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SUS-CHAIN

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Upländer Dairy

Case study report

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1 Introduction

1.1 Significance of this case study in the overall project

Sustainability as a scientific term was only applied to forest economy in former times. Nowadays, the term sustainability is used by every section of scientists, being thus, well associated with new food supply chains. It is not known, whether a convergence of the meaning of sustainable production and quality at different levels of different food supply chains in various European regions might occur. In Germany the Ministry of Consumer Protection, Food and Agriculture supports organic farming, especially the processors and the marketing of organic food. However, there are still many factors inhibiting the enhancement of sustainable food production. At the moment, it is not clear why some initiatives are successful and others never come up.

The international project “marketing sustainable agriculture - an analysis of the potential role of new food supply chains in sustainable rural development”, called SUSCHAIN, aims to compare the different initiatives in the European Community. For that reason, the singular analysis in the countries should be based on a uniform methodology (Brunori, Wiskerke, 2004).

The purpose of the project is to assess the potential role of food supply chains in the enhancement of sustainable food production and rural development by identifying critical points in food supply chains which currently constrain the further dissemination of sustainable production, and recommend actions that are likely to enhance the prospects for sustainable food markets. Specific attention will be given to factors related to the organisational structure of food supply chains and interactions between different stages of the chain. The study examines in detail the ability of the food chain as a whole to convey consumers’ expectations and civic values related to sustainability and food quality to farmers. The international comparison of different case studies on the retailer level will point out the needed structure of networks, regional identity and consumers’ opinion. This knowledge can be the background for future policy programs and financial support (Brunori, Wiskerke, 2004,Technical Annex of SUSCHAIN, P.2).

1.2 Characterisation of the Upländer dairy as a distinctive FSC

The Upländer dairy is one of the German initiatives that are investigated by the SUSCHAIN case study analysis. After closure by the mother company “Wuppertal/Köln e.G”, the Upländer dairy was bought up and put in operation by a co-operative of organic farmers and the community. At that time, the basic conditions of the German milk market were already characterised by concentration processes and an increasing market power of the large dairies. Therefore, the initial operation of the Upländer Dairy could be pointed out as an exception and at the same time an intention fraught with risk. It aimed to propose an alternative organic milk processing possibility to the regional organic farmers.

Nowadays, the dairy is in the black after the successful ascension. It is an unusual example of success in Germany, which has objectives orientated according to the sustainable basic principle. In this context, the relevant aspects are the promotion of sustainable production of food, the rural development, but also the development of an efficient organisation structure, which would contribute to the economic success of the dairy. The scaling up process is identified by its independence from public institutions, financial disintermediation and personal dedication, which cause several obstacles at the beginning of the dairy according to the initiators. Hereby, essential facts that play an important role on the SUSCHAIN project and the investigation of the Upländer dairy will be raised, in order to justify the chosen case study.

1.3 Data basis

The existing case study analysis describes the general market situation in Germany. Therefore, the processing sector, the traits of the German milk market and the consumer behaviour required for the comprehension of the case study will be identified. Thereupon, the representation of the Upländer dairy concerning the SUSCHAIN case study analysis will be carried out.

The report is based on internet and literature researches as well as on statistical sources and analysis of company documents. Previous research results of SUSCHAIN (work package 1 – work package 4) are integrated as well. In addition, interviews with key actors within and outside the Upländer dairy were carried out.

2 The context

The following chapter begins with a short characterisation of the general German food market situation: It will describe the current trends on the food market and the consumers' buying behaviour and set an additional focus on the processing level and the dairy sector's development. Afterwards, the chain will described as indicated in work package 1. Finally, an overview about the regional context in which the Upländer Dairy has to operate is given.

2.1 Characterisation of the food sector in Germany

2.1.1 Enormous concentration in the food system

In Germany, as in many other countries, the enormous process of concentration can be observed at all levels along the food chain. The concentration on the retail level is much more advanced than on other sectors. The increasing market power of big retail companies puts the processing and the agricultural level under pressure on a high degree. The food retail market continuously showed signs of a narrow oligopoly: sinking margins, price-centred competition and a fastening concentration (Knickel et al., 2003, p. 2).

In order to gain market power, companies have to displace competitors. Take-over and mergers lead to a decrease in number of companies, but their market power rises gradually. Small companies often get great financial problems or go bankrupt. This vicious circle passes through all levels of the food chain. An obvious example is the closing of many small-scaled abattoirs due to concentration processes, new technical standards and a market structures policy that actively supported - and still supports - scale enlargement and concentration (SCHMEH, 1997).

The result is a constant decline of farm numbers and a simultaneous increase in crop production areas and herd sizes per farm which has been observed at least since the 1950s. Small farmers are not able to fulfil the demand (price, bulk, high transportation distance) of processors anymore. Regional small processors, which were supplied by small farmers, vanish into thin air more and more. The loss of small and medium size processing enterprises in rural areas leads to less labour alternatives for rural populations, to higher marketing costs for farmers and to less flexibility in their marketing decisions. During the last decade, the number of farms has dropped by one quarter, whilst the number of farms with more than 100 hectares has doubled (Knickel et al., 2003, p. 2-3).

The concentration and industrialisation in one market level incites similar processes in others in a search of equal countervailing powers (PRAAST, 1997, cited by Knickel et al., 2003, p. 2). One negative side-effect of this development is the anonymisation of food and loss of transparency for the consumer (SCHÜMER, 1997; SEUFERT et al., 2000; PRAAST, 1997, cited by Knickel et al., 2003, p. 2). Another side-effect is the decreasing influence of agricultural producers on the functioning of mainstream food supply chains and in particular, on the distribution of value added along the chain.

2.1.2 The German processing level

The German processing level is characterised by a falling numbers of mills, dairies, abattoirs and breweries. Nevertheless, with the exception of oil mills, sugar plants, dairies, and abattoirs there are still an amount of medium-scale firms which are mainly threatened at all levels because of a dramatically price-centred competition and concentrating process (Knickel, WP2, 2004, p. 2). At the processing level, the 10 largest companies hold about 10% of the market and the market share of the top 100 is of about 40% (Praast, 1997; Anonymous, 2003; PRAAST, 1997, cited by Knickel et al., 2003, p. 2).

2.1.3 Importance of the price level

The large retail chains like Metro, Rewe, Edeka or Aldi had a strong competition, being basically price-centred. Food industries as well as farmers noticed the price decreasing at the retail level.
The consumers do not want to spend a lot of money on food, in spite of the high level of wealth (v. Alvensleben, 2000). While in 1970 about 25% of the income was spent on foodstuffs, in 2001 only 12,5 % was used for these purposes (Knickel, 2002). Food is – in relation to the household income – as cheap as in the 1960s. An inquiry run by the GfK (Institute for Consumption Research) indicated that the trend of product-pricing as a deciding influence has continued. In 2002, 62% (2001: 54%) agreed with the statement “Regarding food I pay more attention to the price than to the brand” (GfK, 2003; see Figure 1).

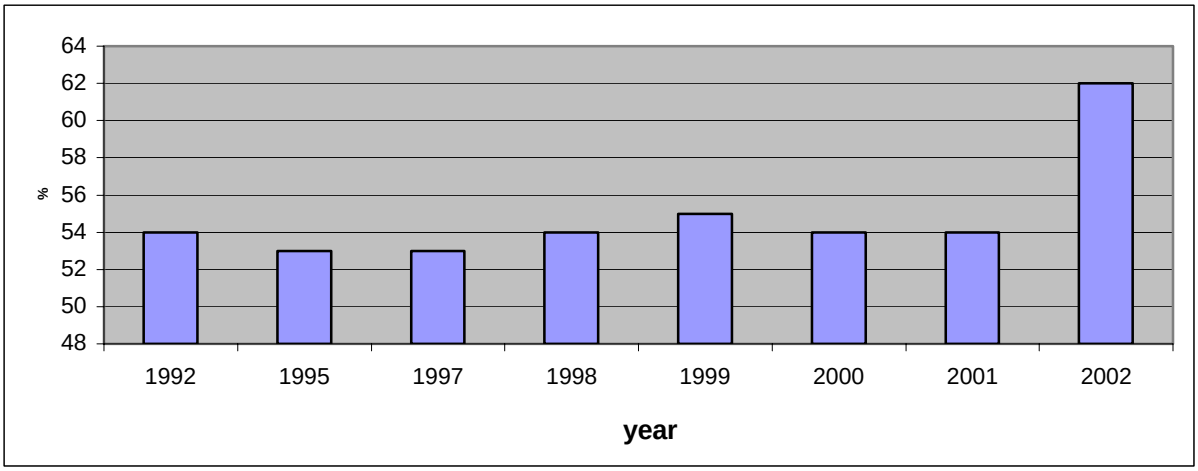


Figure 1: Consumers’ price orientation “Regarding food I pay more attention to the price than to the brand” - agreement. Source: GfK Consumer Scan (2003)

Regarding to the accepted additional charge for sustainable food products, the same development can be identified. In1989, the consumers on average accepted an additional charge of 21%, which was reduced to 13% in 2001 (see Figure 2).

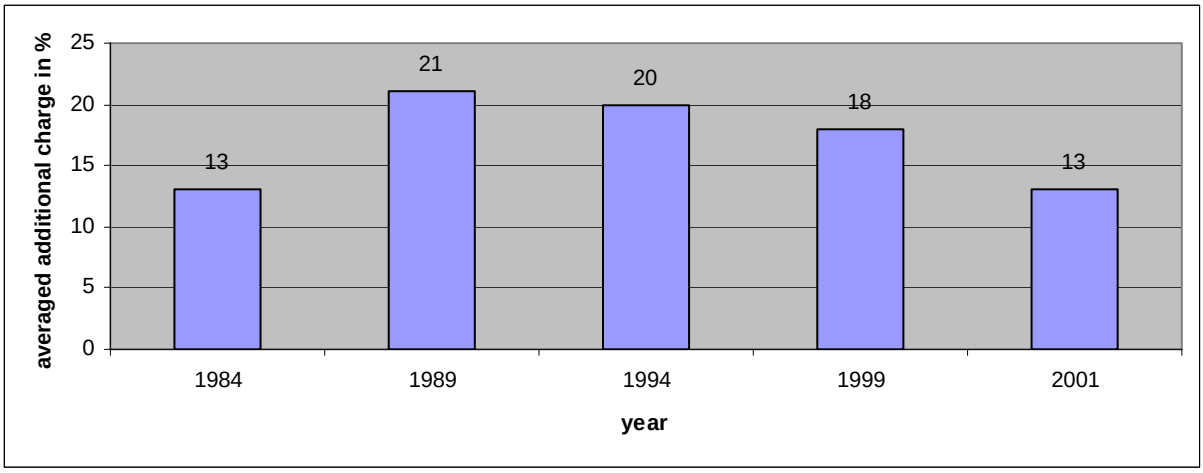


Figure 2: Average price premium accepted by consumers in % (source: Bruhn, 2001)

Committed consumers are less sensitive to price differentials and more likely to adapt to the inconvenience of making special trips to farms, farmers markets or specialist shops. Occasional organic consumers are less likely to change their shopping habits in order to buy organic. They tend to buy organic products if they are available in their supermarket and the price differential is not too large.

Many consumers associate a higher price with higher quality or rather expect a high quality product when more expensive. Therefore, they consent to pay a premium of 20 - 25% in average for organic products. If products are sold directly to the consumer, they are considered to be of high quality, even if they are not organic (Wirthgen et al., 1999).

2.1.4 General food consumption trends (from WP3 report)

2.1.4.1 Convenience

The convenience has become a long-term trend. An increasing number of people try to save time in their daily life, resulting in food trends favouring convenience products. They provide the opportunity to manage time and work in a more efficient way. Traditionally prepared meals are successively being replaced by fast food and ready to eat products. Every fifth German is strongly convenience orientated (GfK, 2001). Especially young singles until 35 years old purchase convenience food (60%) followed by the singles until 60 years old (55%) (Knickel, 2002).

The demand for convenience organic food is steadily growing. More than half of the young consumers wish a larger supply of products like frozen pizza with eco-quality offered in the supermarket. However, fresh convenience organic food is also in demand (Öko-Institut, 2002; Knickel, 2002).

2.1.4.2 Health

The demand for healthy products is also increasing (v. Alvensleben, 2000). Due to the high number of diseases caused by an unhealthy diet, people became more aware of the needs for "correct" nutrition. The market responds to this trend by offering functional food, which promises an added health benefit. These products supposedly contain healthy additives, such as special bacterial cultures. In 1998, about 60% of the Germans interpreted this relatively new procedure as helpful and reasonable (Knickel, 2002). The increasing demand for healthy products also goes hand in hand with the insight that a healthy lifestyle is the main motivation for purchasing sustainable food products. Halk (1993) found in a study on consumers' distrust towards conventional food an increasing interest for organic/alternative food products. There is a clear correlation between worries about food safety and the readiness to pay more for organic food (ZMP, 2002).

2.1.4.3 Low involvement and over-segmentation

The German population was closely related to agriculture during the shortage years (1930s, 1940s). The close relationship to farming relatives or farmers influenced the survival during and just after the war. The urban population started again an independent food supply in the towns and for that reason, people lost the close relation to agriculture. The direct links between agriculture and food consumption rapidly declined. Consequently, the lack of understanding of food and food production was growing.

In a complex consumption world, consumers' capacity to take up information about each product, that is object of more or less frequent buying decisions, is very limited. Food is, in general, part of the "low-involvement-products": consumers' readiness to absorb information on food is very limited. These products, object of daily consumption, are mostly chosen according to habits or spontaneous, situational decisions. At the same time, many segments of the food market tend to "over-segmentation": too many products, too many brands put the consumers in a choice-situation, where simple signals and codes are finally more relevant than the actual products characteristics.

2.1.4.4 Polarisation and multi-optional consumption

In the food market, as in other markets, a polarisation can be observed, that opposes more and more rather cheap, „bulk" products and expensive, luxury goods.

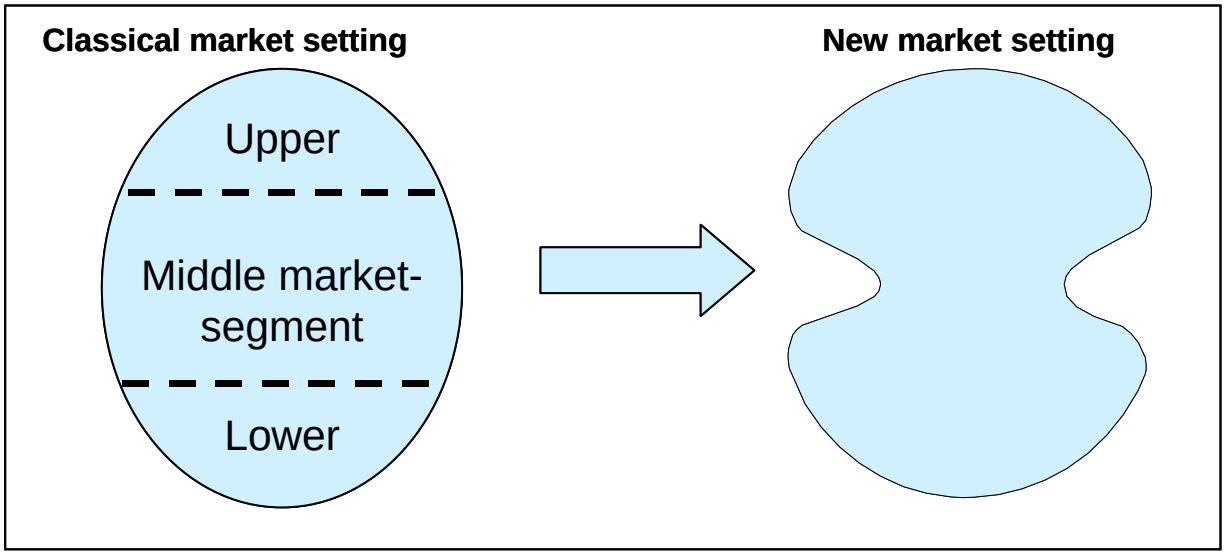


Figure 3: Market polarisation (source: Stern, 1992)

Consumption habits do significantly change: the „multi-optional" consumer is buying at the discounters and even as regularly as he is frequenting delicatessen shops or farmers' markets.

2.1.4.5 Trend toward regional and organic food

During the last decades, a steady growth of niche markets for alternative food (organic, regional, fair trade) has been observed. The nature and strength of this trend is still not free from contradictions. Regional food is mainly bought for freshness and quality reasons (Wirthgen et al., 1999). A growing interest for regional development and the micro-economic situation of rural areas is, as well, a mobile for buying regionally (Ziemann, 1999). The main motivation to buy "fairly produced and traded food" is the wish to support small producers in so-called developing countries (Krier, 2001; Valio-Ottowitz, 1997).

The quality of the products (freshness, taste, content of vitamins and minerals), as well as their practical use are more important for the consumers as the quality process or immaterial and so-

cial benefits. The quality process (e.g. regional or traditional production) is considered as a second class criteria, whilst social benefits (e.g. increased value added, landscape preservation or job creation) are described as hardly motivating (Ganzert/Burdick, 2002).

Recently, most organic customers consider health as the main motivating force. In Germany, the question whether consumers buy sustainable products for altruistic or egoistic reasons has been covered by several researches. In 1994, Prummer found that the “egoistic” motivation “health concern” was the consumers’ most important reason for choosing an organic product, followed by the “altruistic” motives “environment” and “better taste” was again “egoistic”: Such results were confirmed by Schaer (2001) later.

In 2001, Bruhn identified customers’ motivation for buying sustainable food. The study was based on five consumer surveys (1984, 1989, 1994, 1999, and 2001) concerning the demand for organic food. The motivation was firstly analysed in 1989. The consumers’ main motivation was not related to the protection of the environment or animals. In general, almost 60% of the 2000 interviewed people explained that their main reason for buying sustainable products was that they were healthier than others. In 1999, more than 60% named health as the primary reason (Bruhn, 2001). From 1989 until 1999, more than 10% pointed out “eco friendliness” as being the decisive factor. Until 1999, this was the second most frequent reason for buying eco-products. However, in 2001 the motive “better taste” (ca 11%) was more important then the “eco friendliness” (5%). The motives “better taste” and “less residues” were ranked together (over 10%). Bruhn included the motivation “healthier” and “few residues” in the new aspect “security motivations”, concluding that the desire to feel safe is the major reason for purchasing sustainable food products. Furthermore, the surveys indicated that protection of the environment has lost its relevance in this context. Altruistic values are not the decisive factor in buying ecological products (Bruhn, 2001).

This change in consumer orientation was also reflected by the association with the term „Bioprodukt“[1], discussed in the same study. In 2001, the most frequent answer was the association “healthy” named by 25% of the interviewed people. In 1999, this association was only the 5th most frequent given answer (11%), after “without chemicals” (29%), “natural food/artless” (19%), “without chemical fertiliser” (18%), and “biological cultivation” (13%). This ranking can be partly explained due to the “mad cow disease”, being thus, organic food considered to be less risky than the conventional.

Another interesting point showed by the statistic is that in 2001 the association “expensive” was cited three times as often as in 1999. This development coincides with the lower accepted price for sustainable food products.

In general, people connect positive associations with the item “Bioprodukt”. Especially components of the proceeding quality like biological cultivation or without chemicals were pointed out. Negative answers were rarely given (3.2%), whereas the association “expensive” should be added. It is important to remark that terms like "pleasure" or "taste nice" did not occur. From German consumers point of view taste does not seem to be a decisive factor regarding the ecologically sustainable products (v. Alvensleben/Bruhn, 2001).

[1] The German term „Bioprodukt“ is usually used to describe ecologically sustainable products and not solely those products which are labelled with the logo “Bio”, being thus, subject to EG regulations.

2.2 Characterisation of the German dairy sector

2.2.1 General situation in Germany

Milk processing is less concentrated in Germany than in other European countries. However, there are still about 108 dairies and 283 production sites (Knickel et al., 2003, p. 15; www.milch-markt.de, 2004). In the last years, the number of dairies and production sites has continuously decreased. In the southern part of the country, a relatively large number of small and medium scale dairies can still be found, even with the accelerated concentration process. There are, in general, three types of dairy enterprises (Knickel et al., 2003, p. 15-16):

- ❒ family owned firms;
- ❒ farmer owned firms (co-operatives);
- ❒ public companies.

A special form of governance are farmer-owned milk assembly co-operatives at regional level. They are, concerning the long-term-contracts, linked to dairies of their region and have influence on the price and volume decisions.

The German dairy sector underlies a structural change. Besides the distinctive structural differences between eastern and western Germany, the structural change shows a similar development. Since 1993, the number of dairy farmers has decreased by 50% in both regions (eastern and western Germany), and the number of cows per farm has proportionally increased. In 2004, there were 111,800 dairy farms in Germany. In 2003, a dairy farm had 37.1 cows in average (13 more than 10 years ago). In the last years, the average production of milk per cow has increased (up to an average of 6,537 kg per cow). The decrease of cow number corresponds to the annual advancing productivity. The per capita consumption of milk is 66,8 kg (ZMP, 2004). There is a decreasing tendency in the consumption of unskimmed milk, households meanwhile demand twice as much ultra high temperature treated. This trend could be observed since a few years (ZMP, 2004).

The organic milk production has continuously increased in Germany in the last years. According to the ZMP, the amount of delivered organic milk in the dairies increased from 60,000t in 1991 to 410,000t in 2003 for the commercialisation in the retail trades (www.lznet.de; Hollenberg-Koch et al., 2004).

58 dairies are specialised in processing organic milk, being 44% of the German organic milk processed by only four dairies: Andechser Molkerei Scheitz (market leader), Molkerei Rogge / Söbbeke, Küstenlandmolkerei Rostock and Milchwerke Berchtesgadener Land. 29 dairies are processing 95% of the organic milk produced in Germany (ZMP, ÖkomarktForum, Nr. 35, 27.8.2004).

Some dairies, such as the Hamelner Molkerei or Rhöngold, converted back from organic to conventional milk processing (REUTER, 2002, p. 4).

Since June 2003, the German branches of McDonald's have only sold organic milk from the dairy Andechser Molkerei Scheitz. The organic industry hopes to get new impulses and recognition (NATURKOST, 2003).

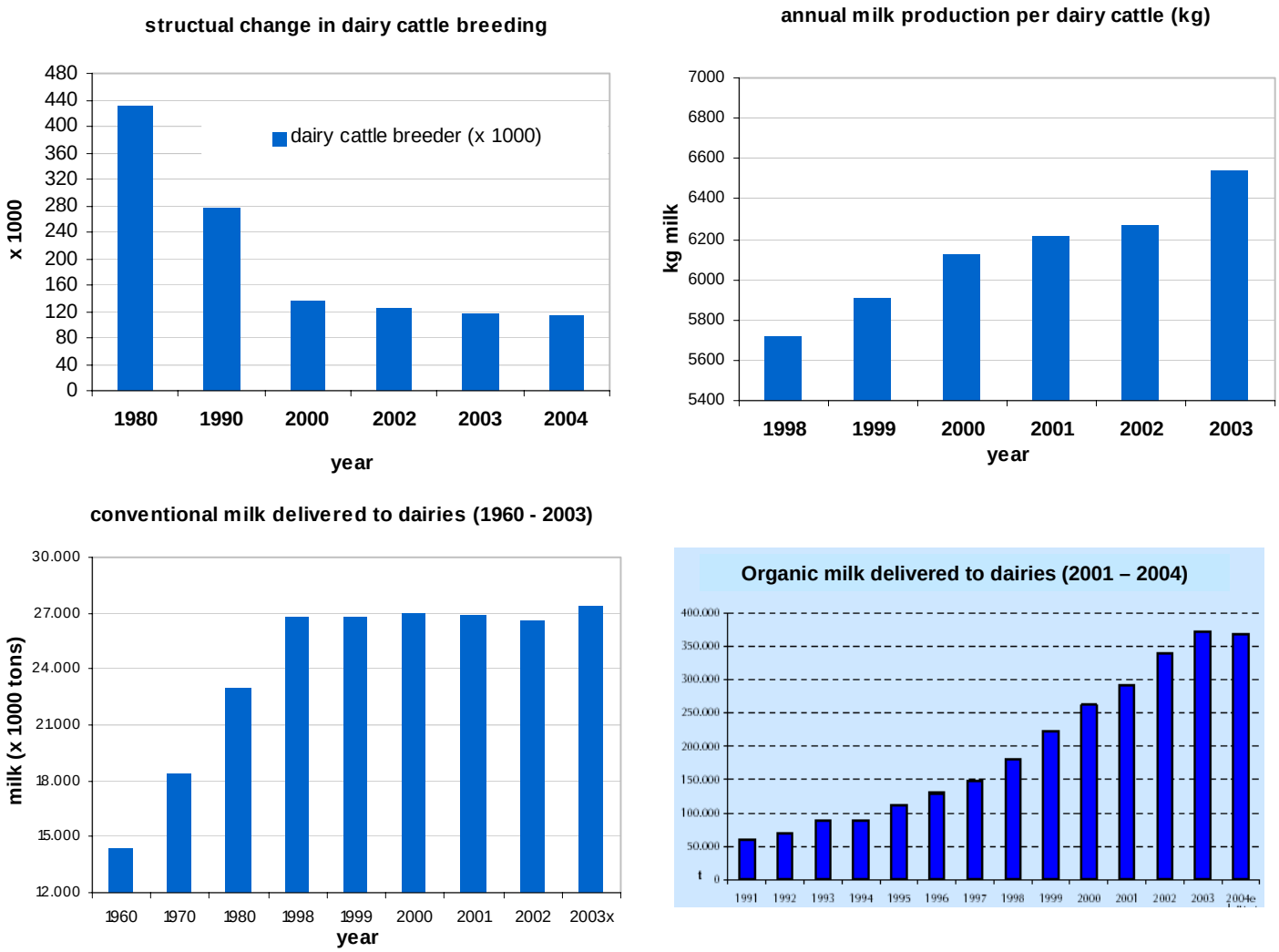


Figure 4: characterisation of the German dairy sector (source: ZMP, 2004/2005)

Table 1: the German dairy sector - an overview

	Conventional milk	**Organic milk**
Number of dairy cows (2003):	4,338,000	90,500
Average number of dairy cows per farm (2003):	37.1	8.1
Number of dairy farmers (2003 / 1999):	117,000	7,464
Annual average milk production per dairy cow (2003 / 2001/02):	6,537 kg	5,007 kg
Production bulk (2003):	27.5 million tons	410,000 tons
Imports (value of unskimmed milk, 2003):	8 million tons	**not available**
Exports (value of unskimmed milk, 2003):	8.3 million tons	**not available**
Average price per kg (2003):	29.9 Cent	35.2 Cent
Per-capita consumption	334 kg	**not available**
Degree of self sufficiency	101%	**not available**

Source: ZMP, 2004/2005; Rahman et al., 2002

2.2.2 Prices

The present situation on the milk market is very difficult. During the last four years, dairies have often paid high prices for milk in order to attach farmers to their production sites. This competition for volume, that reached its peak in 2001, brought high prices for farmers during a short period, but the financial power of many small and medium scale dairies got exhausted, making them an ”easy prey” for the big players (Knickel et al., 2003, p. 16).

In 2002/2003, milk prices fell dramatically resulting in an accelerated decrease in number of milk farms. The structure of the market is fragile and a rapid concentration process might lead to the closing down of production sites. As a consequence, a general increase of milk assembly costs can be observed, affecting mostly the organic farms, which are more dispersed than the conventional ones. These factors could deepen the gap between conventional and organic consumer prices for milk and dairy products and, thus, making the alternative FSC products less attractive (Knickel et al., 2003, p. 16).

Prices for conventional milk

The German dairy sector was mainly characterised by a high offer in 2003, reaching the peak with 27.5 million tons of delivered milk since the German Unification in 1990. As a result, the dairy farmers had to accept a reduction of payments per kg for the second time. The average payment decreased to 29.9 Cent / kg milk (with 4.2 % fat and 3.4% protein), a difference of 1.4 Cent / kg milk compared to the year before.

Prices for organic milk

Prices for organic milk have been recorded since 1999 by ZMP. In general, the price was calculated as the result of the conventional price per kg milk as a basis, being the extra-pay for organic milk added. In 2003, the price of organic milk was 35.2 Cent/ kg, corresponding to a decrease of 0.7 Cent / kg compared to the year before. The prices paid to the organic dairy farmers differ between the supplied dairies: There is a range of 33.2 to 38 Cent / kg for organic milk (source: ZMP, 2005).

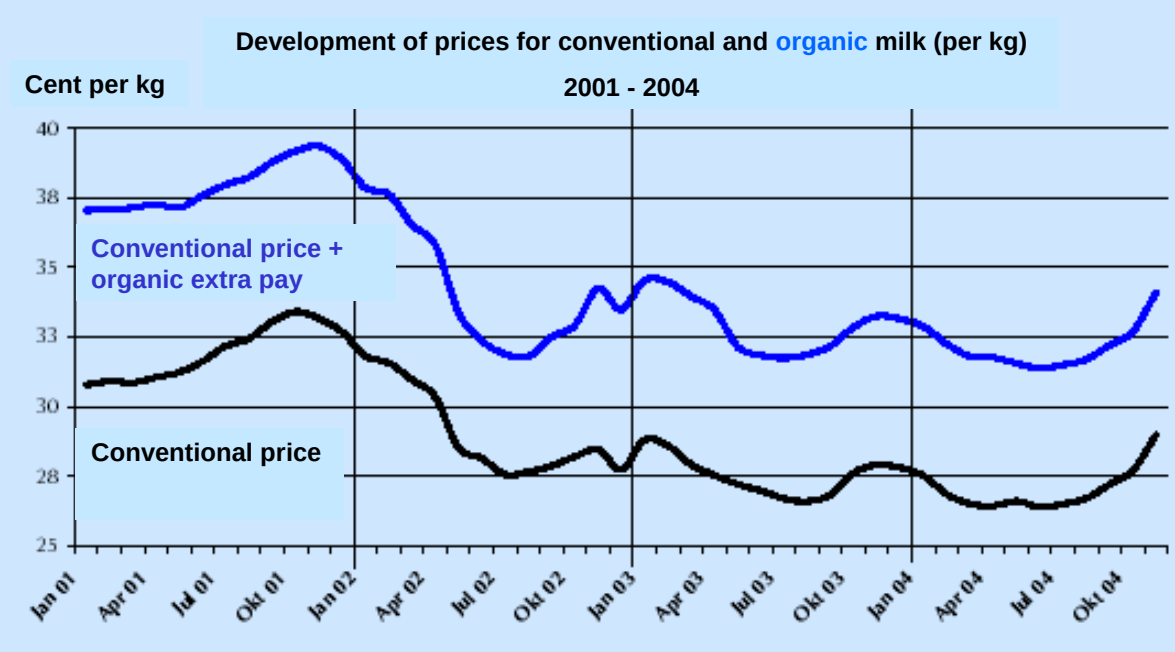


Figure 5: development of prices for conventional and organic milk (per kg) 2001-2004 (source: ZMP, 2005; modified by Strauch)

Compared to the year before, the price distance between conventional and organic milk rose from 4.5 to 5.3 Cent / kg. The difference between the payments for organic and conventional milk increased mainly at the level of organic extra pay. Because of the surplus of organic milk throughout the EU, about 8% of the produced organic milk had to be commercialised as conventional. There is a pressure on the prices in Germany, mostly due to the import of organic milk from Austria and Denmark. In these countries, the ecological standards are not as high as in Germany, and because of this, the production and consequently, the products are not so expensive (www.lznet.de, 2003). The WTO aims to cancel the protection measures for import and export. Nevertheless, according to the ZMP (2005) the future and downward price trend of organic milk should be considered. The commercialisation of organic milk through the spot market contributes to its price lowering. The surpluses are traded between the dairies for low prices. The organic dairy products made of this low-priced milk additionally draw the market prices downward (Bioland, 2004).

2.2.3 The market situation for organic milk

One of the major bottlenecks in alternative FSC in the dairy sector is the lacking of a real 'big player' with enough weight to compete with the huge dairies of the conventional sector. At the moment, even the relatively large organic dairies Scheitz or Söbbeke struggle for their market positions in conventional supermarkets. An important player on the organic market, the innovative Rhöngold dairy, had to quit its organic milk production in autumn 2003 after a tough price war with another organic dairy (Andechser Molkerei Scheitz):

Rhöngold was a subsidiary company of Starmilch eG from Fulda. It was responsible for the production of Rewe sort “Füllhorn”, losing this contract after a hard price competition to the Andechser Scheitz dairy. In 1994, Rhöngold began to operate as a organic dairy, decreasing the production amount of 25-30 million kg in about 50% after the loss of Rewe. After that the dairy gave up processing of organic milk and partly processed its organic milk in job order production from the Upländer dairy (www.lz-net.de, 2003). Rhöngold/Starmilch distributed these organic products mostly through to the retailer “Kaufland”. But then this retailer placed the supply contract to a cheaper dairy in Austria, finishing the trade relationship with the Rhöngold/Starmilch as a supplier and the Upländer dairy as a job order processor (Artzt-Steinbrink, 2005).

2.2.4 Institutions, organisational forms and governance

Co-operatives have a great importance in Germany. About 65% of the milk brought to dairies in 2002 were from co-operatives (Raiffeisen, 2003; cited by Knickel et al., 2003, p. 17).

The CMA (Central Marketing Organization for German Agricultural Industries) has an important role in promoting the marketing of milk and dairy products. With the slogan *“Die Milch macht’s”* (the milk makes it) CMA advertises the taste and lifestyle of milk. The aim is to show the consumers how milk can taste different and be used for different milk recipes. CMA sponsors sport events, such as the German tour 2003, the marathon of Bonn, or cultural events, e.g. the *Berlinale,* in order to promote milk and dairy products (CMA, 2003; cited by Knickel, 2004, p. 17).

The *Verband der Deutschen Milchwirtschaft* (German Association of Dairy Farmers and Processors) is an association to support and promote German dairy products, being also the mediator between the dairy producers and the administration of the federal states (VDM, 2003; cited by Knickel et al., 2003, p. 17)[2].

[2] Many other associations are involved in dairy marketing and food supply chains related to milk: The *Deutscher Bauernverband e. V.* (German Farmers Union), the *Gemeinschaft der Milchwirtschaftlichen Landesvereinigungen* (an umbrella organisation for all federal states level associations related to milk production and processing), the *Deutscher Raiffeisenverband*, the *Verband der Landwirtschaftskammern*, the *Bundesverband der Privaten Milchwirtschaft*, the *Deutsche Landwirtschaftsgesellschaft*, the Verband für handwerkliche Milchverarbeitung im ökologischen Landbau e.V. (specifically dealing with the processing of organic milk), the *Arbeitsgemeinschaft Deutscher Rinderzüchter e.V.*, the *Milchindustrie-Verband e.V.*, the *Bundesverband der Vorzugsmilcherzeuger und Direktvermarkter von Milch und Milchprodukten*, and the *Bundesverband Molkereiprodukte und ZV Deutscher Milchwirtschaftler* (VDM, 2003).

2.2.5 Areas exhibiting dynamism in terms of being sustainable or alternative

The fresh milk and the cheese market are considered to be not well developed by German dairies (see for example an expert study by the Wissenschaftlicher Beirat beim BML, 2000; cited by Knickel, 2004, p. 17).

Particular dynamism in terms of sustainable or alternative initiatives can be often observed in the organic and/or regional production. The largest German (and European) organic dairy, Scheitz, is a family-owned enterprise that succeeded in establishing its products in the German retail. Nevertheless, the organic milk is not exclusively processed by small and medium dairies. The Müller AG, a global player on the milk market, engages with two of its production sites in the organic sector and produces yoghurt for the British organic market as well as cheese for a regional marketing initiative in Bavaria (Knickel et al., 2003, p. 17).

A farm-level development characterised by particular dynamism is the farm-level processing, bottling and direct marketing of milk (mostly organic), usually small scale technologies for pasteurising and bottling fresh milk. This is then sold directly to consumers (by home delivery services) or to local (organic) food stores. Using modern delivery logistics and putting forward the regional aspect in their communication policy, they succeed in being competitive (Knickel et al., 2003, p. 17).

2.2.6 Sustainability and transparency of the current structure

Extensive milk production forms tend to be relatively disadvantaged economically in the present economic framework conditions. Particularly the grazing of dairy cattle and extensive pasture management is less competitive than in-door-keeping and intensive feeding (maize silage; cheap feed stuff based on cereals and imported soybeans). As a result, extensive milk production forms have considerably lost market shares in the last 3-4 decades (Knickel et al., 2003, p. 18).

The transparency of the current processing and marketing structures appears relatively limited in the milk sector, being the main reasons the mere complexity of the sector, the still very large number of actors (private, state and mixed), the substantial regional differences, and presumably the lack of sufficient and clear labelling rules.

A particular deficit in the organic milk sector is the lack of adequate (regional level) processing possibilities.

2.2.7 Consumption trends regarding organic milk and milk products

In 1995, in general the consumers were positively adjusted to conventional milk, as shown by a study about the consumer's opinion about organic milk (v. Alvensleben, 1995). Milk was cited to be a healthy product, with no differences between traditional and organic milk being pointed out. Additionally, consumers were not aware of the differences in the production and feeding procedures of conventional and organic milk.

According to the results of the study, in 1995, the barriers in buying organic milk were its difficult availability through supermarkets as well as the its high prices (v. Alvensleben/Ziehlberg, 1995). The turnover of organic milk increased continuously in the following years due to its better availability, the BSE crisis having a significant effect on the turnover in 2001. In this year, the turnover of organic milk doubled and increased to 39.7 million litre (ZMP, Jahrbuch 2005). The increasing interest led to the stepwise introduction of H-milk as well as the introduction of the label BioBio in the retail trade PLUS. The inquiry was damped due to the nitrofen affair in 2002 as well as the uncertainty in the employment situation (ZMP, Jahrbuch 2005).

The retail trade is the most important channel of distribution for organic milk and organic milk products, being about 60% of the organic milk, 86% of the organic UHT-milk (ultra high temperature treated milk) and 72% of organic butter commercialised through the retail trades.

Another study showed that the consumers of fresh milk, which is from explicit regional origin, are ready to pay more for this product and even more for organic milk (Schöder/Burchardi, 2004; www.lz-net.de, 21.4.2005). The rural population would accept a markup for regional conventional milk of 14.39 Cent pro litre, whilst the urban population would pay 10.5 Cent more. When the or-

ganic milk is labelled as “regional”, urban population is ready to pay even more (in average 17.69 Cent pro litre) and the rural population, 32.83 Cent (Schröder/Burchardi, 2004; www.lz-net.de, 21.4.2005).

The results showed that the publicity measures should be designed to the quality and freshness of the products, as well as the support of regional milk producers and dairies, whilst the environmental aspect plays a secondary role (Schröder/Burchardi, 2004).

2.2.8 Description of the chain

The next figure shows the vertical trade structure in the German market for conventional and organic milk and milk products.

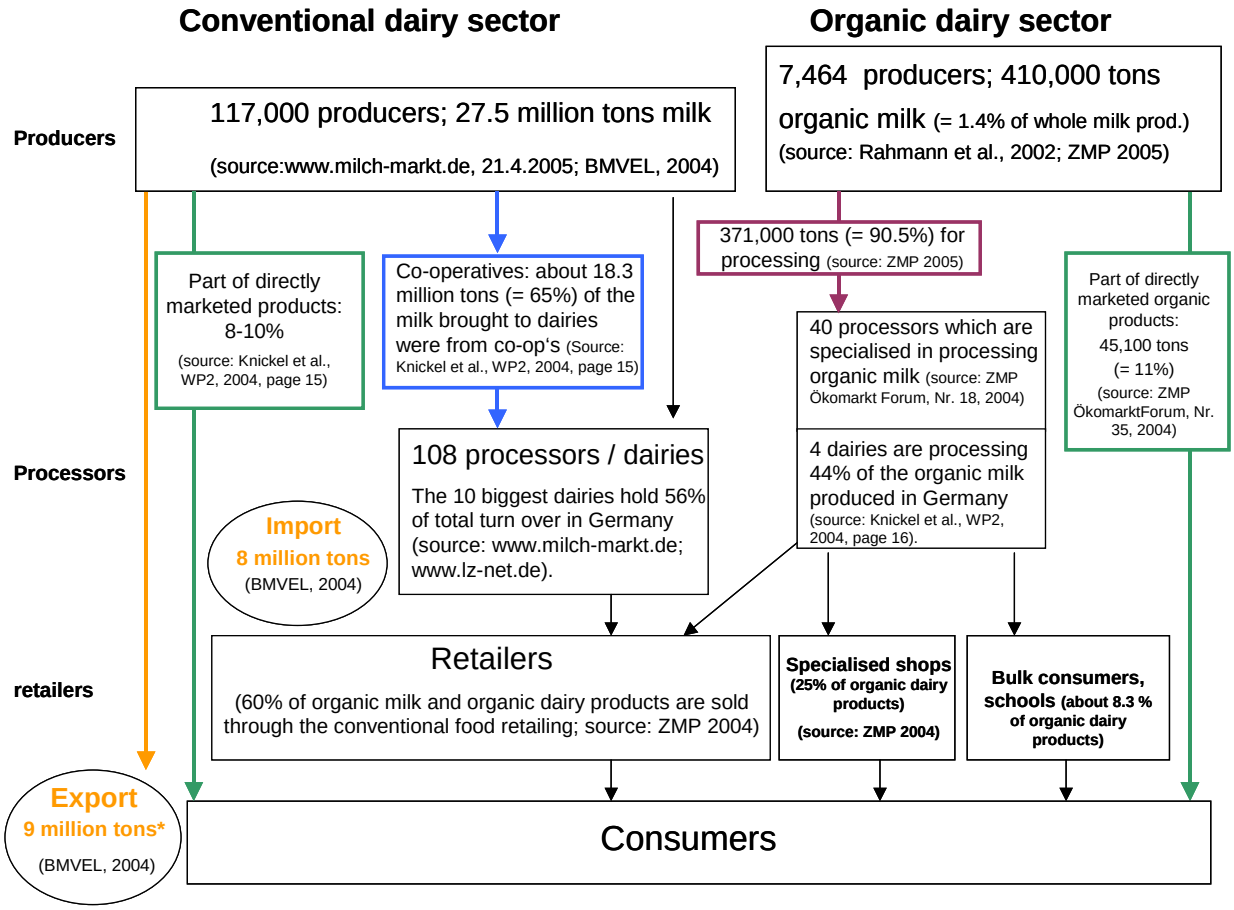


Figure 6: description of the chain (figure by Strauch, 2005)

2.3 Characterisation of the regional context

2.3.1 Structural characterisation

The case study is situated in the region called “Upland”, located in northern Hesse, in an area of 600 to 848 m altitude, being therefore, described as a typical low mountain range region (Bock, 2005). The climate is humid and cold, with an annual precipitation between 800 and 1300 mm. The annual average temperature is between 5° and 6°C (Knebel, 1995). The region is not appropriate for soil use as an arable land, being described with 11 until 50 soil points and used mostly as grassland (75.7%) (Knebel, 1995).

The Upland is a structurally undeveloped region in Hesse, since it is not surrounded by an industrial area (Artzt-Steinbrink, 2004). A larger supra-regional traffic that connects to the industrial area goes around the Upland (Knebel, 1995). Wilke (2005) stated that a part of the population work in more developed and industrial areas, such as Kassel or Fulda. One of the most important employer is the Continental Reifenwerk (= processor of tires) in Korbach and Brilon (Wilke, 2005).

The development of tourism in the region led to a change in the agricultural structure (Knebel, 1995, Wilke, 2005). At the beginning (beginning of the 20th Century), tourism represented an extra income source. The meaning of tourism increased with the infrastructure development in the region, being an alternative to agriculture in the Upland region (Knebel, 1995).

2.3.2 Development of dairy farming

After the Second World War, dairy farming became the most important agricultural production line in Upland. However, since the fifties, the number of dairy cattle farms has decreased by about 90% in Usseln (mostly in small villages), the Upländer dairy’s headquarter (Knebel, 1995). According to Knebel (1995) the major reason was the structural change as well as the missing yard successor.

In the last decades, there has been a significant concentration in milk processing and marketing and, simultaneously, a retreat from less favoured areas (LFAs). While farmers in LFAs receive particular support, it is the lack of milk processing, effective marketing and, in addition, the continuously decreasing prices in conventional channels, which discouraged several younger dairy farmers and potential successors (Knickel, 2004). A significant number of farmers have converted to suckler cows and higher quality beef production. Despite of this latter adjustment, a significant decrease in income and employment in LFAs can be seen.

The Upländer dairy was created almost at the same time as the development of the infrastructure and the first structure for tourism began.

In 1898, a co-operative of 35 milk farmers in Upland founded the first “Upländer Gebirgsmolkerei” (Upland’s mountain dairy), with an initial production of only 500 litres per day. Until 1968, the number of farmers reached 1100, supplying about 20 million litres per year to the modernized production site (Jasper, 1997). In the following years, mergers with several small neighbouring dairies led to further scaling up and growth, leading thus, to the close down of several small dairies.

Further mergers and co-operation with sales partners should enable the commercialisation through the “concentration of offers”, “production adjustments”, “improvement of revenue” and “reduction in costs” (Knebel, 1995). The concentration process, which also occurred in Upland, led to the acquisition of the Upländer in 1994 and the close down due to rationalisation in 1996 by a larger dairy (Wuppertal/Köln e.G). The close down of the dairy resulted in losses of jobs and the processing possibilities for regional milk producers.

2.3.3 Conclusions

Important conditions at the regional level:

- Area with marginal production conditions for agriculture; decline in agricultural activity, income and employment,
- Underdeveloped region with unfavourable connections to long-distance traffic,
- A great meaning of the tourism within the region,
- Commuting is very important; little new employment within region; little income alternatives,
- Concentration process in the dairy sector (closure of small enterprises, mergers, increase in the delivery routes and transport costs, increasing cost pressure, loss of regional trade structure).

3 Objectives of the initiative

The following chapter begins with a short presentation of the Upländer Dairy. The formation, development, as well as the aims and strategies to the problems and basic conditions were described in chapter 2. Afterwards, the dairy will be presented in the international context, in order to compare these basic conditions in other European countries. Besides the similar market conditions (concentration and stress of competition), one can observe in other European countries initiatives like the Upländer dairy that try through the use of alternative commercialisation, differentiation and other strategies in order to avoid competition and to establish themselves in the market. Those examples in the milk sector will be investigated by the SUSCHAIN countries, which will be elucidated at the end of this chapter.

3.1 Description of the studied FSC (Upländer dairy)

The Upländer Dairy is considered to be an outstanding example which built up a successful strategy in producing and marketing of regional dairy products. The dairy was founded in 1996 when a co-operative of 18 organic dairy farmers ("dairy farmers´ co-operative Hessen w.V.) searched for a suitable processing site for their milk. At this time, only a small part of their premium organic milk was processed and could be sold as organic. Firstly, the farmers worked with a small private dairy that assumed the processing of the organic milk, whilst the marketing of products was done by the farmers´ co-operative itself. However, the product quality deviations and deficiencies led the farmers to think about new processing alternatives, coinciding with the occasion to buy the local Upländer Dairy, which was closed down by its mother-company "Wuppertal/Köln e.G." in 1996. The Upländer dairy was idle but fully equipped at that time. Several governmental and non-governmental initiatives were activated and committed in the implementation of the project (Jasper, 1997; Artzt-Steinbrink, 2004).

After the hard-won but successful take-over and start-up, the dairy could continuously increase the processing bulk of organic milk. Due to to the increase in distributions through natural food wholesalers and supermarket chains (of dairy products the dairy's organic production grew from 1 million (in 1996) to 14 million kilograms in 2004. Meanwhile, 80 regional farmers supply organic milk. Nevertheless, the Upländer Dairy still buys conventional milk in order to reach the full plant utilisation (in 2004: processing of 5 million kg conventional milk per year).

The company built up a noticeable regional alignment and regional "affiliation" (Artzt-Steinbrink, 2004; www.bauern-molkerei.de, 2004), establishing a high quality, regional and organic assortment in the market which is promoted with the slogan "every litre of milk contains a beautiful piece of the region" (Knickel, 2004). Consequently, the regional origin of the products is clearly communicated to the consumers. There are also many efforts in marketing the organic assortment. Besides, the company sets value on a continuous consumer's information about the product quality, origin and transparency. In business processes the company wants to co-operate as good as possible within the company and with other organisations and aims to use resources sensibly.

The Upländer Dairy fulfils the sustainable criteria. Its regional alignment, organic engagement and quality orientation are connected with sustainable objectives, trying to face actual problems as mentioned in chapter 2, e. g.

- improving the sustainability and the liveability of the rural areas,
- using territorial and local resources,
- raising regional attractiveness and supporting tourism,
- attending a fair distribution of value added to the actors of the chain,
- supporting the rural economy by defending and conserving employment and income,

- enlarging high quality, regional and organic assortments,
- developing and strengthening new institutional forms like farmers co-operatives, non-profit associations
- building up consumer involvement, stimulating participation, recognizing “food citizenship”,
- assuming capital resources and supporting sustainable activities by founding a stock corporation (“organic farmers investment AG”)
- avoiding long transport distances and “food miles”, no supporting of globalized structures

The dairy continuously raised its processing quantity and efficiency according to the increasing marketing activities and sales (Jasper, 1997; Artzt-Steinbrink, 2004). Generally, it is considered as a tremendous success in terms of establishing a high quality, regional and organic assortment in the market. Rates of increase in turnover and prices paid to farmers have been remarkable (Knickel, 2004). The aims of the dairy is to continuously decrease the processing of conventional milk and to increase the amount of organic milk. Thereby, the processing activities in the dairy should be simplified. The separation of the equipments for the processing of conventional and organic milk as well as the costly purification process would be cancelled. As showed in Figure 7, the amount of processed organic milk has increased since 1996 until 2004, when the dairy started to operate. On the other hand, the amount of conventional milk has decreased since 1997.

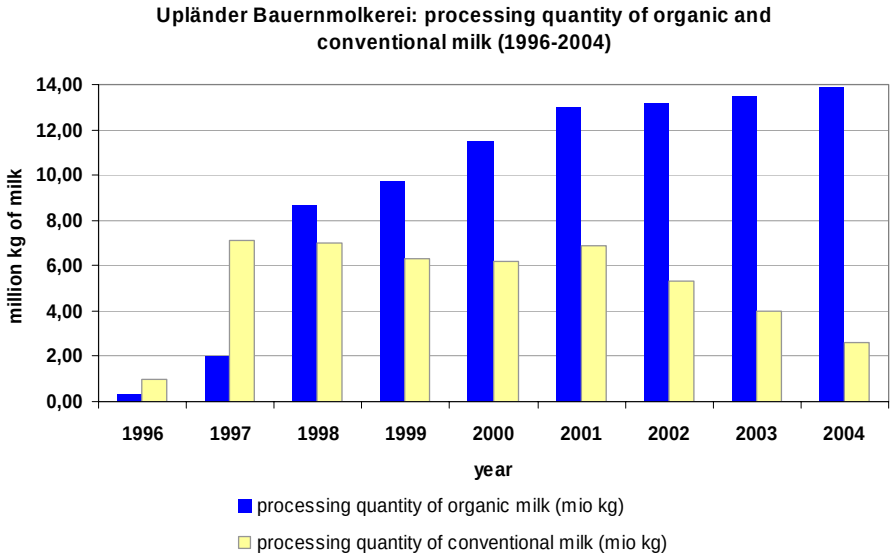


Figure 7: processing quantity of organic and conventional milk (source: Artzt-Steinbrink, 2005)

Due to the increasing processing amounts and sales potential, the dairy obtained a yearly increase in its turnover since the beginning of its operation (see Figure 8).The maximum turnover was reached in 2001 with 11.9 Million Euros. This increase in turnover might be related to the BSE crisis, leading to an increase in the demand of organic milk.

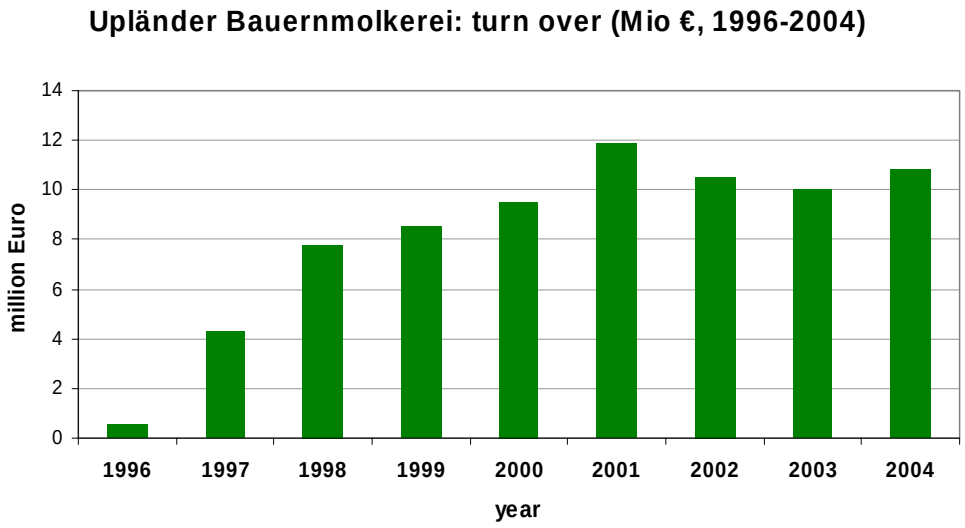


Figure 8: development of turn over 1996-2004 (source: Artzt-Steinbrink, 2005)

The company has a clear regional grounding. The main sales area covers the eastern parts of Westphalia and the north of Hesse – more precisely it covers a range of 80 km within the sold products. Figure 9 points out the product flow of the Upländer Dairy.

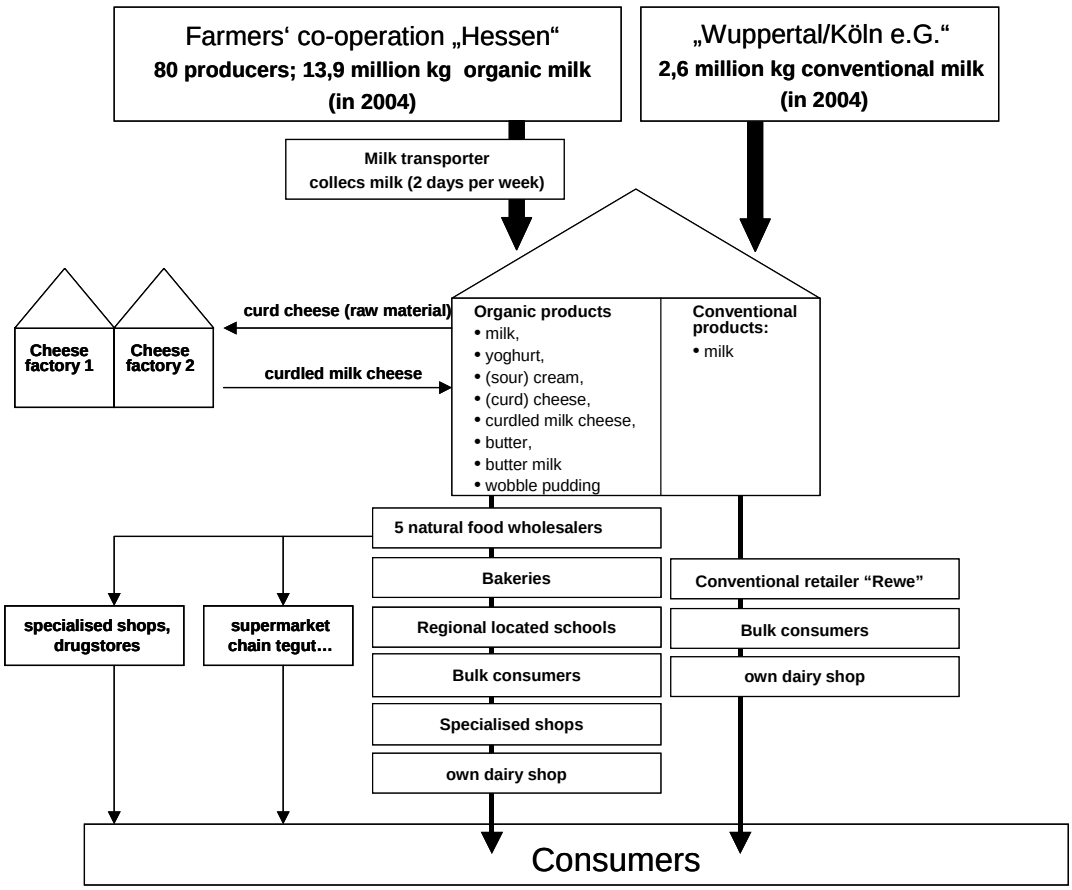


Figure 9: the product flow (Artzt-Steinbrink, 2004/2005; www.bauernmolkerei.de)

3.2 The Upländer dairy among national and international competitors

In many countries of the EU, there are large amounts of organic milk sold as conventional (van Huylenbroek, 2004; Knickel, 2004; lz-net, 2004; Kirwan, 2004). They have to struggle with high amounts of milk surplus (conventional/organic), which results in a tense market situation. In general, prices for conventional and organic milk are under pressure: Levels of concentration in farming and processing will increase, being for many producers the price for their milk below the production costs (Knickel, 2004; Kirwan, 2004; lz-net, 2004). Germany and Denmark noticed the highest amounts of organic milk in 2004. According to this situation, lot sizes of organic milk are decreasing. Besides, sales problems arise from the loss of export markets and increasing competition through imports (ZMP, ÖkomarktForum, Nr.22, 28.5.2004).

The dominant economic force is caused by competition in a highly competitive market place (Kirwan, 2004). The general trend towards globalisation enforces this situation – as in many other European countries, the German milk processing level cannot avoid this development, suffering thus from a rising cost pressure (www.milch-markt.de; 2004). In many countries, there has been a marked shift of power from producers and processors to retailers (Kirwan, 2004). Many supermarkets deal with 'preferred suppliers', whereby suppliers are obligate to follow their standards and specifications in order to have access to these markets. Therefore, processing companies are forced to rationalise by centralising their production in more efficient sites and merging with other processors in order to become more competitive.

The same development has also been observed in the European dairy market (van Broekhuizen et al., 2004; Kirwan, 2004; van Huylenbroeck, 2004; Knickel, 2004). In several countries, large retailers are supplied by leading dairy companies in order to reach demanded prices. However, the milk price for dairy farmers is dependent on the results of the dairy industry. In case of disappointing results (a low price), the switch to another processor becomes more difficult for dairy farmers (van Broekhuizen et al., 2004). In 2002, Germany's largest processor of organic milk (Scheitz) cancelled supply contracts with organic milk farmers due to financial deficits. The farmers were forced to search for new suitable processing sites in one week (Murmann, 2003).

Whilst the concentration of the major retailers has a tendency to push towards greater industrialisation of the supply chain, it also forces producers to seek added value options, for example, by processing and marketing through alternative supply chains. In almost all of the countries, there are a large number of small and medium sized enterprises, micro-businesses and small farmers, which form an almost dualistic industrial structure (Kirwan, 2004).

For example, some organic dairy farmers in Flanders opted to found their own co-operative. "Biomelk Vlaanderen" was established in February 2003 and represents 23 organic farmers with a combined production of almost 6 million litres of organic milk per year. The aim is to organize the co-operative processing and marketing of milk and dairy product (van Huylenbroek, 2004).

In the Netherlands, there might be new market opportunities for smaller industrial dairy processors that are more flexible in their processes. For example, the co-operative CONO wants to pay an extra price to farmers with cows grazing in the field (van Broekhuizen, 2004, quoted on Schans et al, 2002). At the farm level, there are small collectives, e.g. Waddengroup, which try to develop market concepts based on differentiation of milk-flows (van Broekhuizen, 2004).

In Latvia the dairy sector is one of the key sectors in agriculture, although the milk producing farms´ efficiency is still low. Small sized milk producing farms and small number of dairy cows in farms are the major problems in this country. At the same time, there is a process of structural reform and rationalisation of the dairy sector, increasing quality requirements and competition. In 1996, the dairy farmers´ co-operative "Rankas piens" was founded (from a state enterprise for producers' co-operative) and has experienced evolution into an important regional dairy.

In Germany the Upländer Dairy distinguishes itself by establishing and following its own strategic line. In 1995, a co-operative of 18 organic dairy farmers, the co-operative Hessen w.V., bought an idle dairy building and started to process their own produced organic milk. Due to the actual market situation, several small or medium scale dairies quit their independence by merging with lar-

ger processors. Therefore, it is an extraordinary and innovative initiative to start it up again during this difficult time, taking a high risk.

The co-operative established a high quality organic and regional assortment by increasing the initiative. These assortments are mainly distributed within an ambit of 80 km (www.bauernmolkerei.de, 2004). The products are promoted with a clear regional affiliation which was one of the crucial factors assumed by retail companies. Despite of the difficult competition situation, pressure on dairy prices and concentration, the Upländer dairy still tries to follow its strategic alignment in spite of dependence on retailers.

4 The Story of the Upländer dairy

Sections 4.2 and 4.3 are about the story of the initiative subdivided into four stages: "problematisation", "interessement", "enrolment" and "mobilisation". (BRUNORI, G., WISKERKE, H., 2004). The following part contains the problems of the initiative at the beginning of the development. In this stage the personalities of the starters are important. The genesis of the problem the Upländer dairy had to resolve will be shown.

4.1 Identification of the starters

The initiative started mainly from the awareness of the dairy farmers' co-operative "Hessen w.V."[3] and its current executive director about the opportunity to build up an own processing site which would save and support employment and income of regional organic dairy farmers. In order to better understand these considerations and chances to put in operation its own dairy, a short retrospection until the foundation of the producer organisation will be made.

The co-operative was founded in 1986 by eight organic dairy farmers from the region. The access was easy for other farmers involved in the organic milk production. The reason for the merger mainly consisted in searching for processing possibilities for organic milk together as a producer organisation, since previously organic milk could only be commercialised as conventional milk. As a co-operative, the producers aimed to bundle the milk and to act as "one" distributor. Mrs. Artzt-Steinbrink was employed as director and assumed the management of the co-operative. As a region-based organisation the farmers aimed and still aim to support local quality production and to achieve an adequate distribution of organic milk and organic dairy products.

In 1987, the Sachsenberg dairy agreed to process the milk of the organic farmers in a wage process, being the products commercialised by the producer organisation itself. The co-operative expanded to 18 farms, producing altogether 2 million litres organic milk processed by the Sachsenberg dairy. Thereby, the co-operative Hessen w.V. desired to increase its processing amount of organic milk. However, the limited processing capacity of the Sachsenberg dairy did not permit an increase in the quantity and thus, no further organic milk producers could be admitted in the co-operative. Because of this, organic farmers, who were interested in a possibility of organic milk distribution must wait for an opportunity. Among these farmers was Josef Jacobi, who is considered to be the main initiator of the initiative to take over the Upländer Dairy.

The co-operation with the Sachsenberg dairy showed other problems than the limited processing capacity for the co-operative, such as the lack of future prospects. The future control of the dairy was uncertain, since the actual executive board was getting retired and there was no successor. Furthermore, divergences in the quality of the production process of organic products must be over and over determined. So insecure prospects of an upgradeable co-operation with Sachsenberg dairy, discontentment about market situation and difficulties to sell organic milk as "organic" led the farmers to search for new processing alternatives and to obtain control of the closed Upländer dairy in 1996.

The evidence of a possible take-over of the closed Upländer dairy through the agricultural office quickened interests and stimulated the co-operation about regarding the possibility of processing and commercialising independently of other dairies. Additionally, the take-over of the dairy implicated in a larger amount of processed organic milk, giving further organic farmers new processing possibilities. In 1996, the building and its plant and equipment could be bought and put in operation. Starters of the initiative were the farmers' co-operative Hessen w.V., but also public institutions and people financed and assisted this project. Josef Jacobi (current executive director of Hessen w.V.) played an important role in this process through his personal dedication and com-

[3] Before the Upländer Dairy was started up the farmers' co-operative was called "Waldeck w.V.". In the 90ies the co-operative changed its name. For understandability and to ease the reading process the current name of the co-operative will be used.

mitment in the implementation of this initiative. As already mentioned he is considered to be the main initiator of the initiative and key person concerning its success, since he was very involved with the dairy, making several efforts to accomplish the project (Artzt-Steinbrink, 2004).

Jacobi also inherited the family-owned farm for milk production from his family. As his father and grandfather, he showed and still shows a high political engagement and stood up for ideological projects on a high degree. He was the federal chairman of "AbL – Arbeitsgemeinschaft bäuerliche Landwirtschaft[4]" (Consortium of rural agriculture) for almost ten years. Besides, he is the co-founder of the Agrarian Alliance[5] (Agrarbündnis). Jacobi distinguishes himself through personal networking skills, personal connections with institutions and sustainability orientation. Meanwhile, Jacobi holds the office of the Upländer dairy's governing body.

4.2 Genesis of the problem and formulation of the initial project (problematisation)

Insecure market situation and fewer possibilities for processing organic milk led the starters of the initiative to search for organic processing alternatives. At that time, they produced premium organic milk, but only a small part of the amount could be sold and processed as organic. Therefore, the co-operative decided to obtain control of the dairy, which was fully equipped and easy to reactivate. This decision was based on several factors and problems confronted by the organic farmers. Besides they were motivated by economic and sustainable aspects (Jasper, 1997):

- There is a lack of processing and commercialisation possibilities in the region. The co-operation with the Sachsenberg dairy did not open new sustainable future prospects.
- Because of the increasing industrialisation and rising number of large milk processors, there was no more or only little scope left to influence market decisions. Large retailers which normally were only supplied by "preferred" processors gained more and more market power and were able to set processors under pressure. However, dairy farmers were dependent on the results of the dairy industry for the organic milk price.
- The market prices for conventional and organic milk were continuously decreasing. For many producers the price received for their milk was below the production cost.
- Building up an own processing site meant to be able to decide about product, price, place and promotion independently and on one's own responsibility. The reallocation of product marketing from the influence of internationally acting supermarkets to a regional level was seen as a crucial factor.
- Organic dairy farmers faced several difficulties to sell their milk as organic and to get an adequate price. Usually, only a small part of their organic milk could be sold as organic.
- Upland was a traditional milk producing area – the farmers wanted to save old traditions and cultural expressions. It was of crucial importance to keep added value inside the region.
- Large processors were supplied with milk at international level, which involved long transport distances and increasing impact on the environment. The farmers wished to know where and how their milk was processed and did not want to "support" these globalised structures.

The Upländer dairy still belonged to the "Wuppertal/Köln e.G." milk plant. The regional agricultural office gave the decisive instruction to close down the Upländer dairy through the "Wuppertal/Köln

[4] The AbL represents the interests of farmers and stands up for cultivation forms according to sustainable, social and ecological agriculture. It consists of a co-operation of small or medium scale conventional and organic farmers. Besides it incorporates all interested people that are ecologically, socially or environmentally engaged. The AbL aims to create awareness in terms of (negative) social impacts on farms determined by inconsiderate one-sided acting. Another target is to initiate and support projects with emphasis on quality production and regional marketing (www.abl-ev.de, 2004).

[5] The Agrarian Alliance joins 21 member organisations. The alliance organizes collective initiatives, campaigns and agrarian congresses and stands up for a "fair-minded" agriculture in terms of rural, social and environmental concerns as well as animal welfare.

e.G." and so it could be taken over. The decision in buying as well as in participating in the negotiation in 1995 was made by the Willingen-Usseln municipality and the mayor. The major aim of the community with the operation of the dairy was to maintain as well as to create employment, being of a crucial importance for a region lacking in infrastructure as Upland. In addition, the dairy also served as an important medium for tourism in the region. The closed dairy building, which is located in the centre of the town, would deteriorate with time and worsen the townscape, being therefore not interesting for tourism.

4.3 Development of the initiative (interessement – enrolment – mobilisation)

In the next chapter, the take-over of the dairy will be described, beginning with the first required procedures of the history of development until the present time. Thereby, the problems (e.g. the barriers in the scaling up process) as well as the decisive factors of success will be defined.

4.3.1 Interessement

As mentioned in the chapter 4.2, the decision to sell the Upländer dairy and put it in operation was based in two main points of interest. On the one hand, the take-over of the dairy opened new future prospects and commercialisation possibilities for the regional organic milk farms. On the other hand, the operation of the dairy would create new employment as well as be a new tourist attraction for the town and region, the latter being the community´s main objective.

4.3.1.1 Regulation of the legal form

In order to buy the dairy from the mother company (Wuppertal/Köln e.G.), adequate financing possibilities had to be exposed. The allocation and application of required funds showed to be a great problem for the start of the initiative. The application for adequate funds demanded a legally recognised company organisation that was defined during the negotiation with the company Wuppertal/Köln e.G. With the assistance of legal advice by a regional tax agency a legal form for the dairy emerged:

Because it should be a dairy managed by farmers, one has to consider the organisation as a co-operative[6]. However, this legal form did not show to be favourable, because it does not permit the admission of non-agrarian participants due to the assumption of the identity of shareholder (capital provider) and user of benefits. Important and required non-agricultural "shareholders" should be integrated as partners. Because of this, the legal form Ltd. (private limited company**)** was chosen, because it accepts several non-identical partners. After the regulation of the legal form, the producer organisation Hessen w.V. was notarially recognised as a shareholder of the dairy. The first obstacles to be overcome already appeared during the choice of the legal form of the dairy regarding legal advice. Due to the lack of capital, a low price notary was chosen, who did not attend the expectations, not conducting an efficient legal form. The lack of efficient advice led to a delay in the process.

4.3.1.2 Provision of capital

During the consulting process, important financial disintermediation and possibilities for support were searched. However, the elaboration of a business plan was a prerequisite for obtaining public grants and bank loans in order to certify the efficiency of the initiative. This plan was elaborated together with the partners, confirming the signature from the bank the creditworthiness of the intention. The reluctance of the bank to support the initiative showed to be a great obstacle.

The provision and disclosure of the required capital demanded the persuasion of as many shareholders as possible. In addition to the bureaucratic filing of application for public grants, financial

[6] Co-operatives are no corporate entities, but an association of individuals, where an individual is the centre. Co-operatives have a definite legal order to support their members. The identity of the investor and the user of benefits is of a crucial importance for the co-operatives (source: www.raiffeisen.de/ organisation/index-org-2_1.htm).

support by private people played an important role. The provision of capital resulted from different sources, as described in the following sections:

Partner of the Ltd.:

The farmers' co-operative Hessen w.V. was the first partner of the Ltd. At the time of the foundation of the Ltd. in 1996, the producer organisation represented 18 organic milk farmers. These farmers could not raise sufficient capital for the required partial financing of the project, making it thus necessary to increase the number of members. In order to win more members, which happened only during farmers' meetings, the Upländer dairy was committed to accept the milk from all members as an incentive. With this strategy, 15 organic milk farmers affiliated to the producer organisation (33 members). The farmers participated with a converted milk quota of 5.11 Cent per litre for the dairy. Furthermore, they used their properties as a guarantee to obtain a bank loan.

Public support:

As already mentioned, it was necessary to formulate a business plan to certify the efficiency and define a legal form (elaborated by the mayor and Josef Jacobi), in order to allow the application for public funds. During this process, the "office of regional development, landscape conservation and agriculture" (ARLL[7]) participated as advice institution.

At that time, regional initiatives were technically advised in relation to the application for funds throughout the Federal State of Hessen. In the city of Usseln there was a regional main focus related to support permitting thus, the application for funds through the maintenance program for Hessian villages ("Hessisches Dorferneuerungsprogramm"). After the approval of the grants, the community was able to buy the building of the old closed dairy and to lease it to the Upländer dairy. In addition, a partial financing to buy equipment was obtained through the advice of the ARLL.

Further capital was provided by a non-governmental organisation (B.U.N.D. NRW – German Association for Environment and Nature, North Rhine Westphalia). The interest in a practical support for organic agriculture was a motivation, from which the idea to float a fund derived[8]. The B.U.N.D. successfully recruited members who invested money in the fund and participated for a long period.

Bank loans

Provision of capital regarding the agreement on the part of the bank was linked with a high degree of personal risk input. At the beginning, the banks did not grant credits because the initiative seemed to be too risky. Because of this, the farmers had to act as guarantors with their personal property to get an entry to the credits. In addition, in the first half of the year, the farmers abandoned the common extra payment for every litre of organic milk in order to avoid another financial pressure for the dairy. The negotiation with the banks could only be carried out with an official management board of the dairy. Mrs. Artzt-Steinbrink was the only qualified person to occupy the

[7] ARLL= Amt für Regionalentwicklung, Landschaftspflege und Landwirtschaft, Korbach: this department is responsible for concerns within the rural district commissioned

[8] B.U.N.D.: The national association of B.U.N.D. in North Rhine Westphalia (NRW) already worked closely with Josef Jacobi, initiator of the dairy initiative. In 1988 Jacobi, at this time nationwide chairman of AbL (see footnote 4, page 5), founded together with the B.U.N.D. NRW and other associations the umbrella association of the German Agrarian Opposition. From this association evolved the Agrarian Alliance (Agrarbündnis) which joins 21 member organisations. This organisations elaborate collective initiatives, campaigns and agrarian congresses and stand up for a "fair-minded" agriculture in terms of rural, social and environmental aspects as well as animal welfare. So the B.U.N.D. NRW already has experiences with realisation of sustainable initiatives and still aims to support sustainable development. This is an important reason why the B.U.N.D. NRW established the investment fund in order to support the start up of the Upländer Dairy.

management board at that time. With the occupation of this position, she had to take all financial risks by the bank loan.

Private investors

Private shareholders participated in the project without having been consciously addressed by the initiators. The financial aid was offered by personal interest and commitment in order to support this initiative. About 10 shareholders from the region were involved, being also included as shareholders of the Ltd.

The capital sources played an important role for the implementation of the initiative in the beginning phase. The table below shows the amounts of the capital provided.

Table 2: capital provider and amounts (source: Artzt-Steinbrink, 2005; Bock, 2005; Brunsmeier, 2005)

Capital provider	Amount (€)
Farmers' co-operative Hessen w.V.:	166.000
Public support („maintenance program for Hessian villages")	125.000
Private fund	500.000
B.U.N.D. NRW	about 120.000
Bank loans	100.000
Private shareholders	about 125.000
total	**about 1.000.000***
*** approximated data**	

Additionally, the dairy obtained credit in the form of a current account from the investment bank Hessen, in order to assure the support of milk grants of the farmers and the Wuppertal/Köln e.G.[9].

4.3.1.3 Network building

With the incorporation of shareholders as partners of the Upländer dairy Ltd., the first structure of the actual network of the dairy was formed in 1996, as shown in Figure 10:

[9] Since the beginning, the Upländer dairy also had to process conventional milk to work at capacity. However, the Upländer dairy had a contract with the Wuppertal/Köln e.G. to buy needed conventional milk only from the e.G. and not from farmers which are already bound by contract with Wuppertal/Köln e.G.. The Wuppertal/Köln e.G. wanted to assure its milk suppliers and tried to avoid losing them to the Upländer dairy.

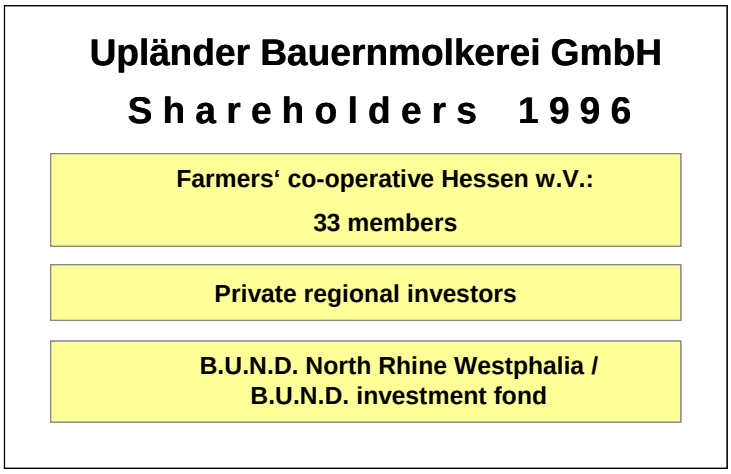


Figure 10: shareholders of the Upländer Dairy in 1996 (source : Artzt-Steinbrink, 2004)

4.3.1.4 Advisory service, advocacy and distribution of skills

Besides the financial support, the provision of professional consulting services contributed to the success of the initiative. The advocacy and personal commitment of some actors played an important role.

Professional consulting was offered to the Upländer Dairy mostly by the "office for regional development, landscape conservation and agriculture" (ARLL). A co-worker was responsible for the application for public funds, such as for the maintenance program for Hessian villages ("Hessisches Dorferneuerungsprogramm") and the CMA[10]. CMA funds especially aimed to support commercialisation activities of the dairy.

The planned marketing measures were already elaborated in the business plan, serving as basis for a support by the CMA. In the context of a regional marketing support grants were mobilised for the commercialisation concept and introduction of products (from CMA, Hessen Federal State and Upländer dairy).

Furthermore, the contact person at the ARLL showed a great interest in the reconnection of the dairy, contributing for the success of the initiative beyond the actual agreed services.

The initial phase of the initiative was characterised by a distribution of professional competence, such as the occupation of new job positions. The areas of competency are defined as:

Management board:

Mrs. Artzt-Steinbrink occupied the management board of the farmers' co-operative "Hessen w.V." before the take-over of the Upländer dairy, because she had experience in the course of business of a producer organisation and in the commercialisation of milk products. She was very well suited for the task of the management.

Marketing know-how:

The office for regional development, landscape conservation and agriculture (ARLL) offered another employee for the Upländer dairy, who worked as project consultant in the dairy and delivered support in building up the organic channel of distribution and the first commercialisation activities.

An external agency also supported the commercialisation activities of the dairy. Through this co-operation, marketing measures could be organised as well as advertising material (e.g. flyers,

[10] CMA= Centrale Marketinggesellschaft der deutschen Agrarwirtschaft mbH (Central Marketing Organization for German Agricultural Industries): it is the main national level marketing agency in the agricultural sector. It is funded by compulsory commodity levies (source: Knickel, 2003, WP2, page 14).

posters) could be developed. The agency was supported by grants of the CMA and Hessen Federal State.

Dairy management:

Due to legal reasons, the executive producer should have a title of master craftsman, being also necessary in order to obtain public grants. In addition, a worker responsible for the technical activities and control of the dairy was needed. The dairy could be put in operation with the employment of a dairy master craftsman as well as former employees from the dairy. Creating new jobs was supported by national subsidies.

4.3.1.5 Political basic conditions for the start of the initiative

The country was governed by the SPD and Grüne parties at the time of the take-over of the dairy, being an advantage since these parties support the organic cultivation and facilitated thus, the allocation of grants for the Upländer dairy.

4.3.2 Enrolment

The process described in section 4.3.1 formed the basis, being also the pre-conditions for the implementation of the initiative. This chapter (Enrolment) shows the changes in the further development of the Upländer dairy. Therefore, the main focus will be given both to the structural changes (e.g. the consolidation of the network) and to the changes of the basic conditions.

4.3.2.1 Consolidation of a network

Both farmers and non-agricultural people could be included as partner of the Ltd., which was considered to be very important during the decision process of the dairy´s legal form. The non agricultural shareholders should also have voice and decision-making power. But from the beginning the aim had been that the Upländer dairy should represent mainly the farmers´ interests.

The farmers' co-operation Hessen w.V. obtained the majority of quotas in the Ltd. The farmers responsible for the milk distribution are represented by five members in the management board of the Ltd. These five board members of the producer organisation can be elected during the farmers' meeting (see Figure 11).

The five members have to inform the farmers during the producer organisation members meeting about the decisions of the management board. Once the context is defined (e.g. decisions about employees) or defined dimensions (investments > 5000 Euro) are reached, the farmers are integrated in the decision process, being represented by the five board members. The producer organisation members meeting occurs once a year, sometimes more frequent if it is necessary. Therefore, the farmers are able to actively participate in the strategic decisions of the dairy. The farmers are also informed about the decisions (e.g. the price paid for milk) through a newsletter (every 3-6 months).

The farmers occupy a share of more than 60% of the capital stock and thus the majority of vote quotas. A vote quota of 75% of all elective shareholders has to be achieved in order to put through a decision. Non-agricultural shareholders can hold a company's share of 24% at most. On the basis of these regulations the contractual agreement avoids that one of the non-agricultural shareholders could overrule the farmers in decision-making processes. The figure below illustrates the organisational profile of the Upländer dairy.

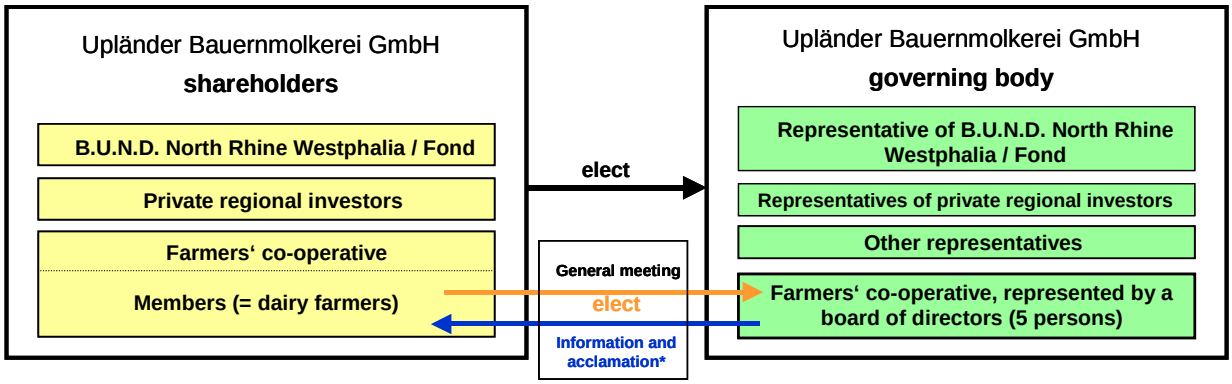


Figure 11: organisational profile of the Upländer Dairy (source: Artzt-Steinbrink, 2005; Kramer, 2005)

In 2001, a fourth shareholder was included in the Ltd., at this time the Ltd. had four partners. The new partner is a corporation (similar to the B.U.N.D), which ensured the liquidity of the dairy with an extra loan. In the next sections, the backgrounds and the objectives of the "BioBauernBeteiliguns AG" (BBB AG) will be described. After BBB AG had joined no further partners have been integrated in the Ltd.

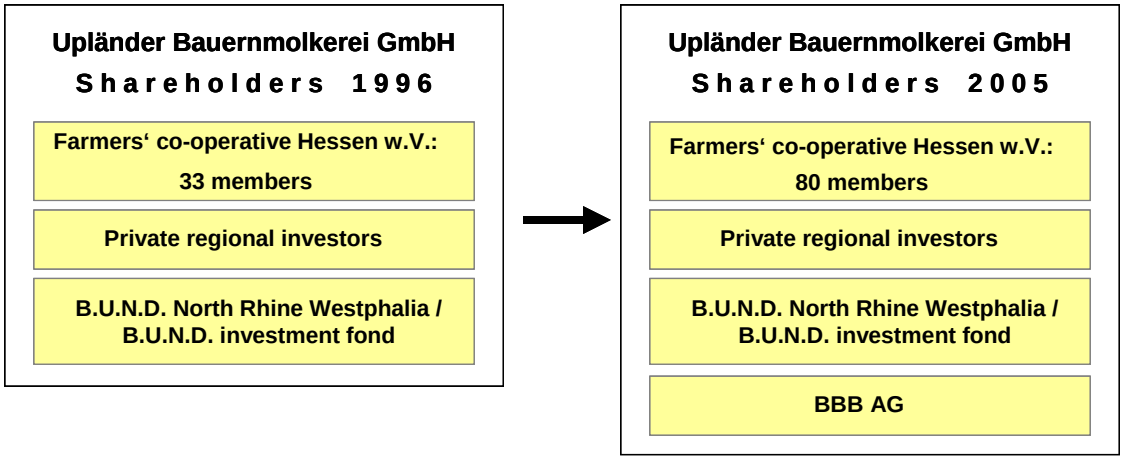


Figure 12: dairy's shareholders 1996 – 2005 (source: Artzt-Steinbrink, 2004)

4.3.2.2 Establishment of a filter among organic farmers

As shown in Figure 12, the number of dairy farmers has increased from 33 to 80. The access to the producer organisation and thus, to the organic milk distribution of the Upländer dairy is relatively easy, because the dairy aims to increase the amount of processed organic milk and to reduce the amount of conventional milk. Since the dairy is certified according to the principles of the Bioland association, there are some conditions for the inclusion of new organic farmers:

- At least 70% of the delivered milk must follow the principles of the Bioland associaton. The remaining 30% should follow the principles of other associations and the EG-Bio regulation,
- The Bioland certificate of the farmers must be made available for the Upländer dairy,
- The organic farmers have to be controlled by the veterinary office (Hessian Association for Perfomance Test – "Hessischer Verein für Leistungsprüfung (HVL)"), which take milk samples about four times a month. If there are deviations (e.g. number of bacteria, inhibitors), the dairy responds immediately with dissuasions and sanctions,

- The new member farmers are obliged to enter the farmers' co-operative and to agree with the articles of co-operation. Committed by the articles the farmers are obliged to supply the co-operative with milk. So far there are no single contracts between the farmers and the co-operative.

The inclusion of new organic farmers that deliver milk in the producer organisation is tied to these defined conditions, which are accomplishable and normally can be implemented without great investments. The certification of the Bioland association, the disposition in participating financially in the producer organisation, as well as the implementation of the quality standards according to the milk quality regulation must be fulfilled. There are no selection criteria according to the size and structure of the farms. Since the initial operation of the dairy, about 47 new organic farmers became members of the producer organisation.

4.3.2.3 Consolidation of capital procurement

On the one hand the dairy got credit with the shareholders due to the increase in commercialisation possibilities of organic products and the ascending turnover (e.g. private shareholders and bank). On the other hand, the loan redemption and an increasing independence from the bank credits was assured. In 2001, a contribution was afforded by the BioBauernBeteiligungs AG (BBB AG).

The corporation was originated from the Andechser[11] and the Upländer dairy. It aimed to process and commercialise organic products from small and medium-sized companies, which produce, process and bring organic products to markets, using shareholders' funds in order to provide *„high quality at all levels of the production and to promote the refinement, especially of the initial production and to create a long-term fruitful basis"* (www.bio-bauern.uol.de, 2005). The BioBauernBeteiligungs corporation aligned the provision of loans according to the criteria of the organic and sustainable agriculture. The BBB corporation participates as a partner of the Upländer dairy with about 10%.

Besides the low interest loan of the B.U.N.D, the foundation of the BioBauernBeteiligungs corporation played an important role on the acquisition of capital. The Upländer dairy could pay the credits of the bank and has been in the black since 5-6 years. The BBB corporation is composed of 40 shareholders (Artzt-Steinbrink, 2005).

4.3.2.4 Development of a marketing strategy

As already mentioned in section 4.3.1.4, the marketing strategy of the dairy was supported at the beginning by a project manager and the consulting of an external agency. The principal tasks were the launch of products in the market through the development of a branding and corresponding marketing measures. On the other hand, it was necessary to find trading partners and distribution channels for the dairy products.

The dairy's philosophy played a crucial role during the development process, in particular the offer of high quality and healthy products from the region to the consumers. Because of this, the uniform branding was developed, especially in relation to the region Upland, being thus, recognized by the consumers. It has a slogan: *"In jedem Liter Milch steckt ein schönes Stück Region"* ("Every litre of milk contains a beautiful piece of the region", see Figure 13).

[11] The organic dairy "Andechser Molkerei Scheitz" is the market leader in Germany.

Figure 13: collective brand of Upländer Dairy (source: www.bauernmolke-rei.de, 2005)

4.3.2.5 Assortment arrangement

Because of the replaceable standard assortment, which had been offered in the beginning, the dairy had to struggle with a enormous (price oriented) market competition. Investments in quality, innovations and facilities reduced the risk of replaceability. In addition, the dairy developed specialities, which led to a differentiation in comparison to the competitors. The dairy plans to intensify the investments in product development.

4.3.2.6 Package design

One year after the initial operation of the dairy (Mai 1997), a new concept for package was developed according to the ecological and qualitative direction of the marketing strategy. Because of this, the dairy invested in new techniques for package: whipped cream, sour cream, and buttermilk have been offered in “Mehrkomponentenbechern”, which is a thin-walled plastic cup with a card cover and an aluminium lid. All three components can be recycled. According to a study about the ecobalance of this package, carried out by the Federal Environmental Agency, the use of this kind of cup as a non-returnable package showed to bring ecological advantages compared to the reusable packaging (e.g. deposit bottle/deposit glasses). The dairy communicates this through the internet and requests from the consumers a conscious waste separation:

- Due to its low weight, the “Mehrkomponentenbecher” discharges the streets, saving fuel,
- A decrease in water and energy use, because there is no cleaning process for this kind of package,

Besides the ecological context, the qualitative aspect, such as protection of light effects, receipt of vitamin and flavour are stressed.

4.3.2.7 Basic conditions after the take-over of the dairy

The successful take-over and initial phase of the dairy could be attributed to the personal commitment and the disposition to take high risks of some actors as well as the provision and authorisation of grants. Since the beginning, the dairy communicated its intention to process organic milk and to support the regional organic farmers. This strategic direction of the dairy resulted in

different responses, which partially put at risk the scaling up of the company. Additionally, internal changes led to new adjustments.

Political and social basic conditions:

The clearly communicated aims of the dairy did not only result in benevolence at the social and political level, but also in conflicts.

Since the beginning, the dairy had to process organic as well as conventional milk. Latter has to be integrated in processing in order to work at capacity. Of course, the regional conventional milk farmers were interested in delivering their milk to the dairy. However, the Upländer dairy had a contract with the Wuppertal/Köln e.G. to buy the conventional milk needed only from the e.G. and not from farmers which are already bound by contract with Wuppertal/Köln e.G.. The Wuppertal/Köln e.G. was only willing to sell the closed dairy to the community with the acceptance of these conditions.

Additionally set under pressure by these conditions the Upländer Dairy experienced envy and malevolence towards organic agriculture. Especially after the approval of grants (mostly favoured through the SPD-Grüne government) the dairy got the reputation of a “supported dairy”. Especially conventional farmers saw themselves as being discriminated against. This negative response not only from the conventional farmers but also from the regional consumers was additionally strengthened by the lack of knowledge about the background and the additional expenses of the organic agriculture.

Due to the difficult and risky initial phase of the Upländer dairy, the regional population began to make bets about the continuity of the dairy, which showed the insecurity and acceptance of the population about the project, intimidating the dairy employees.

In 1998, there was a change in the government (from SPD-Grüne parties to CDU-FDP), being more difficult for the approval of grants at the land level. Political influences (lobbying) tried to threaten the sustainable development of the dairy.

Due to these incidents, the Upländer dairy invested more in the marketing and public relations mostly concerning the organic agriculture in society, in order to create positive interest of consumers and acceptance for the initiative.

Internal basic conditions

Already in the first years of the company history, conflicts of interests emerged within the network, resulting in discharges and losses of competence. The discharge held some risks. The discharged employees were the contact persons for important business partners (for example banks) and their discharge caused a lack of understanding and almost the ending of bank support. According to Mrs. Artzt-Steinbrink (2005), the dairy was in a dramatic situation, which could only be solved by the personal trust of the banks in the dairy, to herself and to Josef Jacobi. Therefore, Mrs. Artzt-Steinbrink and Josef Jacobi played a crucial role for the continuity of the dairy. Within the company it was emphasized, that the loss of these two persons would not interfere in the functioning of the company, transparency in the business process being an important success factor.

Support, advice and advocacy:

The success of the initiative was dependent on the availability of financial support on a high degree. Public advisory services helped to find adequate support possibilities and made contributions to apply for them. The political basic conditions were since the beginning of the initiative very favourable. The SPD-Grüne government favoured the approval of grants and supported thus, the initial financing of the project.

Besides, private investors and advocacy, but also bank loans provided required capital. Without appropriate financial power the initiative would not have been realizable. Missing competencies, e.g. project management, application for funds and dairy technologies, could be supplemented by

regional advisory services and knowledge transfer supplied by employees. All persons involved showed a high personal interest and commitment.

4.3.3 Mobilisation

The next chapter will describe all the measures, especially concerning the scaling up process of the dairy. It focuses on the development of distribution channels and the relationship to the trade partners as well as the marketing measures that followed the success of the Upländer dairy.

4.3.3.1 The development of distribution channels

Since 1996, new market channels had to be established in order to bring the processed organic products to the market. The processed quantity of organic milk could be regularly increased by gaining new trading partners. The most important trading partners for conventional milk and milk products are the retailer Rewe (number two in the Top 30 ranking of German retailers) and regional milk self collectors (regional gastronomy).

The most important trading partners for organic milk and milk products:

- national wholesale trade: AlnaturA, Terra Naturkost Berlin, Dennree Großhandels GmbH, Naturkost Elkershausen, Phönix Naturprodukte GmbH,
- retail for natural food (supermarket chain "tegut…", supplied by AlnaturA),
- finishing manufacturers like e.g. Hipp (baby food), Praum GmbH (producer of biscuits) and bakeries,
- 60 regional schools,
- specialised shops,
- own dairy shop.

The channels of distribution partially developed through contacts to trade partners already organised by Mrs. Artzt-Steinbrink together with the Sachsenberg[12] dairy. However, they were not sufficient to the economical achievement and to increase the amount of processed organic milk. An important aim was to follow the consequent presence in the market, in order to call the attention and interest of consumers and trading partners.

With the new corporate identity and a consistent representation to the outside, the Upländer dairy showed and still shows a significant presence at exhibitions like BioFach, Anuga, Green Week, trade fairs of wholesale dealers, in order to contact important target groups.

The supermarket chain "tegut…", which is supplied by AlnaturA, as well as the trade partner Rewe showed to be the most important channels of distribution of the dairy. However, losses of the trade partners would lead to significant problems. This dependence, but also dependence on the market situation, led to an increasing price pressure from retail. Demands for (lower) purchase prices resulting in a decrease of the milk price and threatening the coverage of producer costs will be denied. In this case, the profile of the company plays an important role: the products of the Upländer dairy should not be commercialised as cheap products in retail.

The Upländer dairy aims to discontinue the processing of conventional milk. Because of this, the dependence on the Rewe retailer becomes weaker, since it deals with conventional milk.

[12] Before the Upländer Dairy was taken over, the organic milk of the farmers' co-operative Waldeck w.V. was processed by the regional "Sachsenberg dairy". Mrs. Artzt-Steinbrink, at that time managing director of the co-operative, was responsible for placing the products in the market place.

4.3.3.2 Strengthening of consumers‘ involvement (particularly inside the region)

The budget necessary for the Upländer dairy for the accomplishment of substantial communication and advertisement measures in relation to end customers was and is still not available. In order to obtain the attention of the costumers and to stimulate their interests for the dairy and its products, the Upländer dairy has focused on targeted public relations measures from the beginning. Several public events provided interesting stories about the background and other activities of the dairy, e.g.

- Opening of the “Muhseum” as state-approved ecological information centre,
- Introducing organic milk in 60 regional schools,
- Opening of a nature-orientated garden in collaboration with local schools,
- Sponsoring of regional sports events,
- Organisation of public farm visits and farm parties,
- Ads in regional press and radio stations.

In the Upland region, the dairy could build up a great involvement of the consumers concerning the regional products. However, the aim is to reach a supra-regional and stronger awareness of their products. To find out about actual consumer and market trends the dairy co-operates with market research institutes and science. The results help to align strategic decisions and promotion according to market demands and consumer needs.

4.3.3.3 Company’s philosophy and representation to the outside

The dairy´s objective is to supply the region with sustainable and healthy quality products. It wants to use the market “direct to the door”, relating thus the advertisement to the region. The slogan “every litre of milk contains a beautiful piece of the region” was chosen to reflect the business philosophy of the dairy (www.bauernmolkerei.de, 2005). The dairy has the basic principle to avoid long transport distances and wants to strengthen the position of the regional farmers through a clear limitation of the region.

Regarding the term “region”, Mrs. Artzt-Steinbrink distinguishes a “sales region” (including Berlin and Hamburg) from the “region of Upland” which is traditionally linked to the dairy. These approaches seem to imply a discrepancy between the business philosophy (the “promise”) and the real business activity. The supra-regional distribution is communicated with the following arguments:

- Only a small part of the products will be commercialised nationwide,
- The Upländer Dairy doesn’t consciously promote its products supra-regionally or internationally in order to find new resellers. The focus of sale and promotion is on the region. This requirement of regional commercialisation is also carried by, e.g. the B.U.N.D, which represents an important source of grants for the dairy,
- The economic survival of the dairy is the major priority regarding interesting offers at national and international level, since the dairy is dependent on other trade partners due to the great stress of competition. Only specific products (such as sour cream, curdled milk cheese, jelly, butter) are distributed supra-regionally. With these products, the dairy can distinguish itself in the market, offering retailers a possibility for creating a new image.
- The distribution of fresh milk is carried out in a defined and regional radius, as the supra-regional distribution of fresh milk does not make sense,
- The dairy supplies mostly wholesalers that sell the products to retailers. So the further product flow can’t be influenced.

Not only the regionality, as well as the ecological origin of its products distinguish the Upländer dairy. The package design emphasizes the logo of the dairy and the Bioland association, which

also applies to the printed material used as products presentation to trade partners and consumers.

The context of the printed material can be found on the dairy's home page. Besides the regional reference, the background and organic agriculture as well as the Bioland certificate of the farmers and the dairy are emphasized. Furthermore, the home page presents the ecological package of the "Mehrkomponentenbecher" (see section 4.3.2.6), stimulating the recycling of the package components. The dairy uses the home page to show the ecological and social sustainability of the company: *"In the foreground of our works is not only the production for an abstract market, but the necessities of the environment and nature, the necessities of the people, who live and work in the region, as well as the necessities of the consumers"* (www.bauernmolkerei.de, 2005).

4.3.3.4 Sustainable performance

The success of the dairy can be attributed to the personal commitment of few persons and to the farmers. The disposition in taking risks and a great commitment promoted the scaling up process. The achievement and success of the company is not only attributed to the sales figures. Since the beginning, the company contributed to the regional structure and tradition and supported added value staying inside the region:

Impacts on local community:

Through the sustainment of the dairy, 30 jobs were assured. The renovation and maintenance of machines, as well as the logistic requirements of the dairy assured work assignments and the added value within the region. In a region lacking in infrastructure like the Upland, new employment and contribution to incomes is of crucial importance.

Furthermore, synergy effects for regional tourism were achieved. Without the reconnection of the dairy, the building would continuously degenerate, worsen the city image. Tourism is one of the main sources of receipts, the appearance playing an important role. The conservation of the cultural landscape is also supported by the dairy, since the agricultural structure can be preserved, contributing to the traditional natural scenery, to alternative cultivation methods and to the conservation of the environment.

With the opening of the ecological information centre („Muhseum"), the dairy contributed to the tourist attractiveness of the region. About 500 visitors (tourists and local inhabitants) per week visit the "Muhseum" (www.bauernmolkerei.de, 2005). Two people were employed for the information centre management.

The dairy also sponsors important regional events. In this way, the dairy increases its name recognition and makes a cultural contribution to the region.

Collaboration with milk suppliers:

The take-over of the dairy assured the means of existence and secured future prospects for the organic dairy farmers. Modernisation, product specialisation and differentiation, as well as the elaboration of a corporate identity led to a professional approach of the company, which is expressed in its increasing turnover figures, success in distribution and strengthening of the market position. Because of this, the amount of processed organic milk increased and further organic milk farmers could be affiliated to the producer organisation. The regional orientation of the dairy, but also the majority of votes that have an important decision power in the company, strengthen the position of the farmers. With growing turnover figures it was possible to increase the additional charge to the price paid for the milk from 1.5 to 6 Cents/Litre in 2004.

Through the support of the Upländer dairy, initiatives such as the „5-Cent-Project" (see the following sections) could be implemented to the farmers, leading to further value added within the region.

The inclusion of new organic farmers that deliver milk in the producer organisation are tied to defined conditions, which are accomplishable and can be implemented without great invest-

ments. The certification of the Bioland association, the disposition in participating financially in the producer organisation, as well as the implementation of the quality standards according to the milk quality regulation must be fulfilled. There are no selection criteria according to the size and structure of the farms. Since the initial operation of the dairy, about 47 new organic farmers became members of the producer organisation. (Wiederholung)

Sustainable initiatives of the Upländer dairy:

In the last years, the Upländer dairy distinguished itself through a number of special initiatives that contributed to the region.

- Opening of the ecological information centre („Muhseums“):

  In Mai 2002, the national ecological information centre was opened next to the dairy, which aimed to inform the population about the themes milk and milk products as well as about organic farming. It increased not only the tourist attractiveness, but also contributed to educational work. This project was financed with national grants.

- Introduction of the “fair milk-projects“ in the retail sector:

  The „fairmilk-„ or so-called „5-Cent-Project“ of the Upländer dairy aims to motivate and stimulate consumers to support regional farmers by paying five additional cents for organic milk, with the promise to make these five cent available to regional farmers. For this purpose the package is tagged with an sticker. The “five cent” is based on a calculation of the organic milk price: At the moment, dairy farmers get 35 cent per litre of organic milk. Actually, they need 40 cents to operate cost-effectively. The extra-payment, especially for milk, constitutes a credible sales promotion: participating retailers post a sales increase of 5-10%.

- Introduction of GMO-free milk in the retail sector:

  44 conventional milk farmers from the region joined in a co-operation and are participating in the project to deliver milk free from genetically modified organisms. They underlie strict controls. The milk will be tagged with a clear label „without genetic engineering“. From April, the milk will be available mainly in natural food shops. Furthermore, they aim to introduce the product in the supermarket chain „tegut...“.

With the implementation of these initiatives, the Upländer Dairy has accomplished the following sustainable contributions:

- Contribution to the tourist attractiveness, composition of synergy effects with the regional tourism, creation of new employment (employees for the Muhseum),
- Contribution to the educational work of the community (regional and supra-regional), in relation to the ecological and sustainable context,
- Contribution to rising added value through the direct payment to the organic farmers,
- Contribution to the supply of safe and high quality products to the region.

4.4 Analysis of the current information exchange network

4.4.1 Introduction

Social actor network analysis is a research strategy aimed at the description and explanation of social relations (the interdependence of individual actors within networks) and the actions resulting. It aims at capturing the nodes of a network and their interrelations. Linkages between nodes stand for one or several specific kinds of social relations or structures (Schnell et al., 1999, p. 241 ff.).

Centrality, diffusion, strong and weak ties, cohesive subgroups and role are among the subjects of network analysis (cp. www.analytictech.com/networks/).

Formal features of relations are for example symmetry (undefined or reciprocated relation between A and B) and asymmetry (directed relation, e.g. information transfer only from A to B) (Schnell et al., 1999, p. 241 ff.). Messner introduces issues such as influence/centrality of individual actors[13], and sharing of decision making power and steering resources in connection with the (a)symmetry of network relations (Messner, 1995, p. 211 ff.). Relations can also be evaluated concerning their intensity (Schnell et al., 1999, p. 241 ff.).

Schnell et al. (1999) provide some criteria for the classification of networks. "Total" network analysis is aimed at including *all* existing types of relations. It includes all partial networks which are focusing on one or several types of relations. "Uniplex" network analysis focuses on one type of relation, while "multiplex" networks focus on parallel analysis of several types of relation. *Uniplex* networks from the perspective of a single actor ("ego-centric"/personal networks) or of all actors are the most common networks analysed in practical research, as analysis of total networks requires extraordinarily big efforts (Schnell et al., 1999, p. 241 ff.).

Networks can also be categorised according to number of actors and structure (capacities for strategy, action and mobilisation etc.) (Messner, 1995, p. 211 ff.). Network density is a subject of network analysis defining loose-knit networks, close-knit networks or clusters (Clausen in Heinritz et al., 1995, p. 463). Messner refers to a conflict between weak ties (likely to result in loss of cohesion) and strong ties (likely to result in loss of innovation potential) (Messner, 1995, p. 211 ff.).

4.4.2 Objectives and research questions

The analysis introduced in the following sections is directed at the currently given structures of the network around Upländer Dairy Ltd. focusing on information exchange (regarding quality requirements, prices) between the actors involved, regulative relations (regarding quality requirements) and sharing of decision making power (regarding quality requirements as well as prices) among the actors involved. The issues of product quality and price are chosen as vital aspects of a regional marketing initiative.

Questions directed at the Upländer network are: How strongly is the network connected? Indicators are network density and analysis of clusters. It is also asked who the central actors vital for the functioning/maintenance of the network are and how power and control are shared among the network´s actors. These questions can be clarified by analysis of centrality measures describing an actor´s structural position within the network as there is a relation between centrality and his/her importance and influence within the network. "Degree", which is analysed in section 4.4.4, is based on the number of ties received or sent by a node. With regard to information exchange this indicates an actor´s possibilities to receive or distribute information. Another centrality measure presently not included in analysis is "betweenness" which is based on the number of paths leading through an individual node on the shortest path between others. An actor with "betweenness centrality" is capable of controlling or facilitating information flows and can thus act as "bottleneck" or "gatekeeper" between different "regions" of the network.

[13] For example, the larger the number of positions (nodes) connected to a certain position by communicative relationships, the bigger the chances of influence held by the keeper of this position (Clausen/Weymann in Heinritz et al., 1995, p. 350 f.).

As analysis of information exchange and regulation does not make sense in the past perspective, analysis focuses on the external network *presently* active around Upländer Dairy Ltd. and the dairy´s position within its surrounding network. However, internal and external level can actually only be separated analytically as for instance the dairy´s shareholders such as the farmers´ co-operative can also be regarded as part of the internal network. However, focus is not on individual actors within the dairy but on the surrounding institutions etc.

For practical reasons, the network´s boundaries were defined including only the currently most relevant actors as evaluated by the IfLS in consultation with the dairy´s managing director.[14]

Analysis is directed at a partial network, meaning *not all* of the existing kinds of relations between these actors are analysed, but analysis is focusing on two kinds of relations: information exchange and regulative relations between actors. These link variables can be analysed in relation to the node attributes "role" and "participation in decision making". Here, the whole partial network, meaning data collection from the perspective of each of the actors involved is included by collecting information from each actor about their relations to all others (as opposed to "ego network" data collection from the perspective of one single actor, e.g. the dairy´s[15]). This allows for analysis of centrality measures and clusters or subgroups within the network.

4.4.3 Data collection

Data were collected by telephone interviews using a questionnaire containing mostly standardised questions. Interviews were carried out with actors representing the respective institutions or bodies. Variables contained in the questionnaire are:

- Information exchange (regarding quality requirements, prices, other)
  - Information delivered/received
  - Frequency of exchange
  - Kind of exchange
- Regulative relations (regarding quality requirements, other)
  - Regulation received as well as
- Participation in decision making (regarding quality requirements, prices, other)
  - Kind of participation.

Open categories, "kind of exchange" and "kind of participation" were collected in order to learn about the quality of processes taking place within the network. The creation of categories, however, might turn out to be difficult if actors deliver answers relating to different levels of information (e.g. "informal" as qualitative description, "telephone" as technical description of "kind of exchange").

Additional information on the background of the network (e.g. factors of successful co-operation) was collected by personal expert interviews.

During data collection, the problem of differing information delivered by actors occurred. Each actor was interviewed regarding his or her relations to all of the 12 other actors in the network. For pragmatic reasons, if actor A had already been asked about the relations to actor B (information sent and/or received), actor B was not asked additionally. The consideration was that actor A will have to be trusted to deliver a reliable picture of the relations (although there might be differences in actor A´s and B´s view). Although the actors chosen as interview partners representing the respective institutions etc. were named by the dairy and could be expected to be informed

[14] They include: Upländer Dairy Ltd., Organic Farmers´ Co-operative (EZG Hessen), the group of private regional investors, Municipality of Willingen / North Hesse, Organic Farmers´ Investment PLC (BBB AG), B.U.N.D. North Rhine Westphalia, Terra Wholesale Ltd., Tegut Supermarket Chain, Elkershausen Wholesale Ltd., Phönix Wholesale Ltd., Bioland Association (Hesse), *Wholesaler X, Organic Label X* (Non-response during data collection for the two latter ones, therefore anonymous. Only information made available by other network actors on the links to these nodes is available for analysis.)

[15] However, the actors considered in analysis basically represent the dairy´s "ego-"perspective of who is important for the initiative.

about the relations existing in connection with the Upländer Dairy initiative, it turned out that there were cases of contradictory information (e.g. concerning frequency or even existence of an information link regarding one of the topics) where information was collected from both sides of a "link". In case of different evaluation of frequency of exchange, the minimum was documented in the matrix. The latter case might be due to the relation of the personal and the institutional level: Individual persons chosen as informants representing their institutions etc. might not be aware of all of the contacts existing (e.g. contacts their colleagues are involved in).

The data collected were analysed using the MultiNet software. Analysis is always based on pairs of datafiles, one link file and one node file, allowing a combined analysis of node attributes with link attributes.

4.4.4 Results of analysis

4.4.4.1 General features of the information exchange network

The network consists of 13 nodes, including three actors[16] related to production and processing (Upländer Dairy, Farmers´ Co-operative, Bioland Association) and six actors from trade (one retailer, otherwise wholesalers), while four actors play a role as (financial) supporters of the dairy initiative (group of private regional investors, the Municipality of Willingen, the BBB AG and the B.U.N.D. North Rhine Westphalia).

Besides actors´ "role", participation in decision making regarding quality requirements, product prices and other issues was collected as node variable. While a slight majority of actors of 54%, including the dairy´s shareholders, are formally involved in all decisions, the others are involved at least informally[17] by giving advice or exchanging opinions (see **Figures A1** and **A2**).

Looking at the whole of individual information links between all actors, product quality and product price are the topics most occurring – being those topics directly asked for. Among other topics asked for as an open category the most important one is product development and joint marketing measures, followed by business management issues. Only 3% of interactions are taking place on a "frequent" basis, the majority rarely (61%) or regularly (36%). Informal interaction (ca. 54%) is most common within the network, for example face-to-face contact at trade fairs or otherwise, or via various other channels of communication. About 30% of interactions are formal, for instance personal contact at meetings of the dairy´s supervisory board, and ca. 16% are mixed.

[16] Nodes are referred to as actors, not meaning single persons.
[17] Information is missing for two trade actors due to non-response during data collection.

4.4.4.2 Features of the network regarding individual topics of information exchange

Total information exchange (regarding all topics)

Figure a shows the three-dimensional graphic display of the total information exchange network (including all topics) generated by the MultiNet software. “Evec” stands for eigenvectors, being the principal coordinates, whose relative importance is represented by the so-called eigenvalue (cp. Richards and Seary, 2002, p.2). “Role” is chosen as node variable. This network´s density is 0.31, indicating a relatively strong connectedness as density values range between 0 for an un-connected set of nodes and 1 for a completely connected graph, and densities less than 0.1 are rather common according to the MultiNet manual. Density is based on the relation of existing links to the maximum of links possible (MultiNet manual, p.3, http://www.sfu.ca/~richards/).

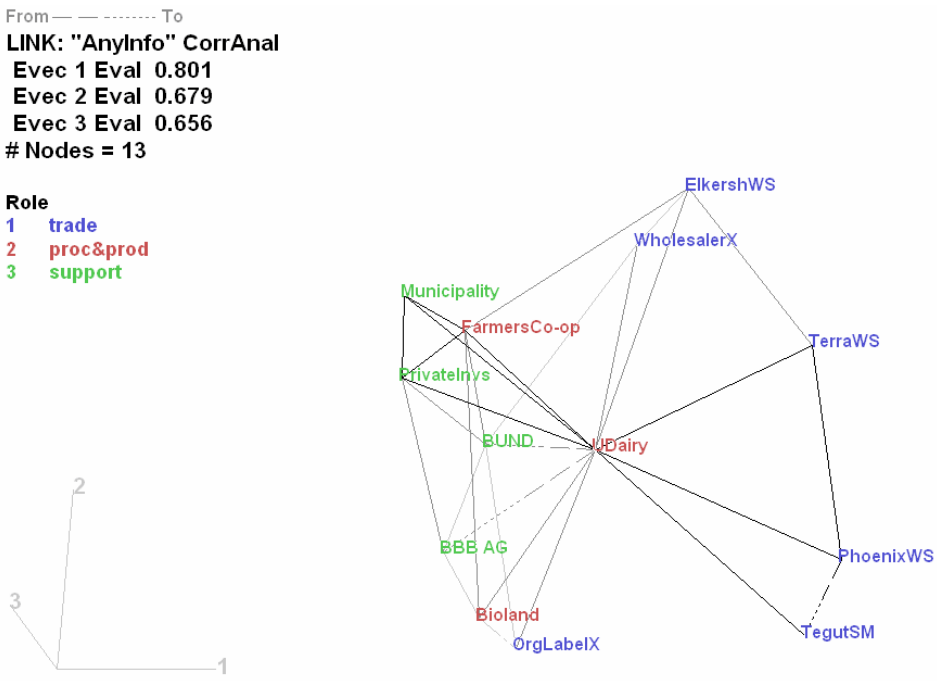


Figure a: Information exchange network (regarding all topics) with role as node variable (3-d MultiNet display)

Dotted lines show the direction of links and indicate the network´s asymmetry, meaning not all of the links are reciprocated. This also indicates different values for centrality measures “in-degree” and “out-degree”. Degree is a node feature based on the number of links, here information, received or sent. The Upländer Dairy is the node with the highest values. It receives 10 links making a normalised value (running between 0 and 1) of 0.83 for in-degree and it sends 12 links (out-degree of 1.0). The dairy is in both cases followed by external shareholders with values of 0.41 to 0.5. The average in- and out-degree of the other nodes is 0.25. (see appendix, **Figure A3**)

Asking how important “role” might be for interaction, the one-dimensional graphic display in **Figure b** shows a cluster of actors belongig to the “support” group.

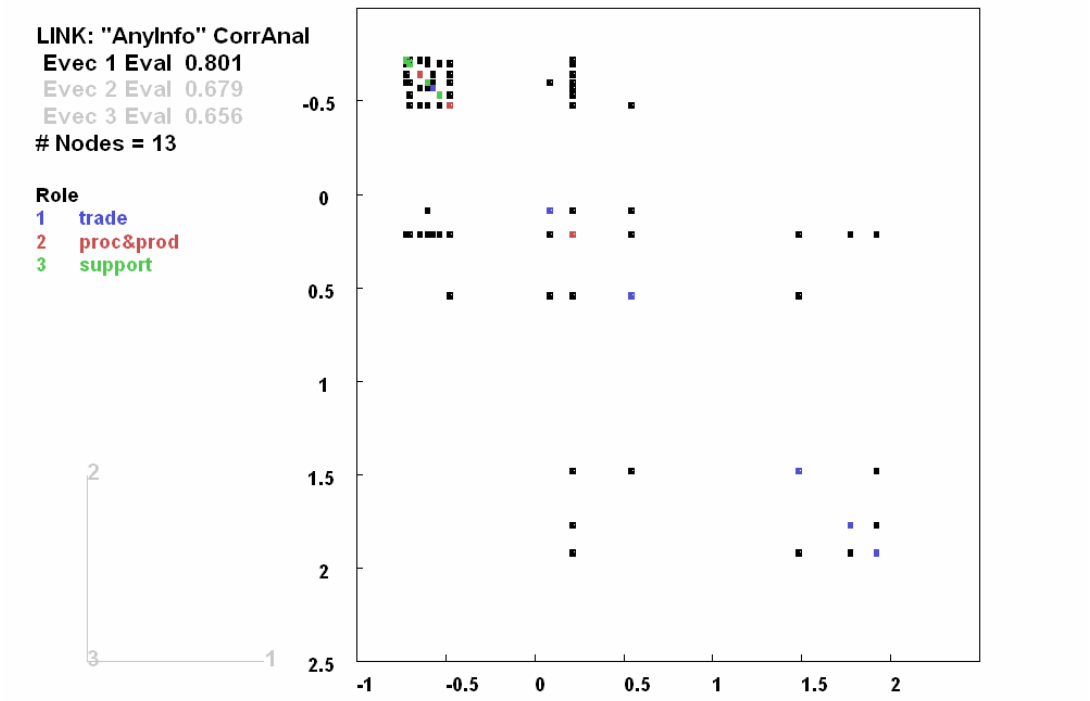


Figure b: Information exchange network with role as node variable – “support” group clustering (1-d MultiNet display)

From the data collected three link variables describing qualities of links where created, being the degree or strength of interaction based on the number of topics, formality of interaction as well as frequency. These are visualised in **Figures A4-6** in the appendix.

Information exchange on product quality, product prices and other topics

Looking at information exchange regarding product quality, it becomes apparent that the density of 0.189 is lower than that of the total information exchange network. As **Figure A7** shows, most of the actors are involved in decision making regarding product quality. Similar applies to the network of information exchange regarding product prices with a density of 0.1834 and the majority of actors participating in price decisions. Regarding “other” topics only (for contents see section 4.4.4.1), density is higher (0.27). As for the in- and out-degree values, for quality information exchange as well as price and other information the Upländer Dairy is the central node with remarkably high values compared to the other nodes especially for out-degree (0.66, 0.83 and 1). In- and out-degree are the same for quality exchange because of this network´s symmetry.

4.4.4.3 Role of regulation within the network

"Regulation" turns out to be of minor importance within the network. There are only a few cases of regulation links regarding quality requirements as well as "other" issues. The quality regulations network shown below also includes the Federal State´s Veterinary Office as one relevant new actor not present in the information exchange network while only few of the actors from the information exchange network are represented (**Figure c**). In interviews actors from the network repeatedly emphasised the basis of the network was voluntary co-operation. "Trust", a "feeling of togetherness" and personal contacts as well as transparency are also named as important factors.

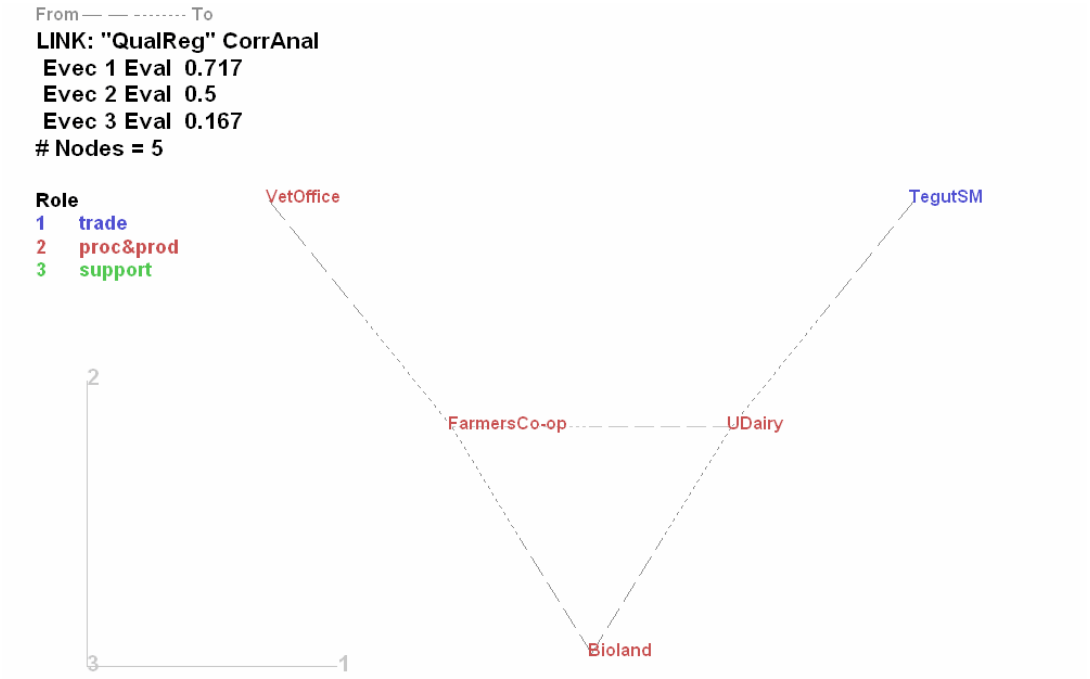


Figure c: Quality regulation network (3-d MultiNet display)

4.4.5 Conclusions

Schnell et al. (1999) name the definition of a network´s boundaries as one of the methodological problems of network analysis. Practical research needs to limit its focus on a certain number of actors, as was done in the case of the Upländer network analysis which might result in the exclusion of important actors. Looking at the results presented here it must be considered that they only depict a part of the picture and that the network described is based on and shaped by theoretical considerations and research interests and by practical limitations.

Problems might also occur during data collection: A sensible analysis depends on the availability of all relevant actors of a network as sources of information. Missing values might result in bias of the structures described. In the case presented here, there are two actors for which some of the node attributes and links are missing due to non-response. Another point already mentioned is the possibility of two actors´ contradictory evaluation of their relation.

However, the problems of defining the sample to be included in analysis can be viewed as a common problem of empirical research just like the problems of data collection mentioned. If based on a theoretically well elaborated research question, network analysis can be evaluated as a highly useful instrument for the examination of relations between actors´ attributes and their interaction in various contexts. It is also feasible to analyse the relations between actors and non-personal nodes such as events, which opens up further possibilities for research.

4.4.6 Appendix

Figure A1: Information exchange network (regarding all topics) with formal/informal participation in decision making (regarding product quality and/or product price and/or other issues) as node variable. Values for “Wholesaler X” and “Organic Label X” are missing. (3-d MultiNet display)

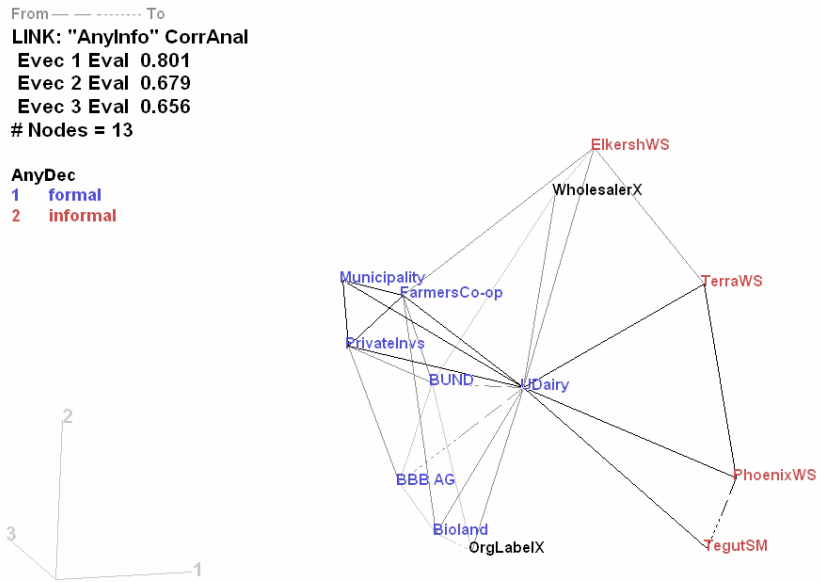


Figure A2: Information exchange network (regarding all topics) with degree of formal participation in decision making (regarding up to three issues) as node variable. Actors categorised "none" are participating informally. Values for "Wholesaler X" and "Organic Label X" are missing. (3-d MultiNet display)

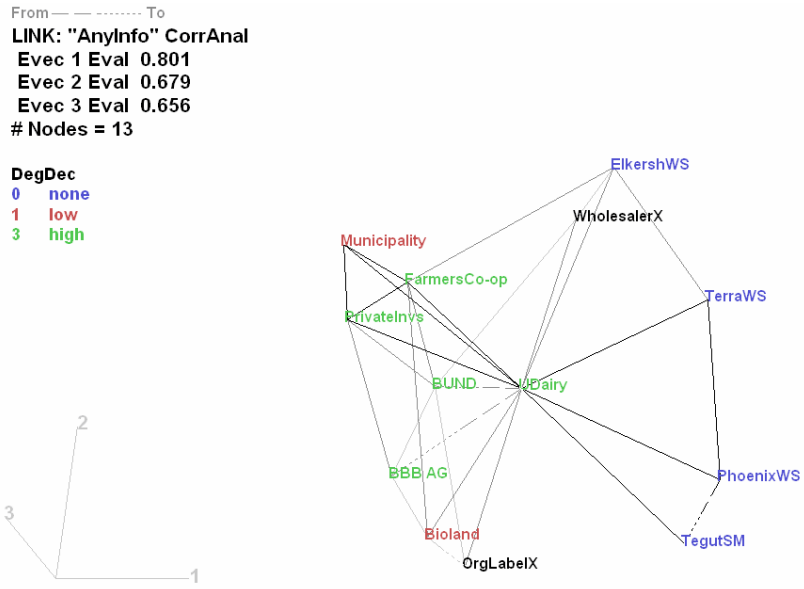


Figure A3: Information exchange network (regarding all topics) with centrality measure "in-degree" (representing links received) as node variable. (3-d MultiNet display)

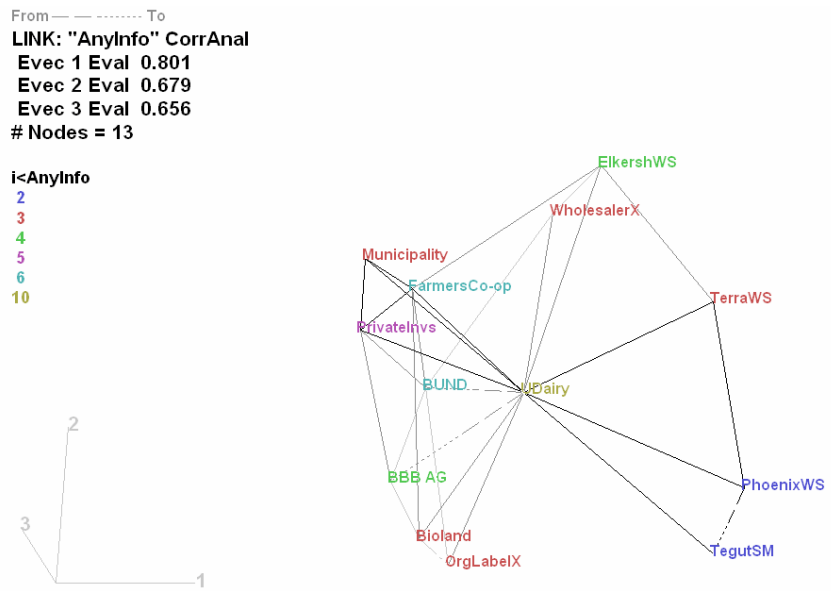


Figure A4: Degree/intensity of information exchange regarding number of topics (product quality and/or product price and/or other) (2-d MultiNet display)

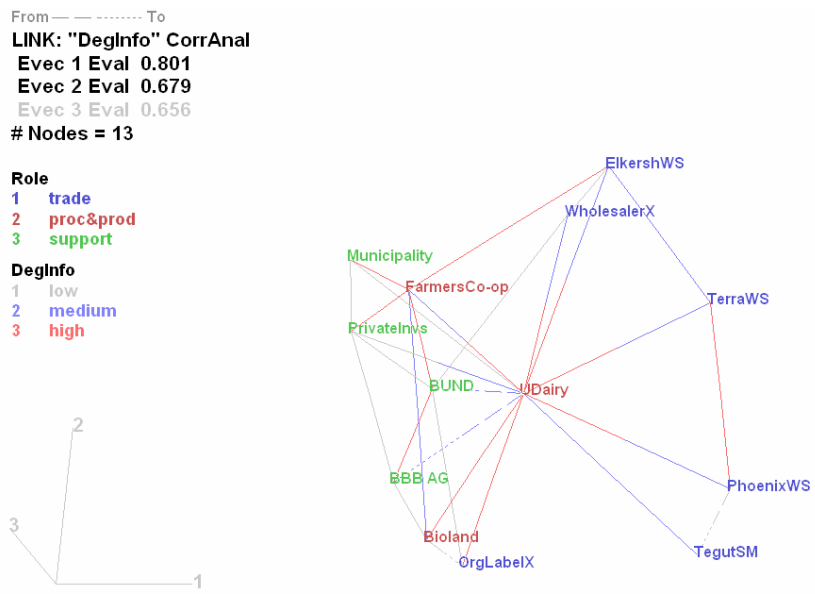


Figure A5: Formality of information exchange (product quality and/or product price and/or other) (2-d MultiNet display)

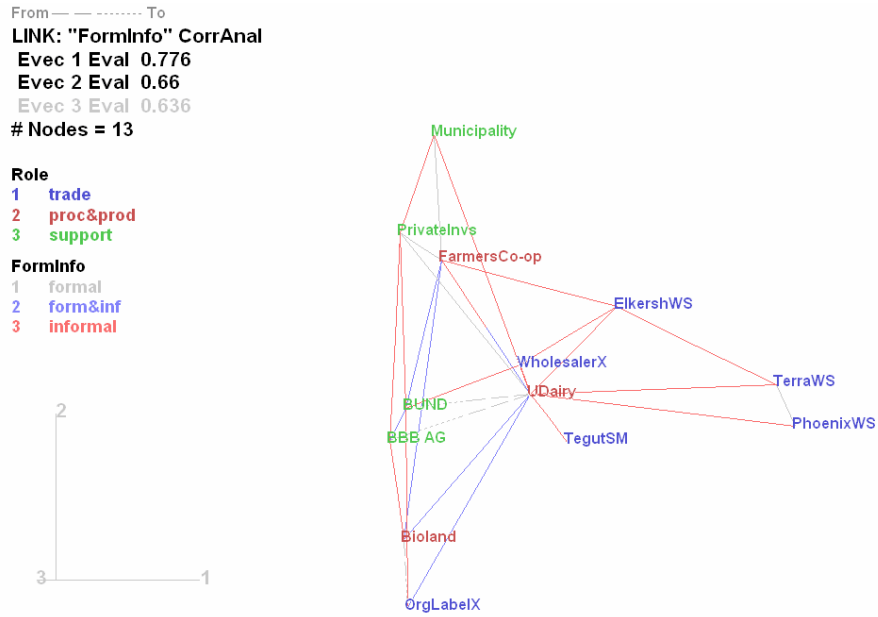


Figure A6: Frequency of information exchange (product quality and/or product price and/or other) (2-d MultiNet display)

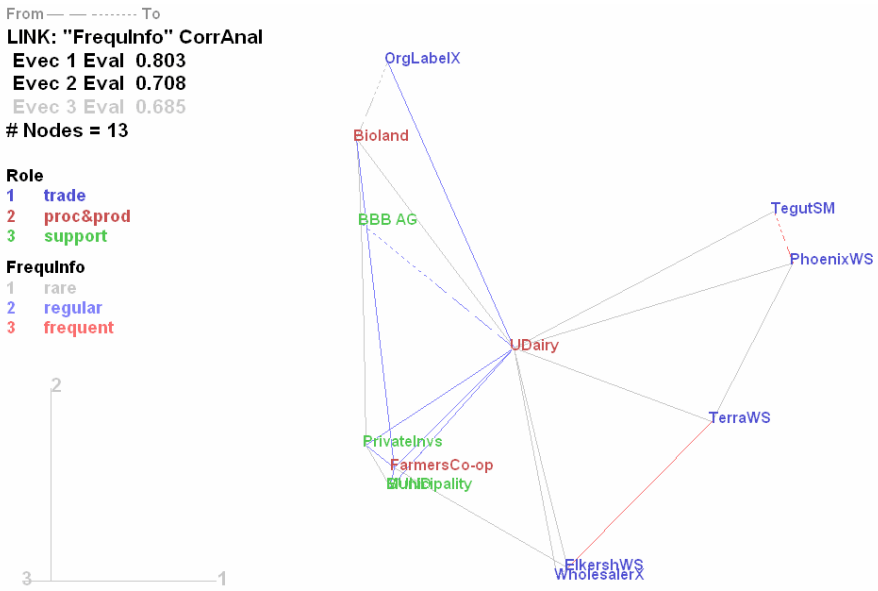
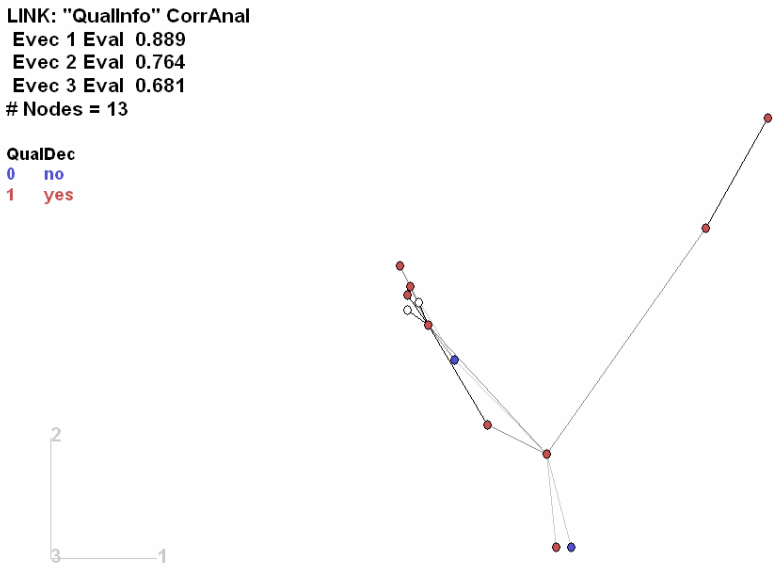


Figure A7: Quality information exchange network with participation in quality decisions as node variable. Blank dots indicate missing node values ("Wholesaler X" and "Organic Label X"). Some of the nodes like the "yes"- and the "no"-node in the lower area of the network actually have the same coordinates (the same contacts) and are only *displayed* separately. (3-d MultiNet display)



5 Comparative analysis of principal case and satellite case focussing on the key themes addressed in the case study

The case study report includes a comparative analysis. The overall aim of comparative analysis within the SUSCHAIN project is to conduct a transversal analysis of all case studies. The analysis should help to identify common features of food supply chains and to derive common recommendations to for economic actors, policy makers and relevant institutions (Knickel, Jahn, WP6, 2005, page 1).

Regarding the Upländer Dairy there are two international and one national satellite initiatives. The first international satellite work was carried out together with the Latvian research team and will be described in the following section.

5.1 International joint satellite work between Germany and Latvia

5.1.1 Objectives

The Latvian-German case study comparison does not aim at a thorough analysis, but rather at gaining from the "fresh" foreigners' perspective (observations, perception) by giving the Latvian host team new impulses for own further analysis. Comparison of the German and Latvian case studies aims at identifying common success factors, possibilities and also obstacles of development – taking the different national framework conditions into consideration as background.

5.1.2 Choice of case studies for comparison

In the framework of the international satellite case study analysis, the German Upländer dairy is compared to the Latvian Keipene and Rankas dairy initiatives. The German and Latvian teams agreed to give priority to the Upländer-Keipene comparison as they are both organic initiatives, and to use the Rankas case as a conventional contrast example. (The Keipene initiative emerged only in 2004, therefore it was considered only later on in the framework of the SUSCHAIN project.)

5.1.3 Method of comparison

It was agreed that both the German and the Latvian team should devise a paper based on the observations made during excursions as well as on additional information gathered from exchange between the Latvian and German teams and written information from the case study reports. The paper should contain the main observations gathered during the visits, conclusions and recommendations.

The results of the joint satellite work are described in the following sections.

5.1.4 Results of joint satellite work: German Upländer dairy compared to the Latvian Keipene and Rankas dairy initiatives from the German point of view

5.1.4.1 Characterisation of Keipene dairy

The Keipene dairy is a small-scale local dairy that was started a few years ago by regional farmers. Keipene remains the first and only organic dairy in Latvia, processing and bottling milk on a small scale (500 litres of milk per day). Besides, it was one of the first organic farmers' collective market initiative (Tisenkopfs et al., 2005, page 20). Like the Upländer Dairy the Keipene initiative was an answer to lacking possibilities for regional organic dairy farmers to have their milk processed and marketed as organic. According to Latvian observations (Talis et al., 2005, page 20) at that moment the Keipene initiative can be considered as a failure, as difficulties to reach a certain

standard of production quality and safety have hindered the process of scaling up. Keipene faces a lack of personal and financial resources required for the product development and investments in equipment needed in order to achieve a higher product quality. The quality of the Keipene products needs to become more reliable in order to meet the high demands especially of urban customers like in the Riga area.

5.1.4.2 Characterisation of Rankas Piens

The Rankas Piens dairy was established in 1993 when the state owned milk company Valmieras Piens, of which Ranka dairy was a branch, was privatised within the general privatisation process in the country. The joint stock company Rankas Piens was founded by 69 dairy farmers from the nearby municipalities and employees (Tisenkopfs et al., 2005, page 9). Rankas piens became the seventh largest dairy in Latvia. At the beginning of the 1990s at its start up there can be distinguished two initial aims: first, to scale-up production and to improve commercial performance through modernisation and market stabilisation/expansion. Second, to specialise production and develop new sustainable products that would help strengthen the position in the market place (Tisenkopfs et al., 2005, page 8). After ten years the initiative scaled up and improved its commercial performance. During this process there emerged two new major challenges. This challenges are the necessity to change the management style in order to manage the increased complexity of the company and its external relations as well as the necessity to find new ways of communication with consumers and enhancement of the economic viability of the products (Tisenkopfs et al., 2005, page 8).

5.1.4.3 Comparison of Upländer, Keipene and Rankas dairies

The main observations regarding the situation of the Keipene and Rankas dairies as compared to Upländer are:

Point of departure and initiators:

Both the Keipene and the Upländer initiative were an answer to lacking possibilities for regional organic dairy farmers to have their milk processed and marketed as organic. Keipene remains the first and only organic dairy in Latvia, processing and bottling milk on a small scale (500 litres of milk per day). In both cases realisation was driven by the high commitment of the respective initiator.

Supplying farmers' co-operative:

The farmers supplying the Keipene as well as those supplying the Upländer dairy are organised as co-operatives. While the Upländer co-operative counts 80 members (starting with 18 in the initial phase), the Keipene co-operative consists of twelve farmers of which presently only four are suppliers. The other farmers benefit from their membership through an exchange of information and support. The farmers supplying Rankas Piens are not organised as a co-operative, likely to result in a weaker position of those farmers towards the dairy.

Distribution of power:

While farmers have been strongly involved in the Upländer initiative from the beginning, the Keipene farmers´ degree of involvement is low. They stay passive, not using the possibilities of participation in decision-making and management offered (which might partly be due to age). Upländer farmers constitute the majority of the company's shareholders and are actively involved in all processes of decision-making. By contrast, over 50 per cent of shares of the Rankas Piens joint stock company are held by the managing director's family. While farmers are excluded from participation in the Rankas case, where power is centered around the managing director, there is also a concentration process in the Keipene case due to the passive behaviour of the farmers. Although Upländer's initiator keeps playing a vital role for the initiative it is no longer dependent

on a single person due to transparency and efficient task sharing, as is stated by the managing director.

Marketing channels and advertising:

Both for Keipene and Upländer the establishment of marketing channels for their organic products was vital in the initial phase and remains an important task. Plans for opening a dairy shop for direct sale at the Keipene dairy could not be realised due to lack of personnel and deficient internal task sharing. The dairy building nevertheless functions as a platform of communication with customers at milk bottle return. The Upländer dairy shop plays an important role beyond the sale of dairy products as a "window" to the public and for attracting tourists as it is connected to a museum documenting the history of regional dairy farming and processing and offering a range of activities. As financial resources for common advertising are lacking, both Upländer and Keipene are making use of alternative measures such as organising events of product introduction at public canteens (Keipene) or appearance in the regional media as sponsor of regional events and participation in trade fairs (Upländer). While Upländer has succeeded in developing specialty and quality products enhancing its competitiveness, Keipene is lacking the personal and financial resources necessary for product development and investing in equipment needed to achieve a higher product quality.

5.1.4.3.1 Conclusions

Against the background of the situation of the Latvian organic sector, the following conclusions can be drawn from the observations described above:

- Lacking possibilities of processing organic milk as well as organic products in general prevent a wider distribution and marketing of organic dairy products in Latvia, while volumes of organic production are relatively high.

- The formation of farmers' co-operatives could help improve the position of (smaller) farms along the chain: members of a co-operative can jointly offer larger amounts of milk to a processor and might be able to negotiate an organic premium.

- Concentration of management responsibility in a single person endangers the stability of the initiative and might prevent the realisation of innovative ideas because of limited working capacities.

- Consumers' appreciation of organic food is low because of insufficient information (small Keipene initiative's lack of resources for advertising campaigns) and because of partly unreliable product quality. Therefore consumers' advocacy of the organic sector which might help create added value for producers and processors is lacking.

5.1.4.3.2 Recommendations

Recommendations based on these conclusions might be:

- Processing of organic milk to organic dairy products, e.g. in conventional dairies, requires investments for additional equipment (plans of Rankas Piens failed). The group of beneficiaries of EU subsidies should therefore be extended from organic production to organic processing.

- Preoccupations/fears connected to the membership in farmers' co-operatives need to be overcome ("trauma of collectivism") by communicating the benefits to farmers; initiatives for the formation of farmers' co-operatives should be supported.

- Dependence on a single person should be avoided in order to allow for the initiative's greater stability by clear task sharing and transparency.

- Consumers' awareness needs to be created in order to achieve willingness to pay a higher price for organic products. Support/advice for dairy farmers regarding quality assurance/maintenance by institutions and dairies in addition to procedures of mere quality control should be established.

5.2 International joint satellite work: the Tirol Milch dairy

Approx. 6000 farmers deliver to the Tirol Milch company in Innsbruck, a town embedded in the Austrian Alps. The farmers are directly responsible for the company's success, because they are all shareholders of the Tirol Milch co-operative. During the summer months around half of the milk comes directly from the Tyrolean mountain pastures that are situated up to an altitude of 2000 metres. The difficult access to these remote areas demands a special logistic management, in which cable cars and milk pipelines are used.

Next to Innsbruck there are two more production facilities in Wörgl and Lienz. In the year 2004 the turnover of the enterprise accounted for 142 Mio. Euro. The dairy employs 320 members of staff. The enterprise exports mostly to the neighbouring Italy, but also to Germany and other European countries. The share of exports amounts to approx. 30 %.

The very popular image of the region is strongly connected with the success of the dairy. First of all the consumers associate environmental image components with the region, among the strong motives "nature" and "mountains". The origin "Tirol" is very important for the unique status of the label Tirol Milch. The assortment picks up these associations and offers products that are especially fresh, of high quality and natural, all manufactured without artificial additives.

Furthermore exclusive specialities of the region are offered. Especially the traditional Tyrolean cheese specialities gained many national and international awards. "Tiroler Bergkäse" is indicated by a European label protecting the origin. Often a special manufacturing method is used, e.g. the traditional feeding with hay or the storage of cheese in rock cellars. Besides traditional products the innovation policy is an integral part of the strategy, at which the trends "convenience" and "wellness" are mainly emphasised (e.g. the launch of a cheese steak that doesn't melt by heating).The wide assortment contains fresh milk products, butter, curd, ice-cream and fruit-and-whey drinks. The recognition of the Tirol Milch is an important success factor, whereas the enterprise has spent 5 million Euro in 2004 for marketing activities, among advertising via TV, radio as well as sponsorships.

The products are quality-controlled at every stage, from the farm to the shelf. Tirol Milch is an ISO-certified company. Beyond this, external inspection institutes are authorised for an expanded quality control. Farmers who supply milk of a consistently high quality the whole year round get in addition a special award, the milk quality seal. Furthermore an organic range regarding the cheese assortment is offered, in which the farmers keep the regulations concerning the organic farming.

In line with the second most successful referendum in Austria (year: 1997), more than 1.2 million people have voted against genetic engineering. Tirol Milch has picked up this discussion and offers GMO-free milk, that is also clearly labelled on the package, as a pioneer. For that undertaking there were made agreements with the farmers in a strictly defined area. The preparations lasted more than one year. The GMO-free assortment is connected with special controls along the entire processing chain from cultivation of the various fodder components to the packaged product.

The ARGE (Arbeitsgemeinschaft für Gentechnik-freie Erzeugung) is an external and independent organisation constituted from the biggest enterprises of the Austrian trade, an increasing number of food producers as well as organic and environment focused associations. The aim of ARGE, as first European identification system concerning genetic engineering, is in the support of GMO-free products for which clear guidelines have been established (Austrian Food Codex). The organisation has created the "produced GMO-free" certification labelling the controlled products.

Figure 14: The label "produced GMO-free"

With this label also the conventional production is finally certified regarding genetic engineering; in the organic sector the necessity for GMO-free production is already standard. With participating in this project Tirol Milch has realised a very future-oriented topic.

Due to the grown structure of this medium-sized enterprise, short information paths play an important role. The so called TIMI-journal is a paper for e.g. employees, business friends and milk suppliers, to provide an insight in the management activities. The special commitment in the region, fulfilled by different projects (e.g. fund-raising), also contributes to a close network in Tirol.

To sum it up, the Tirol Milch is a traditional and at the same time very innovative enterprise, immediately absorbing trends. The authentic and successful communication of the many benefits offered with the assortment (e.g. GMO-free production, organic assortment, manufacture of specialities, innovations) pose a great challenge for the Tirol Milch. In the end each of these unique selling propositions has to match its specific consumer segment.

Austria is, compared to the other members of the European Union, a relatively small country. The affinity of consumers in Austria buying domestic products is distinctively high, different studies document this aspect. So regional brands are preferred in the buying decision process. Also the Tirol Milch benefits from this advantage. But on the other hand it is difficult to gain ground abroad. As an example the Tirol Milch product "Latella" can be mentioned, one of the most famous whey-drinks in Austria. In spite of different endeavours until now in Germany the success was missing. The high concentration of the trade chains in Germany, in connection with the enormous competition, contribute to this development (Literature: "Natürlich wertvoll" - information material of Tirol Milch and the annual report of the general assembly, april 2005; www.tirolmilch.at; www.latella.at, www.life.latella.at; http://www.gentechnikfrei.at).

5.3 National satellite work: the Andechser-Scheitz dairy

From the beginning, the focus of the Andechser-Scheitz dairy has been clearly communicated: In 1980 - four years after the foundation - the first ecological milk was produced. The company is declared as a pioneer regarding the production of ecological milk in reusable packaging, in which fresh milk was filled up in bottles with refundable deposit. In 1997 the completely ecologically oriented dairy was validated and received the declaration according the European Ecological Audit. Only two years before the certification in Quality Management (QM) was fulfilled. The Environmental Management System (EMS) is connected with different tasks, e.g. the yearly environmental performance evaluation by publishing special key dates, the supervision by external controllers and the co-ordination of special environmental programmes that connects the future measurements with responsibilities and deadlines.

Today Andechser-Scheitz, a family-owned enterprise, is one of the biggest organic dairies all over Europe. More than 400 organic farmers deliver 250.000 litres of milk every day, in which 180.000 litres represent ecological cow milk and 11.000 litres caprine milk that is often used for producing specialities because of its typical taste. Furthermore this product is of a high value regarding the incompatibility within cow milk some consumers suffer from. The special composition (e.g. the protein structure and the high content of essential amino acids) plays thereby an important role. The farmers are organised in different ecological producer associations (e.g. Demeter, Bioland) and deliver their products according the declared regulations. The dairy employs a staff

of approx. 170 people and achieves a turnover of 85 million Euro. Besides the ecological focus, the company supports the regional agriculture, whereas the so-called “Fünf-Seen-Land”, that implies the picturesque region with many lakes in the south of Munich, is defined as core region. The exports are mainly focused on Europe (e.g. Austria, France, Italy, Greece, Hungary). In the year 1999 the Andechser dairy co-operated with the French cheese company Bongrain S.A.

Figure 15: The Andechser region near Munich (München)

The dairy promotes a persistent ecological production (integrated management); this aspect also includes further activities, e.g. the training of the staff in environmental aspects, the usage of re-generative energy and reusable packaging - with success as waste is reused for 98 percent.

The internal documentation and external communication are very important success factors of the company’s strategy: Every staff member is integrated in the practical implementation of the environmental guidelines. Due to the employee suggestion system all members are able to pro-pose ideas within the framework of the Total Quality Management System that was launched in the year 2002. The image is communicated outwards by different measures, e.g. consumer jour-nals and special events.

The assortment can be classified in three groups: The biggest one is called “Andechser Natur”, whereas the ingredients are ecologically produced. This label is offered in specialised organic shops. The Andechser Bio-line was created for the food retailers; the ecological assortment pur-chasable in the supermarkets is thus available to broader target groups. Besides conventional milk is manufactured, offered under a regional brand name. Also in the conventional sector it is not allowed to use genetically modified materials as contracted. The dairy takes on the costs for the necessary controls of the raw materials.

Andechser is a very innovative company, whereas a lot of trends are realised in the assortment. For example in the yoghurt range there are more than 30 products with many innovative tastes. Furthermore the packages are adapted to demand. Since 2004 there is a new product line with whey-and-yoghurt drinks in PET-bottles available. Those products are appropriate regarding the growing mobility of the consumers and the demand for healthy food.

A specific feature is the product identification: Every product is equipped with a special code that allows the identification to the production date. All ingredients contained can thereby be clearly identified and the traceability to the farmer is guaranteed. This underlines that Andechser is a very future oriented enterprise regarding the current political discussion about the transparency in the entire production process.

The aim of this company is often contrary to the currently predominated trends of the market:

Because of the changes in the buying behaviour and the growing share of single and senior households non-returnable packages are preferred. Furthermore the willingness to pay higher prices, which the ecological concept implicates, is not always accepted.

Anyway the philosophy is well-anchored and the strong Andechser brand name stands for a broad ecological assortment in the milk sector. Andechser has achieved that the ecological product range is available for many different consumer segments. The example of Andechser with its well-known brand name shows that it is possible to combine marketing and innovation policy with ecological interests and traditional values.

Literature: www.andechser-molkerei.de; Andechser Molkerei, Umwelterklärung, 2003-2006.

6 Discussion and conclusions (summarising changes in profile and performance, including a discussion about expected changes in profile and performance in a process of further up-scaling)

According to the SUSCHAIN methodology the main hypothesis around which cases should be built is the following: *"Scaling up an initiative in the field of NFSCs changes the nature of the organisation (structure, rules, procedures, values, goals) and its sustainability performance"* (Brunori, Wiskerke, WP4, 2004, page 9). From this hypothesis, obvious conclusions about the Upländer initiative can be pointed out.

The Upländer Dairy was founded in 1996. Since the beginning, the dairy has grown and scaled up every year, i.e. processing and marketing bigger volumes of organic milk and milk products. Firstly the scaling up was dependent on the implementation of the initiative: without the security of public support (financial, advisory and advocacy) the initiative would not have begun. Personal engagement and willingness to take risks helped to find appropriate funds and to start the initiative. In general allocation of funds was linked with provision of legal formalities, e.g. the initiative had to commit itself to a legal form, which should be the basis for the future network. Organisational and management difficulties occurred.

The Upländer initiative was an answer to the lack of possibilities for regional organic dairy farmers to have their milk processed and marketed as organic. In the beginning, the low number of organic dairy farmers and, thus, the low amount of organic milk available hindered cost-effective work. Therefore, the dairy also processed conventional milk. Long term objective was to increase the production of organic dairy products and to reduce the amount of conventional milk quantity continuously. In order to expand organic milk volumes, the dairy had to find additional milk suppliers – expanding the network was necessary for the process of scaling up.

The establishment of channels of distribution for its organic products was crucial in the initial phase and still remains an important task. There have been decisive measures like product differentiation and development as well as high quality alignment and development of a consequent marketing strategy (fulfilling of the "promise") which are considered as success factors for reaching a high commercial performance.

The initiative addresses three sub-hypotheses, which are analysed in the following sections.

6.1 Sub-Hypothesis 1: Scaling up depends on commercial performance and appropriate public support.

Besides the background of the story of the initiative it can be mentioned that scaling up depends on commercial performance and public support. The case provides several approvals confirming the statement. Firstly, the investigation of the case showed that the initiative scaled up: growth could be experienced by increasing amounts of processed milk and turn-over. Furthermore, the consolidation of the network, which is implied by a growing number of associated organic dairy farmers and important partners, is considered to be an important factor of scaling up.

6.1.1 The relevance of commercial performance

The commercial performance of the initiative is an important success factor. Crucial factors resulting in the high commercial performance and scaling up, can be observed in:

- a continuous product innovation (development and differentiation) to be able to distinguish from competitors. Faced by market competition and pressure the dairy had to find an USP (unique selling proposition) by producing outstanding products in order to become more interesting for distribution partners,
- strategic actions and an (permanent) alignment of internal and external organisation form,

- strengthening the network and building up a “a sense of togetherness” especially between the starters of initiative,
- development of a regional/collective brand as a standardized corporate identity,
- following a clear regional alignment (promotion / advertising, package design, information material, sales folder, etc.),
- finding different channels of distribution,
- internal and external quality controls,
- a consequent presence at exhibitions like BioFach, Anuga, Green Week, trade fairs of wholesalers to contact important target groups.

6.1.2 Relevance of public support

The Upländer Dairy received different types of public support, which was necessary especially during the initial phase of the initiative. Without this public support the initiative would not have reached its success. In particular the allocation of financial capital is considered to be one of the crucial factors. The mobilisation or rather search for appropriate support possibilities came to the fore. Governmental institutions and advisory services had a substantial share in consulting and in applying for state funds and legal formalities. Another type of support received was the financial capital from non-governmental institutions and persons. Private advocacy (e.g. friends and local inhabitants), banks and the “German association of environment and nature protection” had agreed to invest. In 2001, the Upländer and Andechser dairies founded a stock corporation (“BioBauernBeteiligungs AG”, see section 4.3.2.3) that additionally ensured and still ensures the liquidity of the dairy and helped to reach independence from bank loans. Finally, the knowledge and professional competences of the experts has to be mentioned. There were clear experience gaps that had to be closed by specific consultancy regarding “marketing and project management”, “mobilisation of state funds/applying forms”, “handling of legal formalities” and “dairy technology”.

6.2 Sub-Hypothesis 2: Nature of organisation changes with scaling up as an effect of growth in market power and of the increased pressure of economic constraints and logics.

This hypothesis can be partly confirmed by the Upländer Dairy case. Nature of organisation already had changed during the initial phase of initiative when the starters began to search for financial sources. Applying for support (state run, non-governmental) required compliance with several formalities including the transaction of a notarially certified legal form. With the assistance of legal advice by a regional tax agency emerged a legal form for the dairy and a change of organisation at the same time. Therefore in a first step the change of the nature of organisation was necessary in order to enable the application for funds independently of scaling up processes. The farmers’ co-operative Hessen w.V. and two other capital providers became shareholders of the dairy, consolidating the network. In 2001, a fourth shareholder was integrated.

The nature of organisation featured a high degree of transparency, a “sense of togetherness” and shared decision making between the (internal) network actors and external partners. After the first consolidation internal conflicts of interests between the management board and two important staff members damaged the network. These problems could only be solved by discharging these actors leading to significant interferences in the business. These internal conflicts were caused by the increase of interests of network actors that drifted apart and followed different objectives during the scaling up process. Discharge of staff members required a rearrangement of responsibilities and strengthening of relations between external and internal network partners.

Scaling up as an effect of growth in market power and of the increased pressure of economic constraints and logics also led to changes, which did not interfere with the nature of organisation as a limited corporation with four shareholders. In fact, it interfered with the organisational dynamics within the actor-network. Market power of the Upländer Dairy increased by gaining new market partners and new channels of distribution. Economic constraints and logics required differentiation by product innovation, new technical investments, professional marketing measures and quality controls. The production plant had to work according to hygienic standards, co-ordination control of technical production processes had to be ensured.

Building up these operation areas resulted in the professionalisation, formalisation of relations (contracts, labelling, certifying), extending the external network (gaining new business partners, growing number of participating organic dairy farmers), raising "acceptance" and perception of the initiative within the region and increasing turn over. So the first years of the initiative were more affected by the unstable situation of the internal structures and by financial dependence (bank loans, public support, etc.) on a high degree. The organisational dynamics implemented by the actor-network became more robust by fixing competencies (e.g. not as provided in the first agreements Mrs. Artzt-Steinbrink shifted her role to dairy's director; new employment provided specific know how) and building up strong links: transparency within the chain, loyalty of employees and team-based managerial style are considered as success factors. The scaling up process as an effect of growth in market power also led to a progressive detachment of financial dependence and a stronger market position.

6.3 Sub-Hypothesis 3: NFSCs have a positive effect on rural sustainable development

6.3.1 Limitation of the focused region - A few facts for classifying the area of operations

Visualising the economical effects sourced from the Upländer dairy needs a suitable regional reference. The focused region cannot be limited to only one political region because the economic influence of the Upländer dairy is reaching far outside of the department of Waldeck-Frankenberg where the dairy is localised. Through her vital operations in a wider geographic circle the dairy is triggering economic, ecologic and social effects also in some other areas. A limitation of the analysis to only one area would cut off regions where the Upländer dairy is heavily assisting the organic milk producers. On the other hand supply of data is clustered for political regions in different hierarchies. The smaller the cluster is that difficult it is to get the data. It was decided to collect the data on the level of departments (Landkreise).
In order to analyse the arousing effects in region the geographic locations of the parts of the FSC have to be included. That for the milk collection area of the Upländer dairy has to be focused. Milk producers are the main suppliers of the dairy. Not only because of the company purpose they also receive the biggest share of payments.
Most service providers are located nearby Usseln the hometown of the dairy. In the following regional analysis they are that for included.
Those suppliers of the Upländer dairy are spread in a wide circle around Usseln. Collection area reaches from Limburg and the Vogelsberg in the south to Hoexter in the north. From Meschede to Hofgeismar in west-eastern direction. For further limitation of the region we summarize the departments where the Upländer dairy gets most of their supplies. The departments of Waldeck-Frankenberg, Schwalm-Eder, Werra-Meißner and Kassel from Hesse and Hoexter, Paderborn and Hochsauerlandkreis from Northrhine-Westfalia are going to build the modelled region.

6.3.1.1 Economic structure

The following table shows the economic structure of the described region

UBM-Region		
GDP	**31.033.390.226€**	
GVA	**28.830.105.055€**	100%

Agriculture and forestry	513.691.317€	1,8%
Production industries	8.809.755.042€	30,6%
Construction industry	978.610.527€	3,4%
Trading and tourism	4.485.631.523€	15,6%
Finance	7.363.408.023€	25,5%
Services industrie	6.682.721.225€	23,2%
Habitants	**1.453.000**	
Labour market		
Working persons	561.000	100%
Jobless rate		10,2%
Employed persons	504.000	100%
employed in agriculture	13.306	2,6%
Area	**10.109 km²**	100%
Area used in agriculture	4.857 km²	48,27%

Table 3: Economic structure of the dairy-region(sources: HSLA and LDS, 2003).

The dairy's region has just 1,453,000 inhabitants. With 144 inhabitants per km² it is a sparsely populated area. The relatively high GDP is produced by only 504,000 working persons. That means that every working person is producing 61,574 € per year. A per capita income of 1,780 € results.
The share of agriculture and forestry at the gross value added of the region is relatively low compared to the other economic sectors. Compared with the structure of the german lands the region has a seemingly high income in that sector. Only lands with a large agricultural production top the focused region.

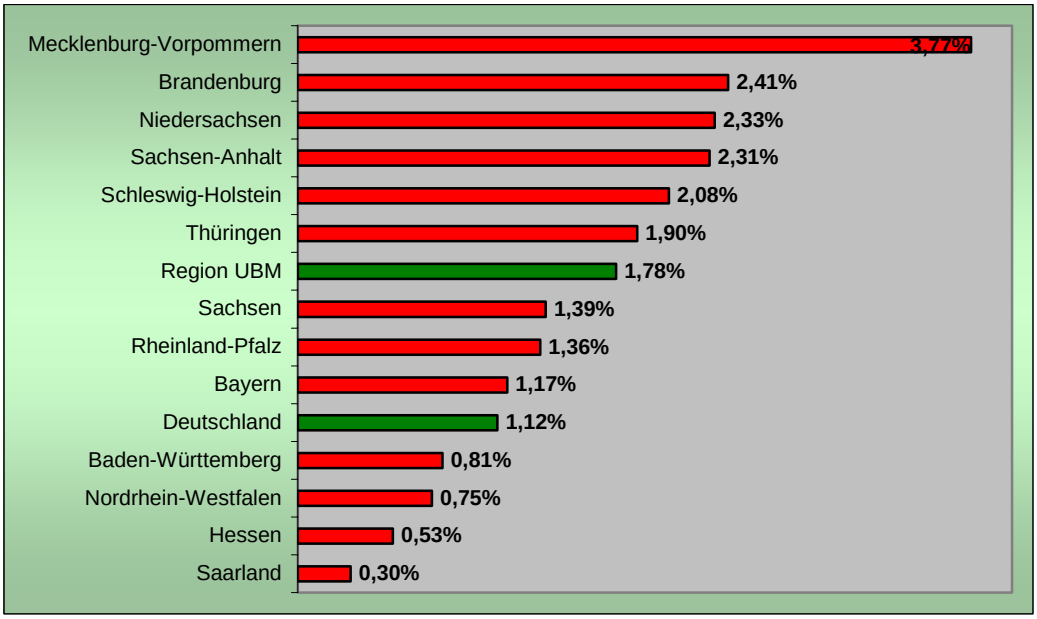


Figure 16: Share of agriculture and forestry at the GVA in the lands. Own calculations; Source Statistisches Bundesamt, 2003.

The dairy farming structure in region shall be deeper analysed. Milk production and processing of the area is in the foreground of that analysis.

6.3.1.2 Dairy farming

UBM region	
Farms with milk producing capacities	3.292
conventional	3.142
organic	150
Amount of cows	97.400
Milk production [t]	618.000
Delivery of milk [t]	600.000

Table 4: Dairy structure in region. Own calculations; Sources HSLA and LDS, 2003.

In the referred region totally 3,292 dairy farmers are saddled. The share of organic farmers in Hesse is 6.08%.[18] In Northrhine-Westfalia it is only 2.4%.[19] In region there is that for a total share of 4.6% of organic farming. That means there must be 150 organic farms in region.
In the summarized departments there have been counted 97,400 cows in total.[20] The average herd size on organic farms is at 30 cows. There must be 4,500 cows giving organic and 92,900 conventional milk in the stables of the region.
A cow in conventional farming is giving yearly 6,384 kg. A cow in organic farming only 5,673 kg per year.[21]
With these information we easily calculate that there must be a milk supply of 618,000 t per year in region. Because of the average delivery quota of 97% 575,000 t conventional and 25,000 t organic milk have been brought to dairy processors.
The milk supply sourced from the five included departments from Hesse was at 341,000 t. The department of Waldeck-Frankenberg, known as the largest milk supplier of Hesse[22], produced 154,000 t. The department of Hochsauerland on Northrhine-Westfalian side produced an amount of 137,000 t which is the second largest supply of the considered region.

6.3.1.3 Potential role of the region in dairy farming

The supplies from the Upländer dairy's region seem to be secure. KREINS and CYPRIES (2000) analysed the effects of more flexible production quota transfer regulations in West-Germany. They analysed the economic conditions of the regions. „Als haupterklärende für die regionale Wettbewerbsfähigkeit wirken die Milchleistung, der Milchpreis, der bestandsgrößenabhängige Arbeitsbedarf sowie die land- und außerlandwirtschaftlichen Opportunitätskosten der Arbeit." (→ auf englisch übersetzen!) [23] The departments of the Upländer dairy's region offer competitive advantages for dairy farmers in West-Germany. A further deregulation of the delivery quota transfer system would increase the milk supplies in region for 750 kg per ha which is one of the highest scores in West-Germany.
Because of these ascertained facts dairy farmers in region are in a favoured position for surviving pressuring prices from onward positions of the FSC.
The SCI/Verkehr (2004) analysed in a study for Northrhine-Westfalia FSCs from a logistical point of view. The study delivers possibilities for optimising commodity flows of dairy FSC´s. Dairy processors as the UBM are moving to locations nearby supply centres for minimizing their costs of logistics. „Neben den anfallenden Kosten für die Beschaffung der Rohmilch und der Distribution der Produkte muss die stark transportkostenorientierte Branche durch die wirtschaftspolitische Entwicklung (Ökosteuer, Kraftstoffpreise) zusätzliche Steigerungen ihrer

[18] Source, BLE, 2003
[19] Source, BLE, 2003
[20] Source, HSLA, LDS, 2005.
[21] Source BMVEL, „Buchführungsergebnisse der Testbetriebe", electronic resource, 2005.
[22] Pohlmann, Saathoff „Der Kreis Waldeck-Frankenberg ist der größte hessische Milchproduzent", review of the hesse dairy market by the RP Giessen, 2001.
[23] Kreins, Cypries, „Entwicklung der regionalen Wettbewerbsfähigkeit im Bereich der Milchproduktion und Folgen für die Landnutzung", 2000.

Logistikkosten in Kauf nehmen."[24] That for the geographical concentration of dairy processors is going to increase in the future. „Da die Molkereiwirtschaft stark von der Milchdichte am Standort abhängig ist, wird die Bedeutung der Verfügbarkeit des Rohstoffs Milch bei zukünftigen Investitions- und Standortüberlegungen der Branche zunehmen."[25] The focused region has a high concentration of milk supplies and as described it could increase. That for it is also interesting for dairy processors to saddle down in the area.
Momentary there are seven dairy processors in region. In the wider area there are numerous facilities for processing milk.[26] The Humana Milchunion eG, the second largest dairy in Germany with a yearly processing capacity of two million tons, has eight settlements in the area.
Dairy processing in the organic milk sector is certainly not as high developed as it is for conventional milk. In Germany there exist 40 businesses processing organic milk. [27] The delivery of organic milk in year 2003 was at 371,000 t. [28] 29 dairies in Germany processed 95% of the organic raw milk supplies. Also included is the UBM with a need for organic raw milk of yearly 15,000 t. In Hesse there are only three organic dairies. They are collecting nearly the whole amount produced in Hesse. [29] Leaks in collection exist because of direct selling or missing sales channels for organic farmers. [30]
In Northrhine-Westfalia there are 11 businesses processing organic milk. 12 businesses are processing and selling their own milk. [31]
Organic dairy farmers also benefit from the competitive advantages in region which were analysed by Kreins and Cypries. A further development of marketing structures for organic products all along the FSC is necessary to let the market volume grow. Producers need secure sales channels to guarantee them selling the whole amount of their production. [32] An increase of processing capacities in region is necessary to widen the amount of supplied dairy products.

6.3.2 Economic effects in region sourced by operations of the UBM

6.3.2.1 NVA in region

Although dairies in general had to face higher costs for packaging and ascending costs for other materials and services bought the UBM achieved to lower those factors of cost.

[24] SCI/Verkehr, „Logistikreport Ernährungsindustrie Nordrhein-Westfalen. Warenstrombetrachtung und Optimierungsmöglichkeiten für die Praxis", in order of NEW.S and the land Northrhine-Westfalia, Düsseldorf 2004.
[25] SCI/Verkehr, „Logistikreport Ernährungsindustrie Nordrhein-Westfalen. Warenstrombetrachtung und Optimierungsmöglichkeiten für die Praxis", in order of NEW.S and the land Northrhine-Westfalia, Düsseldorf 2004.
[26] The RP Giessen reports that in year 2001 16 dairy processors collected 790.000 t of raw milk in Hesse. In Northrhine-Westfalia 25 dairy businesses exist land the Landesverband für Milchwirtschaft.
[27] ZMP, „Marktanalyse", No. 36/ September 2004.
[28] ZMP, „Marktanalyse", Nr. 36/ September 2004.
[29] HDLGN, „Ökologische Milchviehhaltung", Kassel, 2002
[30] There is still a big amount of organic milk which is sold as conventional because of grievances in marketing structures.
[31] Source, BLE, 2004.
[32] Schramek, Schnaut, „Motive der (Nicht-) Umstellung auf Öko-Landbau", in Ökologie & Landbau, p. 44-46, 131,3/2004.

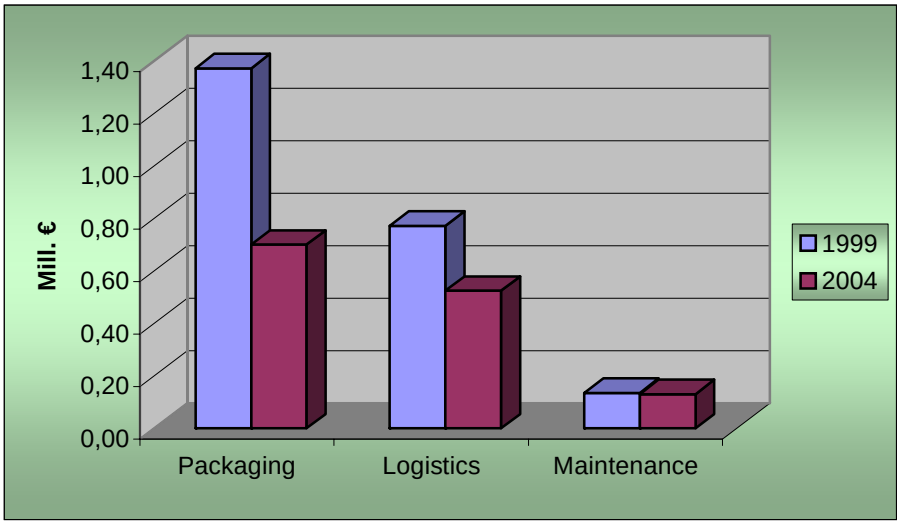


Figure 17: Costs of logistics, packaging and maintenance (source: own survey).

Between 1997 and 2001 the Upländer dairy achieved to raise the selling price for organic milk about 0.05 €.[33] At the moment buying prices for organic milk from UBM are at 35 Ct/kg. Conventional milk costs 32 Ct/kg.[34]
Compared with other organic dairies in Germany the Upländer dairy is paying a relatively low price to their milk suppliers.

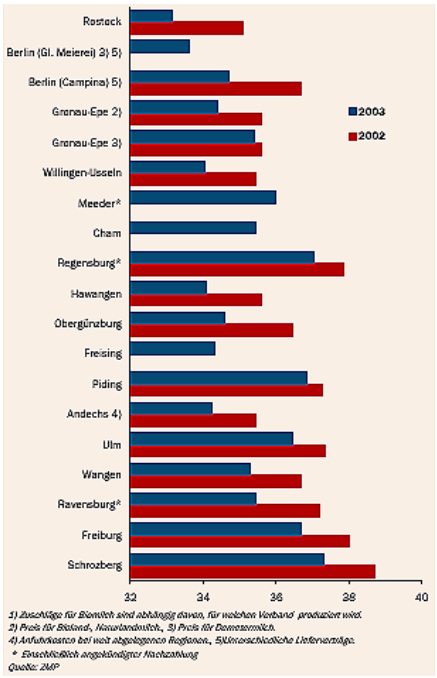


Figure 18: Dairy buying prices for organic milk(source: ZMP, (Datum?).

The low procurement prices are also a result of the advantageous circumstances of production in the region. The farmers can effort to get the low prices because of smaller cost of production compared to other regions in Germany. The Upländer dairy is able to supply the market with low cost organic products without putting a disastrous pressure on their milk suppliers.

[33] Source Upländer Bauernmolkerei.
[34] Source survey at the UBM.

Calculating the value added from the Upländer dairy and their milk suppliers we get following results:

	Value Added 2004 [mill. €]
UBM	**2.16**
Dairy Farmers	**3.49**
Total	**5.65**

Table 5: Value Added in region for year 2004 (source: own survey and BMVEL, Datum?).

Without the dairy the farmers couldn´t produce a high value added as it is. Organic farmers could achieve an additional value added of 1.6 million €.[35] If the dairy wouldn´t guarantee sells to their suppliers value added in region would decrease.
In the future processing conventional milk is going to be replaced by milk without genetically transformed additives.[36] → eher: genetically modified organims (GVO)? The Upländer dairy is one of the first dairies in Germany to supply such sort of milk. If the dairy achieves to put through higher prices for "milk without GVO " the value added is going to rise. Because of higher costs for feeding the cattle the farmers are going to demand higher prices for that sort of milk. If the Dairy is able to secure farmers margins the supply is going to be present. On the other hand it depends on the acceptance of consumers for the new product if selling prices can be kept high to insure the dairy a higher value added than for conventional milk.

6.3.2.2 Employment effects

Direct employment arise from jobs provided directly in the dairy. With founding the dairy in 1996 20 employees were needed.[37] Today the Upländer dairy provides jobs for about 26 employees.[38] In nearly 10 years direct employment rose for 30 %.
Upländer dairy processed 9 million litres of milk at all, today it is processing around 20 million litres.
Processing organic milk is as labour intensive as processing conventional milk is. Both need two working hours for processing 1000 litres of raw milk.
A further extension of labour can be achieved by rising the processing quantity at all.
If we shift the focus from direct to indirect employment we have to analyse employment effects of at least two groups:

- Dairy farmers
- Logistical services company

Because of processing organic milk the Upländer dairy arouses heavy employment effects at the sector of dairy farmers.
A single farmer has not the selling power to attain a suitable price for his milk. To bundle supply and increase the market power of milk producers the co-operation "Erzeugergemeinschaft Hessen" → Abgleich mit vorne: EZG Waldeck w.V. was founded. By bundling supply through co-operations not only selling power can be increased also buying prices for materials and services bought can be decreased.[39]
In 1996 the coop decided to become the main associate of the Upländer dairy which is a limited corporation. The coop holds a 65 % share of the Upländer dairy.[40] → Abgleich mit vorne! Five

[35] Own calculation on basis of the data of the BMVEL, „Buchführungsergebnisse der Testbetriebe", electronic resource, 2005.
[36] Pasch, „Molkerei verarbeitet konventionelle Milch ohne Gentechnik", Frankfurter Rundschau, 21.06.05.
[37] Knebel, „Molkereiwirtschaft und Regionalentwicklung am Beispiel der Molkerei Usseln", p.74, Diploma thesis, GH Kassel, Kassel, 1995.
[38] Ecozept, IfIS, "SUS-Chain Martigny 2004-Case study presentation: Upländer Bauernmolkerei'', electronic resource, 2004.
[39] Dempsey, Kumar, Merkel, Loyd, „A value culture for agriculture", The McKinsey Quarterly, Number 3, 2002.
[40] Interview with Karin Artzt-Steinbrink.

members of the coop are also members of the supervisory board of the dairy.[41] To achieve that, the farmers stood as guarantors for the "young" dairy.[42] The reason for the vertical integration along the FSC is clearly visible.
The dairy guarantees to buy all milk from farmers production, which is regulated by an internal delivery quota.[43] The prices are made by the heads of the supervisory board in respect to both farmers and dairy.
Without these prerequisites most of the farmers couldn´t sell the bulk of milk produced at those prices. Most of the smaller farms could not achieve higher prices for organic milk because they are lacking of sales channels. A common problem in organic milk sector.
This point of view strengthen the argue that the Upländer dairy is insuring jobs and income for about 80 farms.
The coop admits only organic farmers to become members. Organic farming provides 34 % more jobs than conventional.[44] An average organic farm employs two paid workers and 1.6 not paid workers (family members).[45] In comparison a conventional farm employs 1.6 paid and 1.5 not paid workers.

Hence the "Erzeugergemeinschaft Hessen" → Abgleich mit vorne: EZG Waldeck w.V. with 80 organic farms employs 280 persons at all. The average earned income of workers in the agricultural sector in FY(?) 2003/04 was at 26,760 €.[46] The income of farm owners and the not paid workers results from the surplus of the farm. The average surplus of an organic farm was at 33,894 €.[47]. A comparable conventional farm earned 23,428 €.
The income out of employment generated by the coop was nearly 7.0 million €..
The logistical services provider occupy 5-6 employees for collecting milk and delivering the Upländer dairy's products.[48]
The average income is estimated at 30,000 €. The generated income at the logistics sector is around 150,000 to 200,000 €. The total employment generated by the UBM is at 320 employees. They are receiving an income of at least 8 million €..

6.3.2.3 Income generated in region – Calculating the LM3 score for the UBM

Local Multiplier 3 (LM3) is a tool for visualising and measuring money flows in any focused area. It was developed from the New Economics Foundation (NEF) in collaboration with the Countryside Agency. "We aimed to build out from their existing programme of work that explored how money flows through a neighbourhood and how communities can increase the circulation of existing money through developing their own initiatives."[49]
With developing and testing the tool the NEF made more visible the seemingly invisible economic benefits. The LM3 tool has been tested in 10 different communities and five different economic sectors. Through using the tool they have been able to demonstrate:[50]

- Income into organic food box schemes generates about twice as much for the local economy as supermarkets;
- Maintaining open at least one cash access facility in a village is vital to the survival of the shops, and therefore the livelihoods of many people, in the immediate area;
- Social enterprises have a strong impact on the local economy – and a keen desire to improve themselves still further;

[41] Interview with Karin Artzt-Steinbrink.
[42] Interview with Karin Artzt-Steinbrink.
[43] Interview with Bernd Kramer.
[44] Mayer, „Darstellung der Ertragslage der Öko-Betriebe in Deutschland",p.4 ,Ökomarkt Forum Nr. 8, 2005.
[45] Source BMVEL, „Buchführungsergebnisse der Testbetriebe", electronic resource, 2005.
[46] Source BMVEL, „Methodische Erläuterungen zur Auswertung der Buchführungsergebnisse der Testbetriebe", electronic resource, 2005.
[47] Source BMVEL, „Buchführungsergebnisse der Testbetriebe", electronic resource, 2005.
[48] Interview Bernd Kramer.
[49] Sacks, Justin, „The money trail- measuring your impact on the local economy using LM3",p. viii, NEF, 2002.
[50] Sacks, Justin, „The money trail- measuring your impact on the local economy using LM3",p.viii, NEF, 2002.

- Welfare benefit take-up campaigns can have a significant positive impact on the local economy since poorer people have a greater tendency to spend their income locally; and
- There is much potential for procurement officials to focus their spending patterns towards initiatives that have a stronger impact on rural economies.

The starting point for measuring money flows is the generated income in the area. Multipliers were introduced by John Maynard Keynes in the 1920´s. For example the investment multiplier measured how investments in national economy are influencing the national income. Investments are not generating income only in the direct way there is also indirect income which benefits the economy. Those multipliers developed by Keynes are to complex for non-experts and they just deliver a result for decision makers without understanding how economy works. But decisions for sustain development in rural economies demands for a deep understanding how money enters and leaves the area of interest. Through NEF´s results decision makers could clearly identify the leaks in rural or local economy and improve performance.[51]
The investment multiplier shows how national income benefits from investments. For example 100€ are raising national income for 150€ if the multiplier is at 0.5. That´s because some of the 100€ invested are reinvested in materials and personnel and so on. The NEF simplified the complex way of finding out the multiplier. The method is separated in three rounds:

1. Round: The first step is to determine the initial income of the organisation.

2. Round: Determine how much your organisation spends locally versus non-locally. The principal items organisations spend money on in the local area tend to be: staff, contractors and sub-contractors, suppliers of goods and services, investment in the company, and rent/mortgage.

3. Round: Determine how much the various local people and organisations who receive money from your organisation then re-spend their incomes. The organisations will spend money on similar local items as your organisation. The principal items people spend money on in the local area tend to be food, clothing, entertainment, and rent / mortgage.

Calculating the LM3 score for the UBM

1. Round: The initial income of the dairy was in 2004 around 11 million €.

2. Round: In chapter one we drew the regional focus for the study. The area where milk supplies are coming from was considered to be the referential system. Hence all expenses for buying milk are in region.
All expenses inside the drawn region are classified to be In-Region. All expenses outside the considered departments are classified as Outside-Region. The data was collected by an own survey.

Calculating regional expenses for the LM 3 score	**In-Region**	**Outside-Region**
Expenses		
Farmers	6,210,000	
Staff	850,000	
Packaging		700,000
Logistics	525,000	
Energy and water	180,000	
Maintenance	104,000	26,000

[51] Sacks, Justin, „The money trail- measuring your impact on the local economy using LM3",p.4, NEF, 2002.

Petroleum	65,000	
Rent	60,000	
Taxes	35,000	5,000
Consultancies	40,000	
Insurances	20,000	
Stationery	9,000	3,000
Refuse collection	6,000	
Clothes	4,500	
Total	8,108,500	734,000

Table 6: Regional expenses of the UBM (source: own survey).

3. Round: In these round suppliers located in the focused region were asked where they spent their income. The main recipients of regional payments from Upländer dairy (milk suppliers and staff; both groups received nearly 80% of the payments) were surveyed for that reason.

For the other groups approximations will be inserted in the calculation.

Calculating regional expenses for the LM 3 score			
	Payments	**Rate**	**Re-Spend**
Farmers	6,210,000	78,10%	4,850,010
Staff	850,000	69,50%	590,750
Logistics	525,000	65%	341,250
Energy and water	180,000	75%	135,000
Maintenance	104,000	75%	78,000
Petrol/Fuel	65,000	50%	32,500
Rent	60,000	75%	45,000
Consultants	40,000	75%	30,000
Insurances	20,000	50%	10,000
Stationery	9,000	65%	5,850
Clothes	4,500	65%	2,925
Total Re-Spend			6,121,285

Table 7: Regional expenses of the Suppliers (source: own survey).

Calculating the LM3 score

To get the LM3 score we use the findings.

Round 1: 11,000,000 €

Round 2: 8,108,500 €

Round 3: 6,121,285 €

Plugging it into the LM3 formula we get:

$$\text{LM3} = \frac{11{,}000{,}000 + 8{,}108{,}500 + 6{,}121{,}285}{11{,}000{,}000} = 2.29$$

The LM3 score is with 2.29 on a relatively high level. Every 1€ spent from the UBM in the region generates additional 1.29€.

This high level depends on the area which is considered to be the referential system and the kind of supplies needed from the centred company.

The drawn area is relatively large. The economic structure is as analysed well developed. Regional sourcing especially on the dairy sector is possible on a high degree.

With the findings out of the LM3 score it is approved that regional economy benefits from value chains with short transporting distances because the money circulates on a high level in the region.

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