

# THE ORGANIC FOOD SUPPLY CHAIN IN RELATION TO INFORMATION MANAGEMENT AND THE INTERACTION BETWEEN ACTORS

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## Abstract

Conventional retailers play a significant role in selling organic food, and therefore, it is important to understand how the demand - supply chain of organic food works as an element of the conventional food system. The proportion of organic food in the conventional food chains is small, and this poses a great challenge to the performance of the chain. Surveys and case specific studies on consumers and supply chain actors indicate that the changes in the conventional food system have an impact on the organic chain. The main obstacles to the optimisation of the organic food chain include poor information management, insufficient communication with consumers, and the diverging objectives and needs of the actors of the chain.

## Introduction

Supply chains of organic products are often considered as alternative supply chains, which are shorter, more locally oriented, and in which the producers and consumers are more tightly connected to each other than those in the conventional food supply chains. In spite of this, the involvement of retailing groups into the organic supply chain has increased the market share of organic products in many European countries (Finfood 2003a, Hamm *et al.* 2002).

Despite the rapid increase in the demand for organic products in many western countries, the market shares remain small (Hamm *et al.* 2002). According to consumer surveys conducted in Finland (Finfood 2003a), the potential demand for organic food is greater than its market share indicates, but the supply does not satisfy the demand in terms of quality-price ratio, availability and diversity of the product assortment. Therefore, one needs to focus on the functionality of the demand-supply chain.

The main problems of the organic supply chains identified in earlier research at European and Finnish levels are: imbalance between supply and demand, high operating costs, lack of co-operation between actors of the chain, incompatibility of values among actors of the chain, lack of information flow, and poor supply reliability (Finfood 2003b, Hamm *et al.* 2002, Baecke *et al.* 2002, Franks 2003, Wycherley 2002). These issues call for solutions that involve closer collaboration as well as more exchange of information between actors.

The objective of the research is to understand the interactions between the actors of the organic food supply chain when the distribution takes place among the mainstream retailing chains. The theoretical background consists of elements from supply chain management (Lambert *et al.* 1998), Efficient Consumer Response (Alvarado and Kotzab 2001), relationship management, as well as stakeholder management.

## Methodology

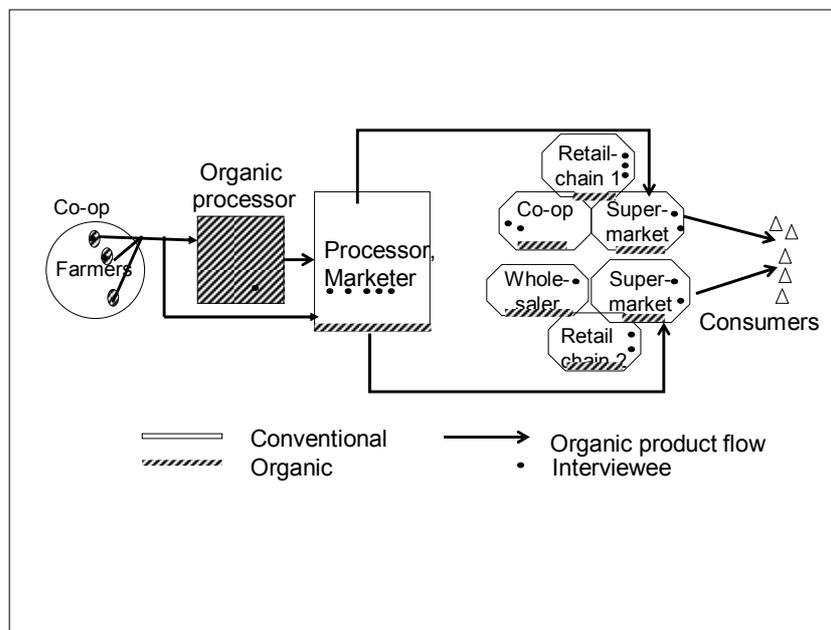
The system was observed by using both quantitative and qualitative methods. The surveys were conducted during 1999 and 2003, and the number of consumers and food chain actors were  $1009 \pm 134$  and  $439 \pm 130$ , respectively. The data was analysed during spring 2005. Explorative factor analysis and K-Means cluster analysis were used. Several groups of actors and consumers were identified, each of them having a clearly distinguishable attitude profile in relation to organic food.

To deepen the understanding of the demand - supply chain of organic food, case studies were carried out with a qualitative approach. The focus was kept particularly on the information management as it presents the key to improved performance. The flow of information between the actors of the chain co-ordinates the other flows, such as the product flow (Coughlan et al. 2001), and is an essential element of the inter-organizational relationships (Anderson and Narus 1990). In this system, the model of information flow is based on a preliminary literature review, and is adapted and refined according to the results of the case study.

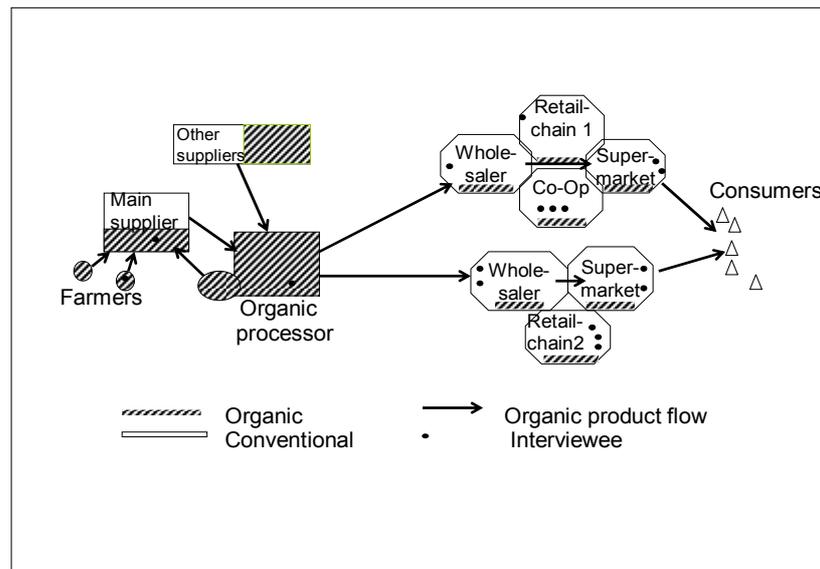
Two chains were selected by taking into account the requirements of comparability, representativeness and diversity. The products chosen for the case represented typical daily food of the Finnish consumers. The cases differed from each other in terms of product characteristics (fresh product vs. industrial product with a long shelf-life), marketing concept (private label vs. own brand), as well as the size of the marketing company (small processor marketing the products on its own vs. small processor whose products were marketed by a big company). Both products were sold by the same two retailers, which are the largest grocery retailers in Finland.

To describe the chains, the viewpoint of the organic processor was chosen for two reasons. Firstly, processors concentrating exclusively on organic are critical in developing organic products for the market, and secondly, it is assumed that they are highly committed to organic food. From that focal point, the product was followed downstream through actors involved in distributing, marketing and selling the organic product to consumers, but also upstream to a couple of farms producing the raw material. Apart from the focal organic processor and its suppliers, the proportion of organic food is small in the chains, as in conventional food chains in general.

The data was gathered by interviewing the actors along the chain. The selection of the interviewees is based on their position and responsibilities in the company. Interviewees are either managers of the companies (small firms and farms) or are involved in decision making processes concerning the assortment and promotion of the products. In total, 28 interviews were conducted. The chains as well as the amount and position of interviewees are depicted in figures 1 and 2.



**Figure 1: Description of case 1 (Fresh product)**



**Figure 2: Description of case 2 (Cereal product)**

Each interview took one to three hours and was semi-structured. Nine specific issues were covered: actor's position in the chain, commitment to organic production or marketing, the network of organic information, the means and the content of information exchange, the efficiency of information flow, as well as the relationships between the actors and the performance of the chain.

All interviews were recorded and transcribed. The interviews were conducted between November 2004 and March 2005. In addition to interviews, secondary material such as financial reports, marketing research done by the actors, annual reports and internet pages of the companies were evaluated. Transcriptions were analysed by summarising and comparing the views of different actors in the same chain. Preliminary propositions are revised and finally tested in all case-chains. The preliminary propositions are:

1. The information flow is inadequate and inefficient.
2. The actors' conception of the situation is inconsistent.
3. Some actors of the chain, or stakeholders outside the chain, possess or have access to information which could be used to improve the performance of the whole chain.
4. Actors know little about the needs of the other actors of the chain.
5. Communication between the actors of the chain is insufficient.
6. Commitment to organic would improve the performance.
7. Experience of organic presents a key to proper performance.

### Results and brief discussion

Interviews with the actors along the studied chains shed light on the significance of organic to the actor, the type of information actors exchange and/or need, the significance of stakeholders outside the chain, the relationships between actors, as well as the factors affecting information sharing. Together with the existing theories, the identification of factors affecting the performance - in particular conflicting objectives - is enabled, and thus, the corresponding opportunities and means for the improvement of the system can be found.

The share of organic in the turnover of the actors varies greatly depending on the size of the company and the position in the chain (Figures 1 and 2). Because the strategic role of organic products is different for each company, there may be contradictions and difficulties to share a common goal between the decision-makers within a company or between customers and suppliers.

The preliminary results indicate that the information concerning organic is poorly managed by the actors in the chain. Management of the conventional food chain is based on product categories. Because organic products exist in various categories, information of organic products is a negligible part of each conventional product category. This complicates the management of the information and the marketing of organic products.

In the first analysis of the data, it was found that information flow to consumers from the chain actors is deficient. The mutual view of the chain actors is that the brand owner is responsible for delivering information to consumers. Due to the limited resources and conflicting needs of the brand owner and its stakeholders, the package of each product is the only significant means of providing information to consumers.

Due to the poor information management and the information delivery to the consumers, the information concerning the environmental and ethical value of the organic product is not flowing among the chain actors. However, the information system coordinating the logistics of organic products is similar to that of the conventional products, and therefore, the information could flow just as efficiently for organic products as for conventional products.

### Conclusions

In order to understand the needs and possibilities for system improvements or changes, research at the chain level is necessary to complement the studies concentrated on one actor group of the chain. Due to the deficiencies of the information flow by the chain actors, the performance of the organic food chain could be improved with the involvement of the stakeholders outside the chain. The role of the actor from outside the chain would be to support the organic chain by managing and delivering information concerning the ethical, ecological as well as societal value of organic food. Interesting questions for further discussion are the role definition between the stakeholders inside and outside the chain as well as the interaction between them.

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