

# How to Defend Market Shares against Foreign Competitors: The Case of Organic Apples in Germany

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## **Abstract**

While generally the share of imports is increasing in the German organic fruit and vegetable market, the situation seems to be better in the case of organic apples, and the share of domestic produce is comparably high at about 55 %. This contribution answers the question on the reasons and the success factors within the organic apple supply chain. The focus of the research is laid on the relationship quality and on collaboration activities. In order to create a better understanding of the supply chain some information on production, imports and main distribution channels is provided. Structured interviews were conducted with selected actors of the supply chain. Success factors of the organic apple supply chain turned out to be the high relationship quality between actors which results in intense collaboration. Actors at all levels of the supply chain are highly committed and describe their business relations as satisfying and trustful. However, part of the success is also related to the pronounced retailers and consumer preferences for domestic apples.

**Keywords:** *Supply Chain Management, relationship quality, organic farming, competitiveness*

## **1 Introduction**

Sales of organic food are still increasing in Germany (BÖLW, 2012). This development is associated with more and more international trade and with growing requirements regarding quantities and qualities. Increasing shares of imports of organic food are reported even for products that can be produced in Germany. Thus, the question on the competitiveness of German organic food producers arises.

Apples are an important product within the German organic fruit industry and account for about 20 % of the market for organic fresh fruit (AMI 2011). On the German market for organic apples, additionally to German apples also apples from other European countries (Italy/South Tyrol and Austria) and from overseas (Argentina, Chile and New Zealand) are sold. Compared to other fruit and vegetable sectors the share of domestic apples seems to be increasing: it was reported to be at 48 % in 2006 (ZMP 2008) but augmented to 55 % in 2008 (ZMP 2009). Obviously, German producers were successful in increasing the market share in the years 2007 and 2008 which were characterised by a rather high German production. Even apples which were produced on farms in the process of conversion to organic farming, i. e. apples not yet fully organic were preferred over 'new' organic apples from overseas. This is another indicator for the high preference for German organic apples. Hence, the German market for organic apples behaves differently to other organic fruit and vegetable markets regarding international competitiveness. Thus, this industry might serve as an example for other organic food markets.

The aim of this research was to identify the specific characteristics of the market of organic apples and to determine the success factors. Attention was laid on market structure and on relationship quality among actors of the supply chain. Finally, recommendations for other organic fruit and vegetable industries were generated.

## **2 Theoretical background**

The functioning of markets and of supply chains depends on various factors. These factors are the relation between supply and demand, the market structure which refers to the number of suppliers and customers and their corresponding market shares, the degree of market transparency, the existence of market barriers and the degree of integration of enterprises (Knieps 2008; Treyer 1996). A factor with a high impact on the market interactions and particularly on the integration of enterprises is acknowledged to be relationship quality (Gellynck et al. 2011; Naudé and Buttle 2000). In this regard trust, satisfaction, commitment, coordination, communication, joint problem solving, goal congruence, close personal relationships, joint investments, power and profit are named as 'major constructs of relationship quality' (Naudé and Buttle 2000: 355). While the authors cited by Naudé and Buttle (2000) did not agree in all constructs relevant for relationship quality, they mostly concurred regarding trust, satisfaction and commitment (cp. Gerlach et al. 2007). These factors are closely related to each other and not independent.

The focus of this contribution is laid on trust, satisfaction and commitment. Trust is a multi-dimensional construct with contractual trust, competence trust and goodwill trust being its components. Contractual trust refers to the moral dimension of keeping contracts and promises. Competence trust is aligned to the confidence in the partners' capabilities, and goodwill trust is based on the preparedness of partners to cooperate and 'to do more than expected' (Batt 2003: 67). Particularly under conditions which are characterised by pronounced information asymmetry and/or uncertainty, trust is of major relevance (Welpe 2008). This is the case in organic apple production, since yields are instable and do not qualify for fixed long-term arrangements. Satisfaction is the degree to which expectations meet reality. The expectations depend on general requirements and on the experiences of business partners. Satisfaction is a cumulative evaluation of past experiences and is a prerequisite for partners to enter into committed business relations (Gerlach et al. 2007). Commitment is understood as the deeper insight and the willingness to engage for the quality of existing relationships, also without any immediate reward. It includes dedication and faithfulness in business relations (Naudé and Buttle 2000).

Cooperation and collaboration are different ways of voluntarily working together with other enterprises in order to realise mutual benefits. In contrast to cooperation which usually is contract- and asset-based, collaboration is less formal and more flexible, and mostly is not fixed by written contracts. With regard to cooperation, typically horizontal and vertical cooperation of different intensities are distinguished. Benefits of horizontal cooperation are cost reduction, increases in revenues or the full use of growth potentials. Advantages of vertical cooperation are the compliance to higher product quality standards, better traceability and the reduction of transaction costs. Similar differentiations can be made with various forms of collaboration. Driving factors of collaboration are common and mutually compatible goals and advantages in various regards which are not achievable individually. Also collaboration has the potential to improve the economic performance of the involved

businesses markedly (Weaver 2009). Since collaboration is not based on fixed contracts a much higher degree of trust is needed than for cooperation. Collaboration can be understood as an expression and a consequence of high relationship quality and to a large extent determines the relative negotiation power of actors and by that the competitiveness of enterprises.

### **3 Methodological approach**

The analyses concentrated on organic apples for table consumption and - since direct sales are only slightly affected by international competition - on apples distributed other than directly to the consumers.

The analyses consisted of four steps. Starting point was the compilation and analysis of existing data on production of organic table apples in Europe. The data was made available by the Europäisches Bioobstforum (European Forum of organic fruit, EBF). The EBF is a union of European producer groups and is organised as registered association. The members report on their production, storage and distribution quantities as well as on product prices to the German AMI (Agrarmarkt Informations-Gesellschaft, before ZMP, Zentrale Markt- und Preisberichtsstelle). From these data and the data of additional reporters AMI elaborates annual production statistics. Experts estimate the share of European production covered by these numbers at about 65 % to 70 %. In our research this data was used to document the annual organic table apple production from 2007 to 2011.

The second step consisted in an enquiry among main importers of organic apples on the German market on the imports of organic apples. 17 importers acting on the German organic apple market were identified and 13 of them answered our query. They provided numbers on the imports from different countries for 2009 and 2010. In two additional cases data for 2009 were available from another research project and we resigned from approaching these importers again.

With the aim of giving a description of the main distribution channels in the German market the members of the EBF were asked to fill in a table on their main customers and their corresponding shares in sales in 2009 and 2010.

In the last step a survey among actors of the supply chain of organic apples in Germany was conducted. By means of in-depth interviews European organic apple producers and wholesalers were asked on their experiences with suppliers, customers and the relationship quality.

Generally expert interviews are helpful during the exploration phase of research in order to shorten long observation processes or to generate theories and/or hypotheses (Bogner and Menz 2005). Experts are seen as representatives for other actors and can give a quick overview over central aspects of the research under question. Experts are often highly motivated to participate in interviews, particularly when they are interested in the research process by themselves. Naturally, experts do not provide 'objective information'; instead they will exhibit personal opinions and valuations.

In order to obtain comparable results from expert interviews, interviews usually are based on structured guidelines. The way of analysing the results depends on the research question. In this research 'thematic coding' was applied, which is understood as a common sense

technique (Kuckartz 2007). Thematic coding needs the expertise of the researcher in order to extract the information relevant for answering the research question (Kuckartz 2007).

In this research a structured questionnaire with both closed and open questions was developed. It was adapted to the requirements of the different actors of the supply chain. The topics of the questionnaires were supply and distribution, number of business partners, requirements regarding business partners, cooperation behaviour, contracting and relationship quality with aspects like satisfaction, trust etc. Interviewees were asked to give three expressions in way of 'free association' which describe best their business relations with suppliers and customers. Since commitment is difficult to ask for directly, some of these expressions were used to deduce on the degree of commitment. Additionally, goal congruence, the duration of business relations and the inclination to change business relations were used as indicators for the degree of commitment. The interviews ended with questions on specific activities realised with the aim of market regulation, the perception of the actual situation and further perspectives of the organic apple market in Germany.

In order to take all steps of the supply chain into account, growers, wholesalers, distributors and retailers of the organic and the traditional food sectors were interviewed. In total, 18 telephone interviews were conducted which lasted between 45 and 90 minutes. The results, particularly those referring to production, imports and distribution were discussed with and verified by experts from the organic apple supply chain.

## **4 Results**

This chapter starts with a description of the supply of organic apples, focussing first on European production and imports. The following description of production structure in Germany and on main distribution channels aims at helping to understand power relations between actors. Finally, the quality of business relations within the supply chain will be described and discussed.

### *4.1 Supply of organic apples in Europe and imports to Germany*

Production of organic apples in Europe has increased markedly since 2007 and has exceeded 100 000 t in 2011 (Table1). This tendency can be observed in all mayor European production countries. Largest European organic apple producer is Italy and particularly South Tyrol with a share of about 40 % of the European production. The numbers in Table 1 underestimate the full extent of growth in the Italian production since apples in conversion to organic production are no longer included since 2009. In Germany, production decreased since 2007 disregarding the marked growth of production area because of unfavourable weather conditions. Only the quantity harvested in 2011 is at the actual German production potential. Austria is the third country with significant relevance for the German market. Here large investments in conversion to organic apple production took place since 2007.

**Table 1.**  
Production of organic table apples in European countries (t)

	2007	2008	2009	2010	2011
Italy (South Tyrol) <sup>1)</sup>	28 809	31 556	34 036	38 413	42 469
Germany	32 511	31 164	29 207	25 198	41 751
Austria	2 244	7 748	10 492	9 995	12 018
Netherlands	4 774	3 903	4 670	3 593	6 198
Belgium	2 147	2 015	2 498	2 287	2 428
France <sup>2)</sup>	1 110	1 570	1 749	2 224	3 158
<b>Total table apples</b>	<b>71 595<sup>3)</sup></b>	<b>77 956</b>	<b>82 652</b>	<b>81 710</b>	<b>108 022</b>
<b>Total production (incl. production for industrial purposes)</b>					
	<b>75 029</b>	<b>82 919</b>	<b>94 673</b>	<b>93 369</b>	<b>124 325</b>

<sup>1</sup> Since 2009 South Tyrol does no longer report production of apples in conversion

<sup>2</sup> The numbers for France are not complete.

<sup>3</sup> The corresponding number in the source is only 68 995 t which is less than the sum of the quantities by country. For consistency reasons the number was adjusted.

Source: Own compilation based on EBF (2011)

Another perspective are the imports of organic apples to Germany (Table 2).<sup>1</sup> Organic apples are imported from other European countries and also from overseas. Not surprisingly, the largest European producer Italy is also the largest exporter to the German market.

**Table 2.**  
Quantities and origin of imported organic apples in Germany

Origin	Production (t)		Share (%)	
	2009	2010	2009	2010
<b>Europe</b>	<b>14 630</b>	<b>16 310</b>	<b>44.3</b>	<b>61.5</b>
Italy	10 210	12 000	30.9	45.2
Austria	3 700	3 500	11.2	13.2
Netherlands	320	530	1.0	2.0
Slowakia	400	280	1.2	1.1
<b>Overseas</b>	<b>18 380</b>	<b>10 217</b>	<b>55.7</b>	<b>38.5</b>
Argentina	8 406	4 637	25.5	17.5
Chile	942	781	2.9	2.9
New Zealand	8 032	3 809	24.3	14.4
Unknown	1 000	990	3.0	3.7
<b>Total</b>	<b>33 010</b>	<b>26 527 *</b>	<b>100</b>	<b>100</b>

\* Incomplete, since numbers of importers are missing. These actors imported about 6 000 t in 2009.

Source: Own research

<sup>1</sup> Since producers and their organisations in Austria and in Italy did not answer to the enquiry, expert estimates were used instead. According to them about 30% of the apples harvested in South Tyrol and 30-40 % of the quantities produced in Austria go to the German market.

From 2009 to 2010 the relative importance of European imports over imports from overseas increased markedly. Comparing the numbers it has to be taken into account that in 2010 the numbers of importers are missing who imported about 6 000 t in 2009, mainly from overseas (see Chapter 3). Adding this quantity to the 10 000 t for 2010, the decrease in imports from overseas is still at about 10 %, and the share of imports from overseas in all imports was at about 50 % in 2010.

#### 4.2 *Production structure and main distribution channels in Germany*

Going more deeply into the German situation some information on the numbers of growers is given. About 260 growers produce organic table apples which are mainly marketed via retailers (Zander 2011). Organic apple production in Germany mainly takes place in regional production clusters around the Lake Constance, the Niederrhein and the Niederelbe regions. Due to these regional clusters producer organisations and wholesalers can bundle large amounts of produce at comparably low transportation costs. Additionally, they realise economies of scale in storage, sorting and packaging. They are able to offer a large variety of different gradings, each of them big enough to satisfy the requirements of the retailers. Tight relations exist particularly between growers and wholesalers, since quite a few of the wholesalers are spin-offs of organic apple producers of the first generation. They still are closely connected with the growers also personally.

In all these production clusters growers and producer organisations face various marketing opportunities namely organic and traditional distributors as well as retailers. Due to the strong demand also wholesalers have a range of potential customers. Because of supply shortage during the last years, traditional retailers had difficulties to get access to domestic organic apples.

Market transparency turned out to be high at all steps of the supply chain. In this respect the 'Europäisches Bioobstforum' (European Organic Fruit Forum) is of high relevance, since it engages in reporting e. g. of harvested quantities and qualities. Members meet regularly. Also proximity in the regional production clusters help the information flow and market transparency.

In order to better understand existing distribution channels of German apple growers, growers and wholesalers (such as producer organisations) were asked for their customers in 2009 and 2010 (Table 3). The mayor share of German organic apples is sold to whole food distributors and less than 40% is marketed via traditional retailers. These numbers contradict the numbers published by AMI (2011) which are based on household panel data. According to this data the share of traditional retailers is much larger at about 58% and that of whole food traders only at 28%. The reason for this discrepancy is supposed to be the higher share of imported apples in the traditional retailers, since imports were not subject of this particular enquiry.

**Table 3.**  
Distribution channels of German apple producers <sup>1)</sup>

	Production (t)		Market share (%)	
	2009	2010	2009	2010
Whole food distributors	10 426	11 196	55.9	55.6
Whole food retailer	461	496	2.5	2.5
Traditional whole salers	369	1 130	2.0	5.6
Traditional retailer incl. discount stores	7 285	6 950	39.0	34.5
Other	122	375	0.7	1.9
<b>Total</b>	<b>18 663</b>	<b>20 147</b>	<b>100.0</b>	<b>100.0</b>

<sup>1)</sup> The quantities for 2010 are at about 80% of the reported production according to table 1. Taking into account losses during storage of about 20% the compilation for 2010 is almost complete.

Source: Own research

#### 4.3 *Relationship quality and collaboration*

In this research the relationship quality was characterised mainly by the constructs satisfaction, trust and commitment. Different aspects were considered when assessing the satisfaction with suppliers: satisfaction with product quality, with varieties and gradings, with product prices, with supply continuity and flexibility and with the general business policy of suppliers. Satisfaction with customers was evaluated using the criteria producer price, terms of payment, ordering behaviour, purchase promises, general business policy of customers and their interaction with suppliers. Business relations in the supply chain of organic apples at all steps are characterised by a high degree of satisfaction. Only the ordering behaviour was described to be sometimes too short-term. The general satisfaction also includes satisfaction with purchase agreements which is noticeable since mostly no written contracts on quantities exist and the risk was reported to be always with the suppliers.

At all steps of the supply chain, actors described the relationships with business partners to be trustful. Only very few actors assessed the relationships to be improvable regarding trust. When asking the actors for three expressions which describe their relationships with business partners, 'trustful' was named most frequently.

Two indicators were used to catch the degree of commitment: the existence of joint business goals (goal congruence) and the duration of the business relations. The inclination to change partners is closely related with this later indicator. Additionally, the expressions used spontaneously to describe the business relations were used to infer to the degree of commitment. Most interviewees reported on far reaching goal congruence. Joint goals of growers and their customers were the provision of high product qualities, increase of sales quantities and returns as well as sustainable and reliable business relations. The common goals at the following levels of the supply chain varied only little. For some of them 'fostering the organic idea' was an important issue. At all levels long lasting business relations exist. These relations mostly were initiated when starting with producing or marketing organic apples. Changes in business partners only occur by acquiring additional partners in order to

market higher quantities or to amplify the range of products. Asked for alternative suppliers or customers, interviewees had some difficulties in answering. Although, theoretically there were alternatives, none of the actors could think of advantages of replacing actual business partners. Establishing new business relations would take much effort and time until they would be comparable to the old ones. Business relations were described as 'personal', 'friendly' and 'amicable', also indicating at a high level of potential commitment.

The long lasting business relations and the limited supply were the reasons why traditional retailers had difficulties in listing organic German apples. They entered only recently into the market for organic food when most business relationships were already established. This is also the reason for the higher share of imported apples in these traditional retailers.

The high relationship quality resulted in intense collaboration between business partners in the organic apple supply chain. Collaboration without fixed contracts dominates by far classical contract- and asset-based cooperation. The regional production clusters are another driving factor of collaboration. Collaboration takes place in form of joint storage, sorting and distribution. That way, large and uniform lots can be provided. Suppliers exchange products with competitors in cases of shortages in order to comply with the needs of their customers. This is also the case at the level of growers and wholesalers / producer organisations. They also trade with organic apples from neighbouring countries in case own or German produce falls short. Customers show high loyalty with their suppliers by preferring to rely on 'old' suppliers instead of looking for new suppliers. The membership in one or the other organic farmers' organisation is without relevance, given that the grower is member in any one of them. It can be assumed that this business behaviour contributes to a large extent to calming down the price war which commonly disfavours producers. The high willingness to collaborate also among growers is supposed to be caused by the fact that apples are a permanent crop which needs high investments and specific knowledge. Growers cannot easily switch to another product in case of unfavourable market situations like other growers. Whole food distributors collaborate by joint product acquisition to realise better prices and conditions and to improve the information basis. The exchange of contacts with growers helps securing future supply of produce. However, these measures are not specific for the organic apple market since they are the same for most organic fruit and vegetables. Actors of the supply chain also collaborate vertically by jointly planning the varieties which are to be planted by growers and coordinated offers also in traditional retailers.

## **5 Conclusions**

The investigations confirmed the hypothesis from the beginning that German apple growers and 'their' wholesalers are in a good market position. Growers are mostly satisfied with the rather stable product prices they receive. That way they are able to invest in production and storage technology which serve to reduce annual fluctuations of production and to improve product quality. In doing so, growers are in accordance with customer requirements regarding quality and availability of local or domestic apples. Wholesalers and retailers thus are facing reliable business partners on the production side.

Success factors within the organic apple supply chain to a large extent are caused by the high relationship quality between actors. It can be characterised by high degrees of satisfaction and trust and very committed business partners. Actors agree in the joint goal of providing the German market with high quality organic apples from local or domestic production at



prices which grant economic sustainability for all partners. Regional production clusters foster bundling of produce and enhance information flow. They also help creating integrative structures between growers certified according to the standards of different organic farmers' organisations. All these factors jointly result in pronounced collaboration activities both horizontally and vertically.

However, the success of the organic apple supply chain is not only due to the high relationship quality. Part of the success is caused by the product 'apple' itself. Apples are a permanent crop requiring specific production technology and know-how which imply path dependency. This fosters the willingness to collaborate and the commitment of growers. Further, apples can relative easily be stored so that they are available (almost) year round. Apples face a specific perception of consumers since they have a long consumption tradition. Consumers, at least partly, have a good knowledge of varieties and a pronounced preference for local and domestic produce. The term 'Kulturgut' (cultural good) may help to understand the particular relationship between consumers and the 'apple'.

Due to the specific product attributes of the 'apple', the results are not unrestrictedly transferable to other product markets. However, there is evidence of the central relevance of high relationship quality and trustful collaboration between producers and traders. Joint objective of German producers and wholesalers also in other product markets should be the provision of the German market with high quality German produce – instead of pursuing individual goals. Quality and taste must be the focus of production and trade instead of price considerations. Criteria for the differentiation in the market with regard to foreign competitors could be specific varieties, particularly suitable for the taste of German consumers.

However, the achievement of high relationship quality depends largely on the persons involved and their integrative abilities. In the apple chain, actors are successful by acting according the phrase 'We're all in the same boat'.

Further research should concentrate on improving the data basis regarding imports to the German market. Regular data collection from importers would help to better assess the competitiveness of German apple growers over time. In this research the qualitative research approach of expert interviews with 18 actors had been applied. Although this number is large enough to render reliable results in qualitative research, additional research on this topic may help to even better understand the specific strengths of the organic apple supply chain.

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