Sustainable Development of an Agricultural Region – The Case of the Allgäu, Southern Germany

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Abstract Since the United Nations Conference on Environment and Development in 1992 in Rio de Janeiro, Brazil, much has been written about sustainable development. Nevertheless, information about sustainable development linked explicitly to a particular region is still relatively rare. In this review, we analyse and evaluate the sustainable development of the Allgäu, a rural agricultural region in southern Germany which has high touristic potential. The Allgäu is a typical rural region which had to experience many challenges, and undergo many changes and adaptations during its history, even when living conditions were not easy until the midst of the twentieth century.

From our evaluation we conclude that there is a relatively positive economic, social and ecological development towards sustainability. There exists a good economic and income situation for most people, good ecological conditions with relatively rich biodiversity, a relatively well-established social structure, as well as a certain identity with the region and relatively low social discrepancy. Nevertheless, different actual and future threats exist such as potential negative impacts related to increased development of the tourism sector, intensification or abandonment of agriculture in certain areas, or loss of traditions and customs.

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1 Introduction

Quite a lot has been written about sustainable development over the last two decades (e.g. Blewitt 2008; Rogers et al. 2008). The range of topics includes different global aspects of sustainable development, general theoretical considerations (Grober 2010), development of indicators (Job 1996), social dimensions and policies, economics of sustainability or more particular aspects of sustainable development such as that for rural areas (Friedel and Spindler 2009), how income of small-scale farmers could be improved or diversified or how tourism could be organised in a sustainable manner (Weizenegger 2003; Becker et al. 1996; Vorlaufer 1996). Examples of sustainable development linked explicitly to a particular region are still relatively rare (e.g. Gong and Lin 2000; Eglington et al. 1998).

In this review, we provide a comprehensive picture of the development of a region, and whether this development can be evaluated as socially, economically and ecologically sustainable. We carry out a combined qualitative-quantitative assessment where we use quantitative data and indicators when available, and when not available we use literature sources or expert knowledge from the region for a qualitative assessment. Thus, we will be relatively descriptive in certain parts. In this contribution we will describe how the Allgäu region – consisting of complex structures and landscapes, different economic activities and actors – evolved and developed. We will look at how the region used and uses its endogenous natural and cultural assets and its existing structures in order to react to changing conditions and external influences. We will outline the natural and historical contexts of the region which led to certain types of (economic) activities and sometimes to particular adaptations of these activities. For the recent past, we will present some projects, programs and instruments which have been established to foster and direct positive regional development and show that local and regional stakeholders play an important role in those processes. We will assess to what extent those activities and processes can contribute to sustainable development and to what degree we can generally speak of sustainable economic, social and environmental development in the Allgäu region. Finally, we will provide perspectives for potential changes in the future.

1.1 The Case of the Allgäu in the Context of Agroecology

Presently, three main interpretations of agroecology exist world-wide. Agroecology is either seen more as a practice, a movement or a scientific discipline (Wezel and Jauneau 2011; Wezel et al. 2009). Within the latter two, different types of meanings can be distinguished. If we take the case of the Allgäu, this concerns mainly the agroecosystem approach and the food system approach within agroecology as a scientific discipline (more information about the different approaches can be found in Wezel and Jauneau 2011). Regarding the agroecosystem approach, different types of agricultural production, their evolution and their constraints will be presented and evaluated for the Allgäu. In relation to the larger food system approach,

interactions and exchanges which take place in an agroecosystem or a region among different stakeholders, in networks, or with society in general, but also influences, impacts and opportunities from policies or the economy are considered. This will be particularly related to regional development of the Allgäu and different projects promoting local food or forestry products. This review of sustainable development in the Allgäu also permits an illustration in more detail about the greater theoretical link between agroecology and rural or territorial development than that presented in Wezel and Jauneau (2011). Although rural development also can be a sub-type within agroecology as a movement, this does not apply to the Allgäu, as no common, goal-oriented movement so far exists.

2 The Study Area

2.1 Delimitation of the Allgäu

The Allgäu is located in the very south of Germany, sharing borders with neighbouring Austria (Fig. 1). Various delimitations of the region exist because different approaches are used such as political or administrative, landscape, or one that involves the identity of the people who live within its boundaries (Fig. 2).

Fig. 1 Location of the Allgäu region in southern Germany

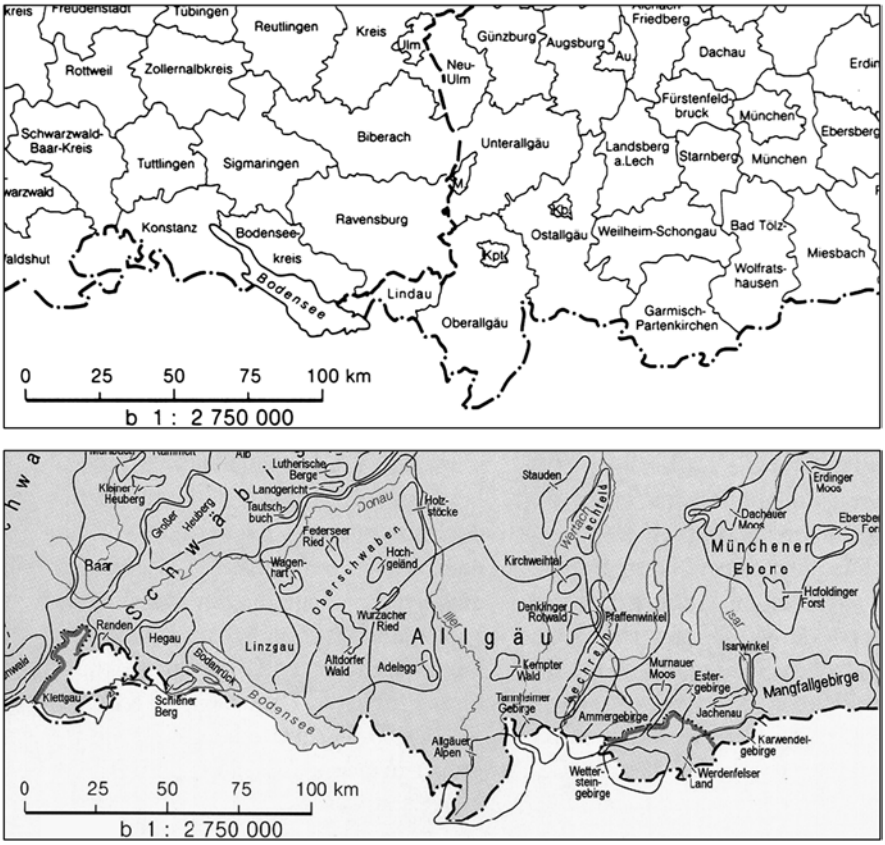

Fig. 2 Location of the Allgäu in southern Germany with its administrative (*above*) and landscape (*below*) delimitations (Source: Institut für Länderkunde Leipzig 1997)

The administrative delimitation is made with three districts in the Federal State of Bavaria which contain "-allgäu" in their name (Unterallgäu, Oberallgäu, Ostallgäu, standing for Lower, Upper, Eastern Allgäu). A fourth one, formerly Westallgäu, has since 1972, been called Landkreis Lindau (district Lindau). Those four districts and three urban municipalities Kempten, Kaufbeuren and Memmingen comprise an area of approximately 4,650 km^2. A slightly different grouping for the Allgäu is made with Bavaria's spatial planning regions. Here, the Allgäu consists only of the three districts Lindau, Oberallgäu and Ostallgäu, with the Unterallgäu belonging to a different planning region.

In Germany's National Atlas (Institut für Länderkunde 1997), the Allgäu is displayed as a landscape unit, including parts of Bavaria and a small part of Baden-Württemberg (the other Federal State in southern Germany). Sometimes, even the Austrian exclaves Jungholz or Kleinwalsertal are considered as parts of the Allgäu. In having no fixed borders, the Allgäu belongs to landscapes having

Fig. 3 The prealpine landscape of the Allgäu (*in the foreground*) and the Alps (*in the background*)

flexible delimitations (temporally or topically) with regard to tourism, landscape planning, or administration (Liedtke 1997; Jahn 1989; Klima 1989).

In this review, we follow the landscape delimitation from the National Atlas (Institut für Länderkunde Leipzig 1997) for the Allgäu, but we refer to the administrative units when it comes to statistical data as they are only available for these units. Unless indicated, statistical data refer to the four districts and the three urban municipalities from the Bavarian portion of the Allgäu.

2.2 Geography, Landscapes and Special Features of the Allgäu

Three main types of landscapes can be distinguished for the Allgäu. The most southern part belongs to the Alps, a large mountain range which stretches from southeastern France, over Switzerland and northern Italy, to Austria and Slovenia. The landscape of the prealpine lands and the foothills are located more in the central part (Fig. 3). The most northern part is mainly characterised by plains and smaller areas with gentle undulating lower hills (Fig. 4).

Scholz (1995) describes the geological and geomorphologic processes that led to today's landscapes of the Allgäu. The geological process was the alpine orogenesis (the primary geological mechanism, upheaval, by which mountains are formed on continents) that resulted in peaks, which in the very south of the Allgäu reach

Fig. 4 Landscape of the northern part of the Allgäu (*in the foreground*) and the snow-covered Alps (*in the background*)

altitudes up to 2,649 m above sea level (Hochfrottspitze) with a typical alpine character. The geomorphologic process involved several glacial periods during the Quaternary which shaped the Alps and the glacial landforms in the prealpine landscape which contain moraines, specific valley forms, gentle hills, rivers, and lakes. The glacial periods also were responsible for the creation of gravel plains intermixed in a slightly undulating landscape in the northern part of the Allgäu. This natural landscape has been transformed by man, leading to the cultural landscape of the Allgäu as described later.

The Allgäu is part of the temperate climate zone which is characterized by higher precipitation with around 1,600 mm/year in lower altitudes in the south and west (Oberstdorf, Isny) (Deutscher Wetterdienst 2010; Mühr 2010) and up to 2,500 mm/year in the higher mountains of the south. The northern and eastern parts receive less precipitation; between 900 and 1,200 mm/year (Mindelheim, Kaufbeuren) (Deutscher Wetterdienst 2010; Mühr 2010). Average annual temperatures range from 5.5°C to 7.5°C for the lower altitudes with lower temperatures in the southern portion. The snowy winter period is, in general, relatively long.

Land use in the Allgäu is related to the different landscape types and the climatic situation. The dominant land use in the four Bavarian districts of the Allgäu is agriculture which is practiced over 58% of the area (Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten 2010). Only in the northern portion can a mixture of crops (mainly maize, but also some rape, wheat or potatoes) and permanent grassland be found. The other areas are almost exclusively used as permanent grasslands (pastures, meadows) for livestock production (mainly dairy cows, fewer for meat production, very few goats and sheep for milk and meat). The second major land use is forestry, occupying 29% of the area. The share of forest areas

increases to 36% towards the south of the Allgäu. The rest of the area consists of towns, settlements or other urban land and road infrastructure (13%).

The Allgäu is known for its relatively high species and ecosystem diversity because of a highly heterogeneous landscape with different types of forests, bogs, marshes and wetlands, ponds, lakes, grasslands, and alpine ecosystems. About half of the Allgäu is classified by the German Federal Agency for Nature Conservation as an area which should receive certain protection (different protection levels being possible) because it has a high proportion of protected areas as well as endangered species and special biotopes (Bundesamt für Naturschutz 2004). Two out of 42 endemic plant species in Germany are endemic to the Allgäu. Different types of protected areas also are found in the Allgäu, such as nature reserves (8%), landscape protected areas (15%), or NATURA 2000 areas (13%) (LfU 2010). The latter may fall into more than one category, so that at present 24% of the Allgäu is protected under different types of protection status.

In 2008, the transnational Nature Park "Nagelfluhkette" was founded in collaboration with Austria. Parts of the Nature Park are protected areas in the strict sense (as nature reserves or landscape protected areas). The Park as a whole underlies a management plan following the objectives of sustainable development to include protection of nature and landscapes, sustainable agriculture and maintenance of cultural landscapes, sustainable tourism, and sustainable regional development.

2.3 Actual Economic Activity Data (Including Population)

The four districts and three urban municipalities on the Bavarian side of the Allgäu comprise a population of approximately 645,000 people, about one third of them living in one of the urban municipalities. The population density is 139 inhabitants per square kilometre (Destatis 2010).

The labour force is distributed among sectors including agriculture and forestry: 3.7%, industry: 31.6%, and services: 64.6% (Destatis 2010). Compared to other regions, this Allgäu region shows good performance in its economic development. One indicator is the low unemployment rate averaging 4.9% (ranging from 3.3% in Unterallgäu to 7.3% in Kaufbeuren), compared to the rate in Germany (8.2%). This is due to a mixture of agriculture, tourism, crafts and industry. In the southern Allgäu, tourism is dominant, while in the central and northern parts, trade and industry play important roles.

Tourism plays a major role with 2.4 million arrivals and almost 10.5 million overnight stays in 2009 (Allgäu Marketing 2010). More than 2,000 hotels or pensions offer about 70,000 beds. The average length of stay is 4.2 days (compared to 2.9 in Bavaria). While most tourist destinations in Bavaria had a decline in arrivals as well as in overnight stays during the last years, the Allgäu showed a growth of 4.2% for arrivals (the highest rate in Bavaria), followed by the Bavarian capital Munich (3.2%) and a very small decline of 0.2% for overnight stays (Allgäu Marketing 2010).

3 Changes in Land Use Patterns and Structure of Agriculture from the Middle Ages up to the Present

The historical perspective is very important in understanding the appearance of the present cultural landscape of the Allgäu. Different major changes of land use, particularly agricultural land use, occurred in the Allgäu from the Middle Ages up to the present. This often followed structural changes in agriculture such as changes in heritage rules, political systems, and changes in national or global markets.

The first human traces found in the Allgäu date back to 4,000 B.C. (Middle Stone Age). At this time, there were waves of human settlements and the first primitive forms of grain cultivation. Later, forests regained those early settlements. The Late Bronze Age brought men back to the Allgäu, settling first in its northern parts and later proceeding further south. By 1,200 B.C., Illyric farmers (from today's Hungary) founded settlements and brought with them the technique of iron processing. By 15 B.C. the Romans had conquered the region, making it a Roman province. The next 200 years were characterized by Alemann intrusions. During that time a number of settlements were destroyed. Starting from 400 A.D., the Alemanns created many new settlements.

3.1 Middle Age History of Agriculture

When the Franconians arrived in the sixth century A.D., heritage rules were changed. Under the Alemanns, all farmland was inherited as a whole, and this was altered to the land being divided. This meant that a family's land holdings were divided among the beneficiaries in equal terms, resulting in the number of small and smallest plots/fields increasing over generations (van Endert 2000). Fiefdoms also came into existence when the Franconians established royal civil servants (earls) to monitor royal domains and furnished them with lands. In addition, clerical domains developed on lands of dioceses monasteries. Between the ninth and thirteenth centuries, unexploited land belonged to the King, who gave large portions to his clerical and secular sovereigns (earls, dukes, princes). For them, the land was useless as long as it was wilderness. Therefore, settlers were invited, and they were given more rights than usual. At the same time, there were many properties having foreign masters, and towns also gained influence.

This land ownership structure and heritage practice of splitting the land finally led to a degree of fragmentation which did not allow for reasonable cultivation any longer because agricultural land per family became too small from which to make a living, or access to the many very small parcels became difficult or created tensions among the farmers. Nowotny (1984) gives an example of a farmer's 5 ha plot which was divided into 39 different fields in 1550.

The subsequent history of the Allgäu will be presented below in more detail as important changes in land use patterns took place which played important roles in the development of the region up to the present.

3.2 *Vereinödung – New Agricultural Structures*

Vereinödung stands for changes in settlement patterns, which became necessary due to the existing field structure with many small parcels. Vereinödung means the establishment of dispersed single farmsteads or small hamlets, with the fields (in most cases newly allocated) located next to the farmstead. The Vereinödung has a threefold significance:

- geographical: a place outside the village
- juridical: possession without mutual burdens
- economical: reshaping with or without extensions.

Most known forms of Vereinödung transformation are found in the Allgäu and other parts of southern Germany, in England, and in Scandinavia. As described above, during the Medieval Ages there were generally a lot of rules on how to work fields as well as financial obligations towards the feudal lord. But those rules were not applied to common lands that had been created through forest clearances. Thus, these areas were open to the establishment of new farmsteads.

It is not possible to determine exactly when the process of Vereinödung started in the Allgäu. Most authors refer to a Vereinödung in the village of Sulzberg in the year 1550 (Nowotny 1984; Lochbrunner 1976). In the beginning the process was slow; up to the start of the Thirty Years War in 1618, only 21 cases were reported, all of them near the town of Kempten. But the idea spread, so that up to the end of the nineteenth century more than 1,200 shifts had taken place, most of them between the 1770s and 1830s (Lochbrunner 1976).

Vereinödung did not only mean new allocation of fields, but very often also a displacement of the houses. In some cases it took only one week to break down the house and set it up in another location. Nowotny (1984) claims that the movement of houses had primarily economic reasons – there were no more long distances, a fact that saved time. From the social point of view, the movement brought a disintegration of the families that now had to live outside their social environment.

According to Nowotny (1984), Vereinödung in the Allgäu was a process initiated by the farmers themselves, and not a constraint imposed by the authorities. It was only in 1791 that the authorities began regulating Vereinödung through a legal ordinance – but by then, about two thirds of all Vereinödungen had already been carried out. It was a slow, but well grounded and well reflected movement.

3.3 *Transformation from Blue Allgäu to Green Allgäu*

The Allgäu had never been well suited for cropping; difficult topography, watery depressions, moory soils, frosts, long winters, and high precipitation were all reasons for not favouring cropping, at least from an economic point of view. Nevertheless, forms of agriculture existed. Alemann settlers had brought the practices into the region but never adapted them to the conditions in their new home, nor

did their descendants up to the nineteenth century. They exclusively practiced subsistence farming because of the lack of transport, leading to a highly diversified agriculture (Thierer 1985).

Already in the early Medieval Ages, flax (*Linum usitatissimum* L.) for linen production and hemp (*Cannabis sativa* L.) for yarn production had been cultivated (the blue flower of flax providing the name "Blue Allgäu"), for subsistence and trade. Over time, the region developed a high competence in the textile sector. Beginning in the fifteenth century, however, the climate changed. Average temperatures declined and precipitation increased. Overexploitation of soils had lasted for centuries, and the situation for the farmers became worse, eventually leading to the Peasants' War in 1525. With the colonial era and industrialisation starting in the middle of the nineteenth century, imported industrially processed cotton came into the markets, representing a serious competition for linen, and leading to a decreased income for farmers.

Among other agricultural activities and processing, cheese had always been produced, but on a small scale and mostly for subsistence. When the engagement of farmers and their families in the textile sector started to become increasingly difficult from 1850 onwards, more and more farmers started to produce more conservable types of cheese (cheeses lasting longer periods of time) after the methods of pioneers such as Johann Althaus and Carl Hirnbein, who had learned the techniques in Switzerland and the Netherlands (Krattenmacher 1983). Althaus brought in techniques to make Emmentaler cheese (hard cheese) in 1827, and Hirnbein followed a few years later with Limburger cheese (soft cheese). For the production of hard cheeses like Emmentaler, large amounts of milk were necessary, so that cooperation between the farmers was required, leading to the founding of cooperatives (Thiel 2000; Jahn 1989). The production of soft cheese demanded less milk, and also was easier to produce. The main objective, however, was to produce cheese of better quality, which lasted longer and could therefore be transported.

New means of transport such as the railway allowed for exportation of these products. In his travel guide dating from the middle of the nineteenth century, Buck (1856) mentioned that the production of Backstein cheese had increased recently and was being exported to northern Germany, Holland, and even America. This was the beginning of dairy farming on a larger scale (the colour of the pastures leading to the "Green Allgäu"). The transition from the blue to the green Allgäu lasted until the beginning of the twentieth century when the last flax fields disappeared (Güthler 2006). According to Jahn (1978), the previously mentioned process of Vereinödung was an indispensable precondition for the change from arable cropping to the pasture system, because only the location of the farms amidst larger block parcels could allow for an improved form of use due to the short distances to the pastures.

The changes which took place with flax production and processing, and the beginning of industrialisation in the nineteenth century can be well illustrated with the small town of Immenstadt in the southern Allgäu. Vogel (2000) estimated that half of the population was occupied with weaving and spinning in Immenstadt around 1660. Nevertheless, industrialisation did not take place before 1855, when the first spinning mills were founded (Kamp 2000). In 1867, the town had a

population of 2000, with 10% of the population working in the spinning mills. Train connections and the spinning mills transformed the town to an urban industrial centre within a few decades (today it has around 15,000 inhabitants). Some of the spinning companies closed down towards the end of the nineteenth century, and some lasted longer, with the last one closing in 1973. The knowledge acquired in this field during the long time period – many of the workers came from families that had been employed for generations and were proud to work for a successful traditional company – allowed the textile industry to exist further into the twentieth century. Another reason for the success was the aspect of quality (Kamp 2000; Vogel 2000). During the second half of nineteenth century, the Allgäu also became a global player for hemp processing. In the beginning, hemp came from the region, but large quantities were soon imported from Italy or the Soviet Union, and were transformed to different types of yarn which was then exported around the world, even to Australia (Kamp 2000).

3.4 Recent Changes in Land Use and the Landscape of the Green Allgäu

In the middle of the nineteenth century, agriculture was a mixture of fields and pastures that prevailed in the southern part of the Allgäu (towards the Alps) (Güthler 2006). Potatoes, oats, barley and rye were cultivated for local consumption, whereas flax and livestock were produced to generate income. Schaffer and Zettler (1984) analysed the changes of the cultural landscape coming with changes in agricultural structuration in the Unterallgäu (northern part of the Allgäu). While around 85% of the agricultural land in the valleys and smaller plains was used for cropping (flax, hemp, oats and spelt; Konold 1996) around 1840, it changed to 90% grassland at the beginning of the 1980s. Schaffer and Zettler (1984) distinguish three main phases:

- 1840–1910: crises for the farmers and changes between forest clearance and afforestation
- 1911–1949: modernisation and the beginning of a new economic attitude
- 1950–1984: cultural landscape between use and misuse.

From 1840 to 1910, many economic crises appeared which affected the farmers (low cereal prices, famines, high credit costs). Agricultural work was still handwork with simple tools. There had been smaller changes in the agricultural land structure, but in general a highly diversified landscape prevailed with many small landscape structures and many embedded cleared older forest parcels or newly afforested sites.

The modernisation of agriculture with the introduction of machines, the establishment of agrarian markets and the transition from cropping to livestock breeding, led to an initial clearance of smaller landscape structures such as single trees or hedges and to initially smaller relief work (levelling of some areas) from 1911 to 1949.

The period from 1950 to 1984 is signified by a cultural landscape between use and misuse. The large-scale use of machines on larger fields or meadows/pastures, the clearing of fields of many hedges, trees and creeks, the filling up of smaller depressions, hollows or creeks, and the intensification of use (drainage, fertilisation, purchase of fodder from outside the region or on the world market) led toward a homogenisation of the landscape over the entire Allgäu region (Güthler 2006; Schaffer and Zettler 1984). In addition, in the 1990s and 2000s most settlements or towns expanded and some new roads and ski lifts were constructed, as well as the installation of water basins for snowmaking with snow cannons (Güthler 2006). This process also led to a loss of special or rare biotopes such bogs, fruit tree meadows, fish ponds, dry and humid meadows (Güthler 2006; Konold 1996). In contrast, in the southern Oberallgäu, forested areas increased by 13% over the last two decades (Güthler 2006), and a change back from spruce dominated forests to more natural mixed forests (the dominating forest type in former times) also occurred during this period.

4 Agriculture and Forestry Today – Strengths and Weaknesses

4.1 Forestry

Forests cover 29% of the Allgäu (Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten 2010). In particular, the southern part of the Allgäu is characterized by small scale forest ownership, which makes it difficult to reconcile the ecological function (e.g. protection against avalanches in the mountains) of the forests with a sustainable economic perspective for the owners (AELF 2010). In the districts of Oberallgäu and Lindau, 59% of the forest area is owned privately with small forest parcels, 9% is larger private forest areas, 6% is community forest and 26% belongs to the Federal State. The average size of the private woodland ownership is only 2–3 ha, and many of the owners lack technical equipment and skills. In fact, estimates show that only about 60–70% of the timber which could be exploited is actually being used in these private forests.

4.2 Agriculture

More than half of the study area (58%) is under agricultural use (four Bavarian districts) (Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten 2010). In the most southern districts (Oberallgäu and Ostallgäu) the use is almost exclusively (99.9% and 90%, respectively) as permanent grassland (pastures, meadows) for livestock production. Parts of the grasslands, especially in the mountainous southern parts, cannot be cut with machines due to their steep slopes. In the

climatically more favourable northern part of the Allgäu (warmer, less precipitation), there is a mixture of cropping (31%) and permanent grassland (69%).

The average farm size is 55 ha, of which up to 35% of the area is leased land (Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten 2010; Destatis 2010). Since the 1980s, both figures have strongly increased due to a focus towards fewer, but larger farms (Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten 2010; Destatis 2010). The average number of large livestock units per hectare is 1.4 with a total of 8,173 livestock farms in the four Bavarian districts (Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten 2010). Approximately 69% of the farms are full time agricultural enterprises, compared to 46% in the Federal State of Bavaria. The highest proportion of part time farmers is found in the most southern districts of Oberallgäu and Lindau (35%) with an average farm size of 18 ha. In these districts and the other southern parts of the Allgäu, the so-called "Alpwirtschaft" (mountain pasture operations) play an important role as it is practiced on more than half of the agricultural land. This area underlies often difficult production conditions because of the steep slopes of many pastures, and in certain cases because of the remoteness (low accessibility) of the pastures. Nearly 635 alps (a production unit with several mountain pastures) were registered in the Allgäu in 1972 (Jahn 1978). During the 1930s, butter and cheese were still completely produced directly on the alps, but later production moved to the valleys and even more north to be closer to towns with better traffic infrastructure. Today, in most of the alps, only young cows that have not yet been used for reproduction and therefore do not give milk, are found. During the summer of 2010, there were 689 alps with more than 28,000 young cattle, almost 3,000 milk cows, and a few horses, sheep, goats and pigs, with the numbers being stable for the last several years (Honisch, personal communication, press article in Allgäuer Zeitung 2010). Due to governmental aid programmes, the alps are an agricultural unit in the Allgäu which remained more or less untouched during the generally strong structural changes in agriculture during the last decades, which is reflected by their stable numbers (Güthler, 2010, personal communication).

The majority of the farms in the entire Allgäu produce milk from cows. In the four Bavarian districts of the Allgäu milk production is a bit less than 1.2 million tons per year (Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten 2010). This milk is processed in famous dairy firms (e.g. Champignon, Allgäuland, Edelweiß) and transformed into well-known brand-name dairy products (cheese, milk, butter, yoghurt, cream). According to the EU-database DOOR (EU 2010), within the Allgäu two cheese products carry the EU-label Protected Designation of Origin (PDO): "Allgäuer Bergkäse" and "Allgäuer Emmentaler". This label covers agricultural products and foodstuffs which are produced, processed and prepared in a given geographical area using recognised methods. In Germany, only four types of cheese carry the label. For a comparison in the same cheese category, France has 45 listings and Italy 38.

Organic agriculture is relatively well developed in the Allgäu. The share of organic agriculture enterprises over all agricultural enterprises is 4.7% (5.1% for agricultural land) for the district Unterallgäu, 8.1% (7.9%) for Ostallgäu, and 11.3%

(9.9%) for Oberallgäu, the latter two being clearly higher than the average share of 5.1% in the southwestern part of the Federal State of Bavaria (10 districts) (Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten 2010; Bio-Ring Allgäu 2010).

The importance of agriculture in the Oberallgäu, besides the production of milk, meat and cattle breeding, is increasingly founded on the maintenance and conservation of the cultural landscape. Without extensive agricultural use, the economically important tourism sector in the southern Allgäu would be unthinkable (see also Güthler 2006).

More and more, agricultural enterprises are trying to increase their income by renting guest rooms or holiday apartments. In particular, in the touristically more attractive southern Allgäu, many agricultural enterprises gain indispensable additional income. For example, 23% of all agricultural enterprises in the district Oberallgäu offer "Holidays on a farm". They provide almost 5,500 beds and have nearly 500,000 overnight stays per year.

5 Tourism

Tourism has a long tradition in the Allgäu. As early as 1856 a handbook for travellers was published (Buck 1856). The author not only recommended never undertaking a hike into the mountains without a reliable guide and some wine or rum or similar beverage, but also mentioned that all over, even in the most remote villages, cheap and good accommodations could be found. There were already a wide range of activities available. For example, in a mountain lake just underneath the peak Großer Daumen at an altitude of about 2,000 m above sea level, boat tours were offered. Also, a visit to a 'Viehscheid' (the cattle returning to the valleys after a summer on the alpine pastures) was proposed to the visitor. Even today, the Viehscheid is one of the most appealing events for visitors.

Tourism continues to play an important role for the Allgäu. Its location close to the Alps and its landscape diversity attract overnight tourists as well as excursionists. There are potentials for many activities during all seasons, the more popular ones are skiing and hiking, followed by mountain biking, swimming in lakes, or visits to traditional festivities. Centers for tourism are located in the southern parts of the Allgäu, within well known places like Schwangau, where the famous Neuschwanstein castle is located, or Oberstdorf, where international competitions in ski-jumping or cross-country skiing take place. The district Oberallgäu strongly profits from tourism, but also is relatively independent of it with a share of 14% of the total economic income generated in the district. In single communities in the southern part of the Allgäu, the share of total income generated by tourism is much higher; the Bavarian average is 3.4%. Tourism intensity (nights per 1,000 inhabitants) in the Allgäu is 12,000 with a range from 1,400 in the town of Kaufbeuren to 35,000 in the district of Oberallgäu. Private hosts play an important role in host structure. For the Oberallgäu, approximately one third of all overnights take place

in private houses. Farm holidays are particularly important for farmers in providing additional income by renting rooms or apartments to tourists.

In 1985, the concept of the community of Bad Hindelang for the integration of agriculture and tourism, later known as "Eco-Model Hindelang", was launched. Its objective was to maintain or renew the diverse cultural landscape and at the same time produce income for the mostly small-structured farms in order to keep them in existence. The idea is simple: farmers receive economic compensation for maintaining the cultural landscape, which is of great importance for tourism. The model received an award as a "recognised international world-wide project" at EXPO 2000 in Hannover, Germany, and was acknowledged by the scientific community (Hemmer 1997; Maier 1996), and even by researchers from Japan (Kureha 2002). Yet, realisation of the eco-model proved to be difficult. Today, Bad Hindelang follows a concept with softer criteria. For example, a historic car race that had been stopped for several years because it would not fit into an ecological concept (Maier 1996) is once again in operation. The present concept is based on ski tourism and health, as well as landscape tourism experiences.

6 Current Regional and Rural Development Programs and Project Examples in the Allgäu

Rural areas all over Europe are facing similar problems. The absence of job options and perspectives, especially for young people, leads to a steady out-migration or, in the worst case, to rural exodus. Declining numbers of inhabitants leads to a reduction of infrastructures, which in turn results in a loss of quality of life. Structures in agriculture also often change. Rural areas that want to react to those processes need a development strategy suitable for their specific situation and problems. Here we present a number of projects that have been started in the Allgäu in order to promote the products of the region. All of them have received funding for an initial phase or for the first years of the projects (the latter three through the LEADER-Programme of the European Union) and were then continued completely on a private basis.

6.1 Von Hier – Products (From Here)

An interesting marketing strategy in the Allgäu was developed with the "Von Hier" products (From Here) (Fig. 5). The label was developed by a regional German supermarket chain (Feneberg) for promoting and selling food products, which are both from the region and organic. The supermarket chain was founded in 1947 and has about 3,800 employees. It is run by the family Feneberg (2010b). In 2009, the chain consisted of 73 supermarkets and 9 larger department stores (Siegel 2010).

The Von Hier project started in 1997, with co-funding from the Federal State of Bavaria and the EU for the years 1999–2001 (E. Wirthensohn, 2010, personal

Fig. 5 The Von Hier (From Here) label for the regional supermarket chain in the Allgäu

communication) and the label was established in 1998 (Kippes 2008). Today about 300 different Von Hier products exist including cheese, dairy products, eggs, vegetables, fruits, meat, sausage, flour, bread, fruit juice and beer (Feneberg 2010a). Most products purchased are dairy (55%), followed by meat and sausage (18%), and fruits and vegetables (9%) (Siegel 2010). Most customers of the supermarket (84%) buy Von Hier products, in particular people older than 30 years of age and who have been living for several years in the Allgäu.

The regional aspect of Von Hier products is very important. Only products which are produced within a radius of 100 km around the central Feneberg site in the town of Kempten are considered under the label (Feneberg 2010a). The area within the 100 km radius completely includes the Allgäu, but also covers about the same area beyond it. At present, more than 600 organic farmers and 23 processing enterprises deliver their products to Feneberg (Siegel 2010). All organic farms are certified under the European Union Bio-Certification 2092/91.

Under the Von Hier strategy, an added regional value has been established in linking regional farmers and processing enterprises via the supermarket to the consumers. To strengthen this regional link, information about the different organic farmers and their addresses are provided on the internet or in brochures in the supermarkets with the objective of making the organic producers visible to the consumers (Feneberg 2010c; Kippes 2008). A yearly turn-over of 16 million Euro for Von Hier products was calculated for 2009 providing an added value of 3.22 million Euro for the contracted organic farmers (on average, 5,000 Euro per year and enterprise; added value = price difference paid to the organic farmers compared to prices of conventional products) (Feneberg 2010c; E. Wirthensohn, 2010, personal communication). Approximately 500 additional jobs have been created by the Von Hier program.

Over the last years, the Von Hier program has won different awards (Kippes 2008). Among them is second place in a competition during 2007, financed by the German Ministry of Nutrition, Agriculture and Consumer Protection, for regional initiatives promoting regional economic structures in rural areas (DVL and BMELV 2007). The success of the Von Hier concept also is reflected by the fact that it has been copied to other regions in north-eastern Germany (Kippes 2008), reflecting the many positive economic, social and ecological objectives that have been fulfilled by the program for the farmers, consumers and the supermarket chain.

Another example of a supermarket chain which promotes a special label (Rhöngut – regional and organic meat products) is from a mountainous area in

central Germany (Roep and Wiskerke 2006). This production has made a positive contribution on the revitalisation of the region and rural development by providing a positive economic, social and environmental profile.

6.2 The LEADER Program of the European Union

LEADER stands for Liaisons Entre les Actions de Développement de l'Economie Rurale (Links between rural economy and development actions) and is a Programme of the European Union. The basic ideas of LEADER are:

- Territorial approach: specific features of the respective regions have a high value – regions are to discover and develop their individual profiles.
- Bottom-up approach: local actors are to participate in the development of a strategy, in the realisation of projects and in decisions on how the EU-money is spent.
- Regional development strategy: different actors of a region develop a strategy for a positive development of the region.
- Integrated approach: actors from different sectors cooperate in planning and realising a project.
- Networks of actors: actors shall learn from each other, exchange information, integrate applied knowledge and cooperate.
- LEADER Action Groups (LAGs): LAGs are regional federations of public and private people and institutions that coordinate and foster the development process, bring the different actors together, and are the contact point for project ideas and proposals.

In each of the four districts on the Bavarian side of the Allgäu, a LEADER Action Group exists. Within the LAG Regionalentwicklung Oberallgäu, 34 projects have been realised that brought nearly 2.4 million Euro of aid money into the region between 2003 and 2006. Compared to LAGs in other regions, the Allgäu has a very high quota of cooperative projects (projects with two or more LAGs involved). This is because the identification of people with their region made it quite easy for the four LAGs to cooperate. In addition, there are other structures responsible for the Allgäu as a whole, such as the Allgäu GmbH (former Allgäu Initiative and Allgäu Marketing; responsible for economic and tourism promotion).

6.2.1 Project: LandZunge – The Taste of the Countryside

LandZunge (LandTongue) is one example of a project starting within the LEADER program (Fig. 6). LandZunge is a network of producers and restaurant chefs promoting and using regional products in restaurants according to their own criteria (Landzunge 2010). LandZunge was initiated by people who care about the region where they grew up and currently live, among them a journalist and a restaurant owner.

Fig. 6 LandZunge label

The initiative started in 2001 in the district of Ravensburg on the Baden-Württemberg side of the Allgäu, was extended to the Bavarian side about 2 years later, and has continued to develop ever since. Each restaurant in the network is obliged to offer at least three meals with beef or cheese from certified producers of the region. Beer and certain soft drinks must be produced within the region as well. One of the problems and a reason why such projects often do not work is logistics; a restaurant chef cannot shop in all places where producers sell their quality products. Hence, from the beginning of the LandZunge project, strong partners were sought. Feneberg, the food supermarket chain described above, is one of them. Given the presence of a journalist in the group, the initiators also were aware that good publicity is a precondition for the success of such a project. Therefore, they founded their own magazine, in which the participating restaurants and partners are presented. Topics comprise not only the ecologic and economic aspects of such a project, but also the social ones; appreciation for clean structures in the villages, a restaurant as a meeting point for local people, or quality of life. Much effort was put forward to convince the local and regional politicians of the idea, and to provide support for the project.

In the beginning of 2010, almost 80 restaurants participated in the network, and many of these purchased all their beef and cheese from regional producers, so that a superior category, LandZunge Plus, was developed for them. The project unifies the different local breweries, which normally are in competition with each other. Quality control has been handed over to an external institute, and a LandZunge Foundation was founded. Restaurant owners report that clients are ready to pay a bit more if they know about their contribution to the development of the region.

6.2.2 Project: Allgäuer Alpgenuss

"Alpen" (singular: Alp) is not only the name for the mountain chain, but also for the mountain huts in which the herdsmen stay during summer months when the cattle graze in the alpine pastures in the mountains. It is quite common that small scale gastronomy is attached to those Alpen, where visitors can get dairy products and basic meals.

When it turned out that more regional products such as bread, meat, or even dairy products were purchased at discount markets, the project "Allgäuer Alpgenuss" was

Fig. 7 Allgäuer Alpgenuss label

Fig. 8 Label for the forestry project in.Silva

initiated (Fig. 7). Its objective was to bring more regional products to the menus in order to stimulate added value for the region – very similar to the LandZunge approach.

Currently, a pool of more than 40 Alpen have formed an association, in which producers and other partners also are represented. They have defined a set of criteria for participation in the network, and the association initiated a cooperative agreement with the regional newspaper to provide public attention for their activities.

6.2.3 Project: in.Silva – Clustering of Wood Supplies from Small Forest Owners

As mentioned above, agriculture and forestry are important for the Allgäu, in particular for maintaining the landscape, which is vital for the regional tourist industry. The region is characterised by small scale forest ownership, which makes it difficult to reconcile the ecological function of the forests with a sustainable economic perspective for the owners.

For this reason the project in.Silva was started in 2005 with support funding from the LEADER programme (Fig. 8). The project brings together regional wood producers into a cooperative that can meet the demands of large scale wood processing industries. The established organisational structure acts on behalf of numerous micro-producers, is innovative and adds significant value to the production cycle. It shows how a major deficiency in terms of competitiveness in a particular sector can be overcome through the development of a new regional governance framework. Regional sawmills are still supplied by members of the cooperative individually, but given the increase in quality and quantity of wood products provided by working together, the cooperative aims to supply major national and international clients.

Most members work according to agreed standards for sustainable forestry practices provided by the PEFC (Programme for Endorsement of Forest Certification Schemes) (H. Wirthensohn, 2010, personal communication).

The project has given the regional wood producers the capacity to act independently and govern themselves after the funding period has finished, and is therefore a good example of how programmes for rural development such as the LEADER-Programme of the European Union can initiate sustainable development. The project aims to create a 'win-win' situation, where major wood processing industries are attracted to the quantity and quality of supply, and at the same time diversifies and stabilises demand to ensure long term revenue for the producers.

6.3 Effects and Success Factors

A success factor common to all these projects is that an individual or group of people see the project as 'their' own. The necessity of networking also has proved to be an important factor for the success of such projects.

A comparison of different development activities in the Allgäu and in Vorarlberg (a neighbouring region in Austria) showed that regional development is a slow process in which results are not necessarily seen quickly. Therefore, one of the success factors is that the long duration of regional development processes leads to a fruitful exchange of knowledge, ideas and experiences (Mayer et al. 2008). Actors learn that they have the ability to find innovative solutions, and networking and cooperation improve through the projects – although the ability to cooperate may be needed even more in the future.

The general problem with most subventions from the European Community (direct payments from the Common Agricultural Policy) is that, in most cases, it slows down or inhibits innovation in agriculture. There are several interesting innovative projects or initiatives in the Allgäu that are linked with agriculture or forestry (From Here or other local and regional products, In.Silva, ecotourism, farm holidays, projects from other sectors with indirect links to agriculture), but many farmers still depend enormously on subventions and the market prices for milk and cereals.

Even the LEADER-Programme, which seeks to foster innovation, motivate actors and create networks, has its limits, due to its focus on specific or pilot projects. Yet, even this can serve as a best practice, although not often solving problems of a whole sector such as agriculture. An Allgäu label is being created, but even in this project the situation for the agriculture sector is difficult. In contrast to tourism or the general marketing of the Allgäu region, no well-established structures or appropriate authorities exist in the region to establish the above mentioned programs on a larger scale. The problem is a lack of common strategy. As mentioned by Lightfoot et al. (2001), there must be a high importance for collective visioning to sustainably develop an agroecosystem or a region.

7 Allgäu – A Development Towards Sustainability?

In general, it is very difficult (or even impossible) to completely answer the question of whether a certain region is developing towards sustainability (i) due to lack of sufficient reliable data to evaluate most of today's potential indicators for the three pillars of sustainability (economic, social, ecological), and (ii) an evaluation simply reflects the present situation which can change rather quickly within a few years. Nevertheless, in the case of the Allgäu, we provide a comparatively good picture of the present situation in conducting a mixed qualitative-quantitative evaluation based on selected indicators. For the evaluation we also consider the knowledge of regional or local experts (see acknowledgments) on certain issues. We also list the positive and negative points for the economic, social and ecological dimensions with the overall evaluation presented in the conclusion.

7.1 Sustainable Economic Development

In general, many positive points can be mentioned which show that the economic situation for many people has improved over the last decades (and centuries if we look at regional history) as most people have sufficient income to make their livelihoods in different activity sectors:

+ Existence of a broad diversity of employment in the primary, secondary and tertiary sectors.
+ Relatively low unemployment rate in the districts of the Allgäu.
+ Fewer farmers abandoning agriculture compared to other regions in Germany because of good possibilities for receiving a diversified income from agriculture (from conventional and, in particular, organic agriculture), from direct or regional sales of their products, from tourism (accommodations or part time engagement in the tourist sector), from full-time or part-time engagement of family members in local industries or tertiary sectors, and from financial support payments by the Federal State or the EU.
+ A stable or even slightly increasing number of farmers producing milk and livestock on alps, the alpine summer pastures. This type of production is strongly supported by different financial aid programs.
+ An increasing tourism sector, although initiatives and concepts for eco- or sustainable tourism still remain quite limited. A lot of the money remains in the region because of the many family enterprises engaged in tourism and a highly diversified small-structured tourism market.
+ Positive income evolution for organic farmers through higher prices for their products and a relatively stable market (example of the added value for Von Hier farmers).
+ A rural region with an increasing population in contrast to most situations elsewhere in Germany and Europe. This does not *per se* mean an improvement of the

economy of a region, but reflects the attractiveness of the Allgäu to stay or move there, which is not the case for other rural areas in Germany or Europe.
+ High potential for local or regional food products (dairy and cheese products in general, From Here products in particular). For example, quite a lot of local breweries have existed for decades, and still find their consumers.
+ Existence of local dairies of which most work profitably and independently of national and global milk prices.

However, these positive points also are accompanied by some negative points:

– Some farmers, in particular smallholders, have large problems in generating sufficient income, and have partly or completely abandoned their work over the last years.
– Low milk prices over the last years, and probably also over the coming years, will prevail among the farmers who focus on milk production, and this is the highest proportion of all farmers in the Allgäu. They will be pushed to complete abandonment, to look for alternative sources of income, or to intensify or rationalise production (more land, more fertilisation, extra fodder, more cows).
– The last remnants of the textile industry changed to new products, but have difficulties in continuing except for very specialised production (e.g. traditional costumes for locals and tourists).
– Many of the smaller tourist accommodation facilities such as pensions (bed and breakfast) need modernisation to meet today's tourist demands for quality.

7.2 Sustainable Social Development

Similar to economic development, some positive points can be mentioned for social development:

+ Less social discrepancy and fewer social problems because of the relatively low unemployment rate.
+ Many family farms remain with the possibility to generate income from other types of work which allows for the maintenance of traditional family structure.
+ The population of the Allgäu has a generally positive image and identity, and is proud of its region (Siegel 2010; Sieth 2006).
+ The continuing existence of local traditions (e.g. traditional festivities and clothes; local or regional customs).
+ The LEADER projects and other local programs have improved the network of stakeholders as well as provided a more common vision on different topics. These social networks have good potential for sustainability.
+ Healthy social structures and involvement lead to a high sense of community and voluntary commitment.

As well, there are negative points to be considered:

– A trend of younger people is to leave the smaller villages to live and work in the towns. Although this trend exists, it is much less pronounced in the Allgäu

compared to many rural areas elsewhere. In contrast, in many larger villages there is a positive trend of many young families staying in the village, or even new installations of young families from outside the Allgäu. In many communities in the southern Allgäu, an increasing number of retired people have settled in the villages because of the attractiveness of the landscape, leading to an aging of the village population.
– Ground-breaking projects like Eco-Model Hindelang do not lead automatically to successful implementation because of diverging interests of stakeholders and lack of a defined common vision.

7.3 Sustainable Ecological Development

Although some negative points exist, the Allgäu region still has high ecological value and will likely maintain or even improve it in the future.

+ Relatively high species and ecosystem diversity exist because of a highly heterogeneous landscape with different types of forests, bogs, marshes, ponds, lakes, grasslands, alpine ecosystems and occurrence of endemic species.
+ High share of protected areas in the region.
+ Low intensive livestock breeding created and still preserves many alpine and lowland pastures and meadows with a diverse fauna and flora. Some of them might be abandoned in the future because of insufficient profitability for farmers if they are not remunerated for this activity either via agri-environmental scheme payments or direct payments from the communities to keep the cultural landscape open for tourism (attractiveness of the landscape).
+ No nitrate or pesticide pollution of the ground water (and drinking water) because low-input agriculture dominates, and lakes have good water quality.
+ A high share of organic agriculture, which has a lower impact on the environment and is seen as favouring higher biodiversity compared to conventional agriculture.
+ Increasing forested areas with a more natural composition of tree species (mixture of broadleaf and needle trees) and higher non-woody species diversity.
+ Some negative trends such as expansion of ski lifts and skiing areas, and damage to natural vegetation by hikers has been reversed over the last two decades in certain areas, but only in smaller spatial areas. Also, some rare species such as the beaver and Golden eagle have increased in numbers over the last years.
+ Existence of initiatives/projects for sustainable development such as EZA (Energy and Environment Centre Allgäu) or Allgäuer Moorallianz (an initiative for the conservation of bogs that was among five winners in a national contest).

As well, the negative points to be considered are:

– A loss of valuable ecological areas has occurred over the last two decades, brought about by intensification of agriculture, construction of new roads, ski lifts and water basins for snowmaking and expansion of settlements. Although this concerns larger spatial areas in only a few cases, this loss can be found in many areas of the Allgäu.

- The intensification of land use in valleys or lowland areas as a consequence of low milk prices often leads to less diverse vegetation. The abandonment of the use of some summer alpine pastures can lead to bush and forest encroachment (Güthler 2006). In addition, these vegetation changes decrease the attractiveness of the landscape as flower-rich open areas for tourists because they are replaced by forests and bushland, or by less diverse grasslands.
- Some rare species such as grouse (a group of birds) and the Moorland Clouded Yellow (a butterfly) decreased in numbers over the last years because of increasing landscape homogeneity (less landscape structure, spruce cultivated forests) in certain areas.
- In the past, larger flooding events occurred in some valleys which caused much damage to many areas including human settlements which are in some areas too close to major rivers and lack sufficient natural water retention areas. After the last flooding, such natural water retention areas have been re-established to allow "natural flooding" during peak flood events.

8 Conclusions and Perspectives for the Future

Given that 100% sustainability (meaning that all indicators or parameters show positive trends) is for us illusionary, do we find sufficient evidence for sustainable development in the Allgäu? We would say yes, because many points can be listed for positive economic, social and ecological development in the region. We are aware that many negative points exist as well and some conditions should be improved; thus, some people may not agree with our judgment. Barring catastrophe over the coming years, the overall good economic and income situation for most people, the good ecological conditions and relatively rich biodiversity, the relatively well-established social structure, as well as the identity of the people with the region and relatively low social discrepancy indicate that sustainability for the region can be maintained and improved. If we consider ecological sustainability, for example, it is obvious that some crucial points still exist, but it appears that the Allgäu still has high ecological value and probably can maintain or even improve it in the future. The ecological situation was probably better some decades ago with more pastures or meadows having high species diversity and less use of manure. Yet, the negative trends have been much reduced or even nonexistent in certain areas of the Allgäu compared to many other rural areas in Germany or Europe.

Although we find relatively positive development in the Allgäu, different actual and future threats exist. These are (i) potential negative impacts related to the tourism sector such as construction of new infrastructure in natural areas, increasing traffic and mass tourism in certain areas that degrade habitats and reduce species richness, (ii) intensification of agriculture in certain areas, but also abandonment of agriculture in other areas, (iii) loss of traditions and customs, and (iv) declining

numbers of smallholders, in particular those with alpine pastures. The objective is to minimise these negative impacts to assure the sustainable development of the Allgäu in the future. If, for example, the negative impact from tourism (construction of infrastructure, traffic, etc.) continues with the same dynamic as over the last 10 years, future development will probably not be sustainable anymore. Clearly then, there are limits or thresholds for such improvements, after which the effects begin to work against the original intentions.

The Allgäu is a typical rural region which had to undergo many changes and adaptations in its history, and where living conditions were not easy until the middle of the twentieth century. Yet, in contrast to other regions in Europe, several factors have helped such that today there are relatively favourable conditions for sustainable development. One factor was that transition from the Blue to the Green Allgäu was not abrupt, but gradual. The textile industry did not collapse suddenly (within few years), so farmers more easily shifted their practices from cropping to livestock maintenance. This transition was enormously supported and fostered by pioneers such as Carl Hinbein and Johann Althaus who established innovative cheese making techniques in the Allgäu.

Another factor is that since the nineteenth century a certain amount of industry has always existed, so that at least some part of the population did not completely rely on agricultural production. This industry seems to have been able to adapt to new economic realities in changing from textiles to a more diverse and modern set of industries (e.g. high-tech firms, dairy farms, packaging industries, textile industries, machine construction). In addition, tourism became more and more important to the region, which generated a great deal of work in this sector either as full-time jobs, or in combination with agricultural activities. This combination of agriculture (in creating and maintaining the largest part of the present landscape) and tourism, in profiting from the high tourism potential of the region during summer and winter, seems for us to be one of the most important factors in determining that the Allgäu is better-off than other rural landscapes.

Another important factor is that with the change from the Blue to the Green Allgäu, the new agricultural products (in particular milk) were processed in the region and created a dairy 'industry' which is well-established today. These quality cheese and dairy products from the Allgäu have found a good market niche even beyond the region, but the producers are presently struggling with low milk prices. To help compensate, some of the dairy and cheese products produced and processed on the farms or in local dairies can be sold directly to tourists or the tourism sector (e.g. restaurants, festivities). Historically, and in most cases, the different alternatives that have fortunately been available for adaptation in the Allgäu have been indispensable in its continued drive for improved sustainable development.

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