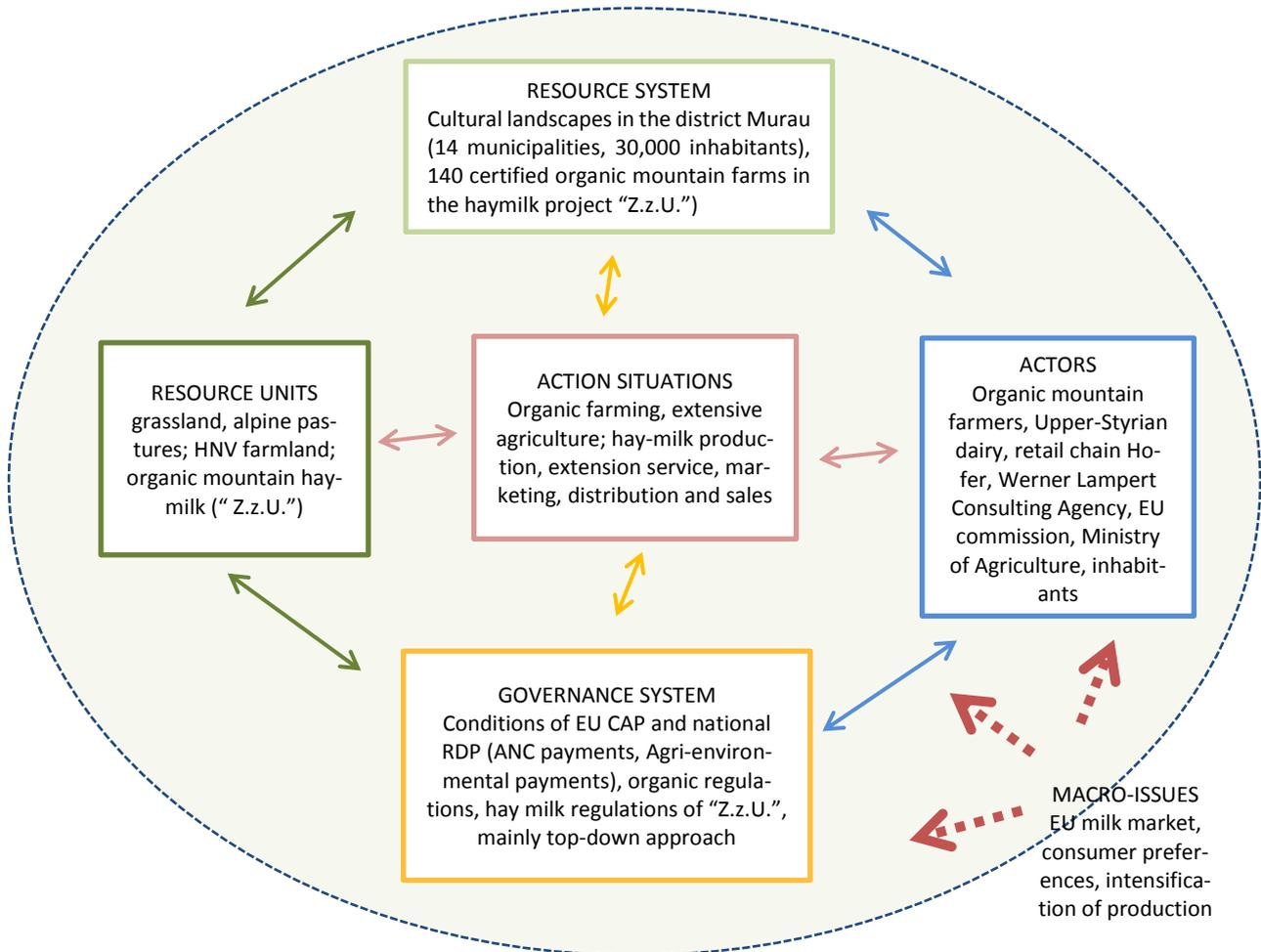


Figure 2: SES framework of “Z.z.U.” in the district Murau

(Adapted from Cox & Ostrom, 2010; McGinnis & Ostrom, 2014)

The SES framework aims at capturing the main aspects involved in the initiative and realization of organic hay-milk production of the “Z.z.U.” project. The description of the SES framework has been revised due to the comments and several expert interviews with project managers and other related experts (I 1-6, I 1-7, I 1-8). In particular, the specificity of the project and high involvement of a private consulting company in developing and shaping the initiative was highlighted and relationships between different partners were clarified.

2.2 Key drivers and motivations

There is a great public interest and a pronounced political consensus to support agriculture in mountain regions (e.g. for maintaining the specific land use) in Austria. Furthermore, there is an increasing awareness for the importance of environmentally friendly forms of agriculture. The Austrian Rural Development Programme (RDP), which is developed and administered by the Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW), based on the European Common Agricultural Policy (CAP), includes a wide range of measures aimed at supporting these issues. In the RDP, mountain farming is supported by the compensatory allowances scheme. As part of the Agri-environmental program within the RDP, organic farming payments and the renunciation of silage processing in milk production are very important for organic hay-milk production (EAFRD, 2014). In the case study region Murau, many mountain farms take part in these measures. The spatial concentration of hay-milk producing farms was a precondition for the development and implementation of the organic hay-milk project "Z.z.U."

The project was created by the private company Werner Lampert Consulting Agency in cooperation with the Upper Styrian dairy. The project is still managed by Werner Lampert Consulting Agency and the organic hay-milk products are distributed and marketed by the retail chain Hofer which also holds the property rights of the label "Z.z.U.". The project creates multiple benefits. On one side, it is economically beneficial for the mountain farmers, the dairy, the region and the coordinators of the organic hay-milk project "Z.z.U.". On the other side, ecologically sustainable management practices positively affect levels of biodiversity as well as the maintenance of the cultural landscape which otherwise would be threatened (e.g. abandonment of agricultural land²).

Public key drivers are:

- Policy support with direct focus on the provision of ESBOs (e.g. Agri-environmental measures of the RDP)
- Policy support with indirect focus on the provision of ESBOs (e.g. compensatory allowances for Areas of Natural Constraints)

Private key drivers are:

- Demand for "sustainable" food (e.g. increase in consumer demand for organic hay-milk and organic hay-milk cheese)
- Certification scheme to differentiate milk products
- Price premium payments
- Capacity of retail supply chains

² In the Alps the abandonment of landscape is a widespread phenomenon. Therefore, the diversity in grasslands and cultural landscapes is declining (Bogner, 2008).



2.3 Description of other important variables chosen

As the overview in the SES diagram suggests, organic farming and hay-milk production positively impact the provision of key ESBOs. The effects on the diversity of species and habitats (ESBO No. 11) and landscape development (ESBO No. 14) are representative not only for this region, but for many similar mountain areas across the Alpine space and beyond.

There are also other important variables that are supported by the activities in the case study. These include in particular:

- The impact on biodiversity levels in the region, depending on the land use management systems required for project ("Z.z.U.") participation;
- The close link to High-Nature-Value farming as an expression of management systems that indicate a particularly important and high valorization of the specific land use systems.

2.4 Discussion of the SES

The boundaries of the resource system are defined by the mountainous area of the district Murau and the participants of the hay-milk project "Z.z.U."

Central to the provision of ESBOs (biodiversity and cultural landscape) in the case study region are the organic dairy mountain farmers. Through extensive mountain farming practices and the production of organic hay-milk, they actively contribute to the conservation of the prevailing cultural landscapes and has a positive impact the level of biodiversity. The milk is then processed by the Upper Styrian dairy. In order to follow this model in an economically sound manner, the hay-milk project "Z.z.U." (comprising Werner Lampert Consulting Agency and the retail chain Hofer) pays a price premium on top of the milk price, thereby enabling farmers to continue this type of more cost intensive production, securing employment and ultimately contributing to a more economically, socially and ecologically stable region.

Macro issues impacting organic hay-milk production are demand and supply as well as the European milk market (e.g. negative price development in recent months/years). The alternative trend, for regional and high quality foodstuffs originating from systems that are adapted to site-specific conditions, is reflected by the products of "Z.z.U.". Thereby, "Z.z.U." acts as an antipole to the mainstream trend for agricultural intensification and farm size enlargement by concurrent farm abandonment. Therefore, the value added increases the viability of extensive modes of production and actively contributes to the maintenance of cultural landscapes and high levels of biodiversity (I 1-6, I 1-7, I 1-8).

The regulatory system of organic mountain farming and hay-milk production is primarily organized top-down. The European Union and the Republic of Austria both pass policies relating to organic agriculture and mountain farming. Based on this, Werner Lampert Consulting Agency developed the regulatory framework (e.g. production standards, participation) of the hay-milk project "Z.z.U." in close cooperation with experts and the Upper Styrian dairy (I 1-6). The participating farmers are incorporated in the further development of the project "Z.z.U." via their working committee engagement.

The central resource system is the cultural landscape (e.g. grassland, meadows, pastures, forests). In large parts, these areas are defined as “High Nature Value Farmland” (HNV farmland). Therefore, referring to agricultural land that exerts a particularly high nature value (Bartel et al., 2010). The conservation of cultural landscapes and the diversity of species depend on the applied agricultural production system. The prevailing cultural landscape is the natural foundation for the production of organic hay-milk and therefore the basis for the project “Z.z.U.” and the provision of ESBOs.

The action situation is impacted by multi-level actors such as the European Union (e.g. CAP), the Republic of Austria (e.g. implementation of the CAP including RDP), the Federal State of Styria (e.g. agricultural policies), the private Werner Lampert Consulting Agency, the retail chain Hofer as well as by organic hay-milk producers. Organic agriculture, hay-milk production and the continuation of extensive agricultural practices positively affect the provision of ESBOs in the district Murau. This in turn depends on the above-mentioned macro issues (e.g. milk price, extension services of Werner Lampert Consulting Agency) but also alternative modes of production. High levels of biodiversity and the conservation of cultural landscapes again positively affect tourism, quality of life for the local population as well as the external perception of the region (I 1-4; I 1-8).

2.5 Common aims, conflicting interests and goals

Common objectives are the maintenance of mountain farming, sustainable management of cultural landscapes, conservation of biodiversity and the production and processing of organic hay-milk in an economically sound way.

Conflicts of interest may pertain to the milk price. While mountain farms have a natural interest in high milk prices, it is the opposite for the dairy side. Furthermore, mountain farms appreciate a high and guaranteed hay-milk premium (currently guaranteed until 2020), planning reliability as well as flexibility. Werner Lampert Consulting Agency establishes the requirements which go beyond those of organic agriculture (I 1-1; I 1-6). Thereby, creating transparent, verifiable and credible ground for product differentiation as well as generating positive effects for the conservation of cultural landscapes and high levels of biodiversity. (I-1-6). Considerations regarding intensification of production need to be in accordance with the regulatory framework of the hay-milk project “Z.z.U.” and are best achieved by on-farm improvements of the quality of forage (I 1-5). Further deliberations pertaining to basic aspects of project participation or to leave the hay-milk project “Z.z.U.” and to produce organic silage milk instead of organic hay milk. (I 1-5, I-1-6, I-1-8).

2.6 Other issues arising from SES analysis and context/case study specific aspects/issues

The development of the European milk market undoubtedly impacts the directions taken by the project “Z.z.U.” and its attractiveness both for producers and consumers. Given the lack of alternative production means, a large part of organic dairy mountain farms partake in the project “Z.z.U.” (I 1-7). Consideration regarding further structural development of the agricultural sector, regional geographic delimitations or expansion of the “Z.z.U.” project, brand value for the region as well as alternative land use systems all indirectly impact the future of “Z.z.U.” and the provision of ESBOs.



3 Status of the SES and potentials

3.1 Description of the SES

Mountain farms are fundamental to the provision of ESBOs and paramount to the analyzed SES in the district Murau. The case study region is defined as mountain area in which 1,322 farms were registered within the IACS system³ in 2013. The composition of farms in the district with regard to the analyzed organic hay-milk production of mountain farms in this case study is as follows:

- 1,256 mountain farms receive payments from the Areas of Natural Constraints (ANC) Scheme of the RDP (95% of all IACS farms), of which
 - o 430 are certified organic mountain farms (34%), of which
 - o 193 certified organic mountain farms use silage-free fodder (45%)⁴, of which
 - o approximately 140 participate in the hay-milk project “Z.z.U” (73%). These farms represent 33% of all organic mountain farms in the district Murau.

This case study focuses explicitly on those certified organic mountain farms that apply a management system which is defined by the strict restriction and exclusive use of silage-free fodder and participation in the hay-milk project “Z.z.U”. The research interest is on investigating and analyzing the effects they exert on the provision of key ESBOs and on the enabling and disabling factors for their provision.⁵

The resource units of the SES (e.g. grassland, pastures, meadows, etc.) are embedded in the resource system of the area (e.g. cultural landscapes reflected by mountain agriculture in the district Murau). The quality is significantly shaped by the cooperation of actors. Extensive agricultural practices of organic mountain farming in combination with stringent “Z.z.U.” project requirements benefits the conservation of cultural landscapes and contributes to high levels of biodiversity. Hay-milk price premium payments support agricultural income and thereby render mountain farming economically more viable. It also economically benefits the Upper Styrian dairy as well as the retail chain Hofer and the local inhabitants (and society at large) profit from the provision of ESBOs. On the one hand, the Common Agricultural Policy (CAP) positively impacts resource units and mountain farming through the Area of Natural Constraints Scheme (ANC) as well as through support for organic agricultural practices (both Pillar 2), on the other hand, the first pillar of the CAP clearly contains signals towards intensification of production, globalization and growth.

Economic pressure on the European milk market as well as the trend towards intensification of production adversely affects resource units as well as extensive mountain farming and thereby the resource system as a whole. Positive implications on the other hand are triggered

³ Integrated Administration and Control System (IACS). For further information please consult: http://ec.europa.eu/agriculture/direct-support/iacs/index_en.htm

⁴ Farms which participated in the Agri-environmental measure “silage renunciation”.

⁵ In addition, around 240 organic mountain farms in the district Murau take part in the silage milk project of “Z.z.U”.

by an increasing consumer awareness and demand for organic hay-milk as well as by the general trend towards healthier lifestyles and conscious consumption (I 1-7 und I 1-8). While the current policies under the first pillar of CAP puts pressure on the provision of ESBOs, the second pillar supports extensive agricultural practices and therewith positive externalities such as the provision of selected key ESBOs. On a regional level, the hay-milk project "Z.z.U." defines and holds the standards and passes them on in a top-down manner. The "Z.z.U." requirements enable alternative positioning and differentiation in relation to other projects as well as to silage-milk. Thereby creating a competitive advantage and positively impacting resource units and thus, conservation of cultural landscapes and levels of biodiversity. Without these price premia, this type of extensive mountain agriculture would not be economically viable.

An important aspect of the analyzed SES, is the extension services for participating mountain farms by experts of Werner Lampert Consulting Agency and the Upper Styrian dairy. In the future, a more active engagement of participating farmers in the further development of standards and other "Z.z.U." relevant decisions is envisaged.

The hay-milk production is a positive contribution to the avoidance of overproduction and may act as a role model for agricultural policy for site-specific development, production and distribution of regional products (I 1-7; I 1-8).

Current developments of the European milk market (e.g. overproduction, declining prices) will also impact hay-milk production in the long run. Firstly, because extensive hay-milk production is only a part of agricultural practices and the prevailing cultural landscape in mountain regions. Secondly, a declining price of conventional milk will also increase pressure on the organic sector. Experts argued that it would be advantageous to decouple the hay-milk price from the general milk price and to market it as specialty product (I 1-8).

3.2 Relationships between farming and forestry, and the quantity and quality of ESBOs

The district has a total forest area of 79,000 ha with a forest cover of 57.1% (BMFLUW, 2015b). As forest and timber are traditionally of high importance, the entire district has been defined by the Local Action Group (LAG) of the LEADER Programme (including the 14 municipalities of the district) as "Holzwelt Murau" ("wood world Murau"). Around 81% of the district area is utilized agricultural and forestry area of which 30% is used for farming and 70% by the forestry sector (BMFLUW, 2015b). Most of the forestry owners (about 66%) are small forestry owners (with less than 200 ha forest area) (BMFLUW, 2015b). For "Z.z.U." producing mountain farmers, both agriculture and forestry are important for operation management. Yet, there is no cooperation between the organic hay-milk project "Z.z.U." and the LAG "Holzwelt Murau" (I 1-4, I 1-8).

Forestry is an important source of farm income next to the production of milk and meat and therefore important for the continuation of farming, conservation of cultural landscapes and levels of biodiversity. This combination of income sources is especially important for farmers with extensive agricultural management. Forests therefore dispose of both, important socio-economic functions as well as positive environmental externalities. On the other hand, abandonment of farming would lead to overgrown areas which eventually would reduce the level of biodiversity which ultimately has further negative impacts on other business sectors, such as tourism.



The case study shows an evidence based link between farming and forestry and the provision of key ESBOs (ESBO No. 11 - biodiversity and ESBO No. 14 - landscape character and cultural heritage) in terms of environmental, social and socio-economic aspects. Thus, extensive hay-milk production in our case study area exemplifies how economic, social and environmental objectives can be met simultaneously.

3.3 Key motivational, institutional and socio-economic factors

Key motivational factors for the provision of ESBOs in the realm of this SES are, besides economic incentives, the appreciation and esteem of extensive and organic mountain land use management systems by the local population, consumers and producers themselves. (I 1-2, I-3; I 1-4; I-5, I 1-7, I 1-8). Institutional factors include a capable agriculture administration as well as adequate agricultural policies (e.g. on all relevant levels), reduction of red tape, extension of the hay-milk project (I 1-6). Necessary socio-economic factors for further provision of ESBOs depend on the continued viability of mountain farming as well as the organic hay-milk project. An adequate agricultural income is a prerequisite for the continuation of this type of extensive mountain farming. In this case, it is compiled by the basic milk price and the hay-milk premium payments as well as significant support measures from the first and second CAP pillar (I 1-7 und I 1-8).

3.4 Levels of provision, trends and determinants

The special quality properties of "Z.z.U." organic hay-milk and its positive impact on the provision of key ESBOs has been revealed, enhanced and promoted by the Werner Lampert Consulting Agency. Effects have been verified by analysis of a third-party institution, the Research Institute of Organic Agriculture, Austria (FiBL). While studies show that biodiversity levels of organic dairy production are 4-79% higher in comparison to conventional production (Schader et al., 2014), empirical data for "Z.z.U." biodiversity assessment has not been made accessible to us by the time of this research.

"Z.z.U." brand values include: local production (exclusively produced by organic mountain farms and processed by a local dairy unit), animal welfare, GMO-free production, transparency and monitoring (keeping close track of origin of products and value-chain), food quality, fair partnership (reliability and organic hay-milk premium guarantee). Further to this self-conception, the project "Z.z.U." claims to create a viable alternative for small-structured Alpine agriculture in Austria which conserves and supports cultural landscapes (Schenkenfelder, 2015; I 1-1; I 1-5, I 1-6)

The essential requirements of the hay-milk project "Z.z.U." include (Schenkenfelder, 2015; Werner Lampert Consulting Agency, 2016) the following aspects which are monitored and controlled by third party agents.

- Organic standards (based on EU Council Regulation (EC) No 834/2007)
- species-appropriate animal husbandry and fodder (min. 120 days/annum pasture conditions, min. 180 days/annum grazing management, silage-free and soy-free fodder, min. 75% roughage/ratio)
- Fodder exclusively of Austrian origin



- 75% of fodder from in-farm production
- Regular health examinations for farm animals (obligatory membership in an animal welfare service organisation)
- Certified "Tierschutz geprüft"(certified animal welfare) (in cooperation with the Society for species-appropriate animal husbandry)
- Participation in a biodiversity program (in cooperation with a private environmental consulting agency, "eb&p Umweltbüro GmbH")
- Regulatory framework for hay-milk production
- Transparency and control (monitoring of the entire value chain)

The assessment of the CO₂ footprint for hay-milk production is conducted by FiBL⁶. In comparison to conventionally produced milk products, "Z.z.U." organic hay-milk produces 14.3% less CO₂ emissions (970 g CO₂ eq/kg by agriculture), 14,3% lower water usage, 26% higher species diversity and 80% increased added value for the region established through product features, farm-side as well as regional resilience and regional value-chains (Werner Lampert Consulting Agency, 2016; I 1-5; I 1-6).

"Z.z.U." production standards increase the levels of species diversity due to the renunciation of herbicides, chemical-synthetic pesticides and synthetic fertilizers. In addition, crop rotation, reduced organic fertilization, extensive soil management as well as the use of animal friendly mowing and harvesting techniques are prerequisites for participation in the scheme. Thereby, participating mountain farmers significantly contribute to the conservation of biodiversity through farming in typical alpine areas which otherwise would overgrow and ultimately disappear. Consequently, extensive mountain farming creates and preserves (endangered) habitats for plants and creatures (Werner Lampert Consulting Agency, 2016).

Werner Lampert Consulting Agency did not provide any empirical studies regarding these effects so far but instead redirected us to the information provided on their homepage. The published material seems credible and has been used in the realm of this case study.

The conservation of biodiversity and cultural landscapes in alpine settings is generally appreciated by society at large. This is reflected by the Austrian Agricultural Law (BMLFUW 2015a) and by various measures in Austrian agricultural policies (BMLFUW, 2013), the Rural Development Programme (EAFRD, 2014) and supported by the evaluation reports of the RDPs 2007 - 2013 and 2014 - 2020 (BMLFUW, 2010; EAFRD, 2014). The selected key ESBOs are also paramount for the regional tourism sector as well as the quality of life for the local population. A quantitative pecuniary based approach for assessing the value of key ESBOs is not available and methodically not meaningful. A valorization can be accessed via the levels of organic agriculture support per hectare as well as on payments per hectare from the Areas of Natural Constraints Scheme. In addition, the organic hay-milk premium payment of "Z.z.U." can in the

⁶ FiBL (Research Institute for Organic Agriculture, Austria). FiBL is a not for profit association which exclusively finances itself via projects and research services. The focus for FiBL Austria is biodiversity, nature conservation and sustainability assessments (FiBL, 2016).

wider sense be considered as appreciation for the provision of key ESBOs even if market related considerations play a primary role in the establishment of this scheme.

For the participating mountain farmers, the selected ESBOs are highly appreciated as they are the basis for their venture. On a socio-economic level, they profit by being part of the local population and on an economical level because they receive various forms of financial support and premium payments. The regional tourism sector also profits from the conservation of biodiversity and cultural landscapes (I 1-4, I 1-8).

Main improvements in relation to the provision of ESBOs might be achieved by further developing the "Z.z.U." product standard, through a project expansion (e.g. number of participants) as well as through activities to raise consumer awareness. Key limiting factors are the complex requirements for transition from conventional to organic farms, milk market developments (e.g. declining prices, demand for organic hay-milk), future expectations concerning mountain farming as well as individual mountain farmers' considerations (e.g. farm succession, off-farm employment).

3.5 Relevant governance arrangements and institutional frameworks

Mountain farmers involved in organic hay-milk production for "Z.z.U" (about 140 organic mountain farmers) receive CAP support payments of about 3 Mio. € per annum (Nigmann et al., 2016). These payments contribute substantially to the agricultural income of mountain farmers (BMLFUW, 2010; Hovorka, 2011). The bulk of these payments are provided by pillar 2 measures (around three quarters). The largest amount is provided by Agri-environmental Payments⁷ (about 42%) and the Less Favoured Area Compensatory Allowance⁸ scheme (about 25% of all CAP support). While the former is oriented towards maintaining and improving environmental conditions, the latter is an aid to farmers in agricultural areas facing natural hardship (Hovorka, 2011).

These public support measures are independent from project participation but constitute a basic requirement to engage therein. The dairy, respectively the retail chain offers a premium quality payment of 12 cents/kg milk (in 2014) which has recently been increased up to nearly 20 cents/kg hay-milk (I 1-6).

The hay-milk project "Z.z.U" works mainly based on a top-down approach. The project has been established by the private company Werner Lampert Consulting Agency and implemented in cooperation with the Upper Styrian dairy as well as the retail chain Hofer.

⁷ "Agri-environment measures provide payments to farmers who subscribe, on a voluntary basis, to environmental commitments related to the preservation of the environment and maintaining the countryside." For more information, please see: http://ec.europa.eu/agriculture/envir/measures/index_en.htm

⁸ "The aid to farmers in Less Favoured Areas (LFA) provides a mechanism for maintaining the countryside in areas where agricultural production or activity is more difficult because of natural handicaps. In place since 1975, it is a long standing measure of the Common Agricultural Policy." For more information, please see: http://ec.europa.eu/agriculture/rurdev/lfa/index_en.htm

4 Conclusions derived from analysis in Steps 1 and 2

4.1 Key findings on the particular SES and its potentials

Agriculture and forestry in the mountain district Murau are inseparably linked to the provision of key ESBOs. The organic hay-milk project “Z.z.U.” has a strong positive impact on the provision of them. An important prerequisite for the continuation of mountain farming and the provision of ESBOs (e.g. on a medium-term) is a sufficient agricultural income. Under the current regime this is achieved via relevant support measures from the RDP in combination with hay-milk premium payments. Without these top-ups, a marginalization of low yielding areas and an intensification of high yielding areas would occur. Consumer choices in favor of organic hay-milk products directly impact the provision of relevant ESBOs.

The conservation of cultural landscapes and high levels of biodiversity in mountain areas is relevant to the wider society and local population alike (quality of life) and an important resource for the tourism sector as well as for mountain farmers themselves. This is reflected by support measures within the framework of the RDP, the objectives of agricultural policies, increasing consumer demand for organic hay-milk and directly by the interest of farmers to participate in the initiative, proven by the substantial share of farmers in the region participating in the project “Z.z.U.”

This analysis exemplifies that “Z.z.U.” is an innovative way to successfully increase agricultural income while simultaneously “producing” positive environmental effects. Based on the success story, other retail chains established similar schemes based on the production of hay-milk. Meanwhile, there is also an umbrella association of hay-milk suppliers as well as an hay-milk specific label with high consumer recognition value (ARGE Heumilch Österreich, 2016b). Considering the current demand situation, a further expansion and development in the direction of hay-milk production is expected and appropriate expansion strategies are recommended.

The awareness and provision of ESBOs can be increased by consumer awareness building activities as well as by incentivizing agricultural management practices that enhance ESBOs provision (e.g. price premia, measures within the RDP).

4.2 Governance arrangements and institutional frameworks

The combination of public and private governance arrangements and institutional frameworks successfully contributed to the provision of ESBOs in the case study area. Paramount to the success was the establishment and implementation of the project “Z.z.U.” by private actors and the cooperation with other private parties. Especially, the dairy on the processing side, the establishment of a powerful distributional capacity (throughout Austria) and a long-term agreement with premium guarantees, provided through the initiative of a nation-wide retail chain enabled the development of the label and its marketing success. In addition, the willingness of farmers to convert to organic agriculture and to join “Z.z.U.” was decisive.

Subsequently, similar ventures developed in other mountain areas in Austria. While this project could generally be replicated in low-lands, necessary structures often do not exist anymore and the close relationship to some of the core ESBOs (landscape character) are absent



in those regions. Therefore, it is primarily an approach for a specialty product from mountainous regions.

Uniform and transparent terms and conditions (e.g. participation, standards) of the agreement were particular strength of the governance arrangement. Third party control and monitoring guarantee compliance as well contribute to the image of the project and establish consumer trust.

The last CAP reform had no direct, immediate impact on the project. However, EU wide trends (e.g. overproduction of milk) will inevitably lead to declining (overall) milk prices in the long run. Given the current price levels of organic milk (e.g. in relation to conventional milk) the interest of farmers for initiatives like "Z.z.U." will continue and it might increasingly attract prospective producers (I 1-6).

Agricultural policies, especially RDP instruments of the second CAP pillar, have a distinct impact on the provision of ESBOs. (e.g. support for organic agricultural practices, Areas of Natural Constraints Scheme, Agri-environmental measures). In addition, agricultural policies shape general market conditions.

4.3 Other enabling or limiting factors

Due to the long-term priorities of agricultural policies for supporting mountain farming and agri-environmental focus in land use management (since several decades), the case study area of Murau is still home to a significant number of hay-milk producing mountain farms. This fact certainly made a transition into the organic hay-milk project "Z.z.U." easier feasible than in other contexts. For this reason, the ESBOs provision was high prior to the project start and appreciation of the situation is an important aspect in Austria's policy discourse. However, future land management in mountain areas, including the case study, was threatened due to the prevailing mantra of "grow or perish". Prior to the creation of the organic brand "Z.z.U." (foundation 2006 and transition in 2008) there have been preparatory studies regarding the opportunities for an "organic region Murau" (Groier & Kirchgast, 2008). While this concept has not been put into practice, it was valuable for the discussion and creation of "Z.z.U."

4.4 Reflections on the case study methodology used and potential improvements

The project team discussed the SES framework with stakeholders, both face-to-face, via email and through expert interviews and telephone interviews which brought along a high amount of new useful insights. We did not organize a regional workshop because of the limited time available and secondly, because we already carried out a series of in-depth stakeholder interviews in the first phase of our regional contacts and the necessity for specific focus group discussions was difficult to convey at this stage.

For an in-depth analysis in steps 3 and 4 it will be important to consider that private agents such as Werner Lampert Consulting Company are not prepared to provide additional data. Furthermore, they economize whether PEGASUS engagement bears any value-added to their ventures.



5 Research and action mandate for Steps 3 and 4

5.1 Agreed objectives of activities to be undertaken with initiative/stakeholders

In a next step, workshops and expert interviews could specifically target a stronger involvement of mountain farmers. Due to their regular heavy work load, they are often more difficult to approach and usually refer to the working committee or the project leaders of “Z.z.U.”. Thereby, participating and non-participating mountain farmers could shed light onto their motivations. Also consumer representatives and representatives of regional politics, business and environment could be involved in more depth.

Key questions for an in-depth analysis in steps 3 and 4 are: How can the innovative character of “Z.z.U.” be sustained in the future? Is it possible to scale-up this initiative and, if so, under which conditions? Could an extension of the scheme bring along similar positive externalities (within the case study areas, and in other regions) such as those observed in the district Murau?

5.2 Innovations, impact, transferability, potential risks and research bias

The organic hay-milk project “Z.z.U.” is still the most innovative initiative of this type in Austria, even though other comparable endeavors evolved in recent years. The projects significant positive contribution to the provision of ESBOs could be transferred onto other regions providing that certain preconditions and site-specific adaptations are considered.

Risks and research bias are relevant and should be analyzed carefully in a more in-depth study of the initiative and the details of the organization and effects of the specific value-chain. These are mainly due to the fact that data and studies conducted by certified research institutes are not publicly accessible. A permission to access the data has not been granted. Therefore, expert interviews and data retrieved from the company homepage are of limited scientific verification. Generally, however, there is continued stakeholder interest in PEGASUS project cooperation and in improving the information provision on the project’s assessment.

6 References

1. ARGE Heumilch Österreich. (2016b). *Österreichische Heumilch erhält EU-Gütesiegel g.t.S.* Retrieved from <http://www.heumilch.at/oesterreichische-heumilch-erhaelt-eu-guetesiegel-g-t-s/>
2. ARGE Heumilch Österreich. (2016a). *Österreichisches Heumilchregulativ. Vorschriften für silofreie Milch.* Retrieved from http://www.heumilch.at/wp-content/uploads/2016/04/Heumilchregulativ-04_2016.pdf
3. Bartel, A., Süßenbacher, E., Sedy, K., & Frühauf, J. (2010). *“High Nature Value Farmland”. Weiterentwicklung des Indikators für Österreich.* Wien: Umweltbundesamt. Retrieved from <http://www.umweltbundesamt.at/fileadmin/site/publikationen/REP0348.pdf>



4. BMFLUW. (2015b). *Leader-Entwicklungsstrategie 2014-2020. LAG Holzwelt Murau*. Wien. Retrieved from http://www.holzweltleader.at/upload/xmllist/sammelordner/supl_8d7d639a01.pdf
5. BMLFUW. (2015a). *Grüner Bericht. Bericht über die Situation der Österreichischen Land- und Forstwirtschaft*. Wien.
6. BMLFUW. (2010). *Evaluierungsbericht 2010. Halbzeitbewertung des Österreichischen Programms für die Entwicklung des ländlichen Raums*. Wien.
7. BMLFUW. (2013). *Österreichisches Programm für die Entwicklung des Ländlichen Raums 2007 - 2013. Fassung nach der 8. Programmänderung*. Wien.
8. Bogner, D. (2008). *Nutzungsauffassung in der Berglandwirtschaft. Ursachen und Auswirkungen der Nutzungsauffassung am Beispiel der Wiesen in Zell Winkel im Gebiet des Koschuta-Gebirges*. Universität für Bodenkultur, Wien.
9. EAFRD. (2014). *Austria – Rural Development Programme (National) 2014 – 2020*. Brussels: European Agricultural Fund for Rural Development.
10. FiBL. (2016). *Arbeitsschwerpunkte FiBL Österreich*. Retrieved from <http://www.fibl.org/de/oesterreich/schwerpunkte-at.html>
11. Groier, M. (2013). *Wie weit darf Bio gehen? Analyse von Konventionalisierungsrisiken im Bereich der biologischen Landwirtschaft Österreich* (Forschungsbericht No. 69). Wien: Bundesanstalt für Bergbauernfragen.
12. Groier, M., & Gleirscher, N. (2005). *Bio-Landbau in Österreich im internationalen Kontext. Strukturentwicklung, Förderung und Markt. Band 1* (Forschungsbericht No. 54). Wien: Bundesanstalt für Bergbauernfragen.
13. Groier, M., & Kirchgast, C. (2008). *Auf dem Weg zur Bioregion: Ergebnisse, Erfahrungen & Reflexionen aus einem Aktionsforschungsprojekt*. (Forschungsbericht No. 61). Wien: Bundesanstalt für Bergbauernfragen.
14. Hovorka, G. (2011). *Die Evaluierung der Ausgleichszulage für naturbedingte Nachteile. Halb-zeitbewertung des Österreichischen Programms für die Entwicklung des Ländlichen Raums* (Facts & Features No. 46). Wien: Bundesanstalt für Bergbauernfragen.
15. Hovorka, G. (2016). *Mountain Farming in Austria* (Fact Sheet No. 12). Vienna: Federal Institute for Less-Favoured and Mountainous Areas (BAAF).
16. Hovorka, G., & Dax, T. (2010). Organic Farming: Enhancing Environmental Services from Farmland in Austria. *Mountain Forum Bulletin*, 10(1), 66–68.
17. Nigmann, T., Dax, T., Hoppichler, J., Hovorka, G., & Machold, I. (2016). *Socio-political, economic and institutional drivers*. (National report Austria for WP3 of PEGASUS project).
18. Schader, C., Drapela, T., Markut, T., Meier, M. S., Lindenthal, T., Hörtenhuber, S., & Pfiffner, S. (2014). Farm- and product-level biodiversity assessment of conventional and organic dairy production in Austria. *International Journal of Biodiversity Science*,



Ecosystem Services & Management, 10(1), 20–39.
<http://doi.org/dx.doi.org/10.1080/21513732.2013.878752>

19. Schenkenfelder, J. (2015). *Bio-Bergbauern Heumilch. Öffentliche Güter im Kontext der Produktentwicklung und –vermarktung. Presentation at the PEGASUS national workshop 28. September 2015. Wien.*
20. Werner Lampert Consulting Agency. (2016). Website of Zurück zum Ursprung. Retrieved from [http://www.zurueckzumursprung.at/produkte/milchprodukte/milch/frische-murauer-milch/?tx_isnachhaltigkeit_charts\[action\]=infochart&tx_isnachhaltigkeit_charts\[sid\]=7127#oekofussabdruck](http://www.zurueckzumursprung.at/produkte/milchprodukte/milch/frische-murauer-milch/?tx_isnachhaltigkeit_charts[action]=infochart&tx_isnachhaltigkeit_charts[sid]=7127#oekofussabdruck)



7 ANNEX

7.1 Documentation of research and action progress

- Interview 1-1: Project manager 1 of “Z.z.U”, Werner Lampert Consulting Company (17.12.2015)
- Interview 1-2: Project consultant of “Z.z.U.” at Upper-Styrian dairy (17.12.2015)
- Interview 1-3: General Secretary of Agricultural Chamber, Murau (17.12.2015)
- Interview 1-4: Leader-manager of local action group “Holzwelt Murau” (21.12.2015)
- Interview 1-5: Project consultant for label “Z.z.U.” at Upper-Styrian dairy via email (31.05.2016/02.06.2016)
- Interview 1-6: Project manager 2 and 3 of “Z.z.U.”, Werner Lampert Consulting Company (02.06.2016)
- Interview 1-7: General Secretary of Agricultural Chamber, Murau (08.06.2016)
- Interview 1-8: Leader-manager of local action group “Holzwelt Murau” (08.06.2016)

7.2 Supporting data and statistics

1. Austrian IACS system (data for 2013)
2. Agrarstrukturerhebung Österreich (data for 2013)
3. <http://www.heumilch.at/heumilch/heumilch-regulativ/>
4. Leader-Entwicklungsstrategie - LAG Holzwelt Murau 2014-2020.
5. Geographical indications and traditional specialities (http://ec.europa.eu/agriculture/quality/schemes/index_en.htm)
6. Zurueckzumursprung – Homepage:
([http://www.zurueckzumursprung.at/produkte/milchprodukte/milch/frische-murauer-milch/?tx_isnachhaltigkeit_charts\[action\]=infochart&tx_isnachhaltigkeit_charts\[sid\]=7127#oekofussabdruck](http://www.zurueckzumursprung.at/produkte/milchprodukte/milch/frische-murauer-milch/?tx_isnachhaltigkeit_charts[action]=infochart&tx_isnachhaltigkeit_charts[sid]=7127#oekofussabdruck))