

Available online at www.centmapress.org

INTERNATIONAL
JOURNAL ON
FOOD SYSTEM
DYNAMICS

*Proceedings in
System Dynamics and Innovation in Food Networks 2016*

Adapting Supply Chain Management for Local Foods Logistics

Per Engelseth* & Heidi Hogset
Molde University College
*corresponding author: peen@himolde.no

ABSTRACT

Supply chain management is adapted to the particularities of local foods production characterised by short chains and intensive horizontal and vertical networking in an integrated context. A case study of chain of local foods logistics to a common retailer in Norway empirically grounds what constitutes "supply chain management of local foods". Findings based on analysis applying contingency theory indicate that local foods chains not only are short in structure. They are differentiated grounded in a developed local reputation. They also resemble in structure as well as operations more service supply chains than modernistic supply chains due of heightened reciprocal interdependencies demanding quality networking. The exchange economy is therefore vital in managing local foods logistics.

Keywords: Local foods logistics; Supply chain management; Contingency theory; Interdependencies; Exchange economy

1 Introduction

This case study is about developing the logistics function of local foods suppliers from a supply chain management (SCM) perspective. Local foods producers, being small companies and transporting their goods over relatively short distances, need an adapted approach to managing these forms of logistics flows involving transport, inventory and goods handling. Furthermore, given the fundamental definition of SCM as an enabler of efficient and effective logistics processes through developing inter-organisational integration (see www.cscmp.org "glossary of terms"), this role of SCM is enhanced regarding how it supports the logistics of local foods. The logistics of local foods supply involves relatively short networked logistics processes including multiple actors in the supply chain (Engelseth 2015). This fundamental assumption regarding the importance of networking in short or local foods supply chains lies in that local foods producers are small companies. This food business smallness, as revealed by Engelseth (2015), implies therefore a need to cooperate with other companies in order to efficiently supply local foods on the marketplace.

Abatekassa and Peterson (2011) reveal how food markets are increasingly globalized. Starting from the times of the industrial revolution, the food industry has adopted modernistic forms of distribution. Modernism implies, according to Giddens (1991: 5), among many things self-identity becomes "...a reflexively organised endeavour". This means that people in the modern age are not bound by local space. A local tradition or product may be consumed anywhere in the world. Modernism also encompasses the industrial revolution, the mechanization of "man" and mass production to achieve economies of scale. Scientific management embraces this view of production efficiency (Thompson 1967: 5). Modernistic food production involves producing long series of cheap standardised consumer goods at locations far from their consumption. In this marketplace dominated by industrialized food production a gradual opposite trend has emerged in our now relatively post-modern society. This trend is associated with heightened affluence.

At the same time local food supply using short supply chains is increasingly important in foods distribution in the Western developed world (Magid et al., 2002). Studies show that food consumers in developed nations are today increasingly willing to pay the demanded price for locally produced quality foods (Wolf et al., 2005). This increase in demand for quality local foods in the supermarket and other more specialized shops have marked

the re-emergence of local food producers in the food chain. According to Mehl (2012), there are currently between 1,500 and 1,700 local food producers in Norway.

While logistics predominately is influenced by modernistic economies of scale solutions regarding transport, storage and warehouse handling activities, the emergence of increasing amounts of small-scale local foods distribution directs attention to what characterizes *the economies of small scale* in food supply. Furthermore, the research issue regards how efficiencies in local foods supply may be achieved through inter-organisational integration facilitating process coordination through effective interaction. A detailed case description of a local foods supply network in Norway is provided. This case study is designed following a hub and spoke structure guiding inquiry. An initial description of local foods retail at a supermarket represents the hub in this structure. From this retail perspective supplies from five selected different local foods producers to the supermarket are described.

2 Literature review

"Local foods" refers to food products produced close to consumers (Martinez et al., 2010); a reflexive concept associated with all activities related to the method of food production and distribution constrained by geographical measures and socio-cultural emotions (Amilien et al., 2008). No universal definition of what constitutes a "local food system" exists. Consumers are therefore left to decide for themselves what "local foods" means to them (GRACE, 2014). These viewpoints are dependent on the consumers' socio-cultural backgrounds, attitudes and behaviours (Zepeda and Li, 2006). The socio-cultural background refers to consumers' emotional attachment to local people and a desire to support the local economy and improve the local environment (Zepeda and Levit-Reid, 2004) and membership in environmental advocacy group (Brown, 2003). According to Wolf et al., (2005), the typical buyers of local foods in developed countries are women, college educated and those with above average incomes. This market segment also allows food distributors to precisely segment this target market in their branding and promotion. This marketing effort must also be followed up with trustworthy logistics systems and traceability to convince consumers that the "quality foods" actually are what they are promoted as.

The local food system consists of three issues: 1) how and where food is produced, 2) how food will be distributed to consumers and 3) consumer food preferences & options (Darby et al., 2008; King, 2010). These three questions represent the epicentre of a local foods system. Food supply is also associated with "customer value objectives" that includes traceability (Engelseth et al. 2014). Traceability provides assurance concerning food product quality including its authenticity (Engelseth 2009). They are also conceptually overlapping and interdependent. The Consolidated Farm and Rural Development Act, as enacted by the U.S. Congress in 2008 as HR 2419, defines the term "local foods" as associated with 1) the locality or region in which the final product is marketed, so that the total distance that the product is transported is less than 400 miles (640 Km) from the origin of the product, or 2) the State in which the product is manufactured. This definition reflects only the geographical aspect of where food is produced and eaten, not "how and why" of local food demand. In Europe it is natural to apply much shorter distance in classifying foods as local or not. This geographical characterization of local foods oversees organic components of the local food system. In particular, it is assumed that local food producers use less chemicals and more natural ingredients. Therefore, environmentally friendly production methods and local food are characterized as "organic foods". Also an important premise behind this reference point is that the shorter the distance food travels, the more secure and safe it is (Saunders et al., 2006).

Producers of local foods obtain access to the market through marketing channels. There are two main forms of marketing channels in the local food system that local food manufacturers use to reach their customers. These are 1) direct distribution and 2) the use of intermediaries. Both these forms may be organized in many ways, with the use of intermediaries naturally involving a higher degree of network complexity. When direct distribution is applied there is an immediate relationship between producer and consumer. The local foods marketing channels may be organized through local markets (eg. Farmer's market), manufacturers' sales offices, community-based units, localized exhibition program and other mechanisms that manufacturers use to sell their products directly to consumers such as consumers coming to the farm or to fishermen (Bioforsk, 2012). Intermediaries in marketing channels create a bridge between producers and consumers, a simplification of marketing efforts for the food raw materials producer. These intermediary roles are limited

only to local producers selling agent. Unlike intermediaries in the global industrialized food system, intermediaries in the local food system are rarely large businesses. Local manufacturers often supply their products directly to localized food "hubs" which is a "central location where local manufacturers distribute their products through one or more entities" (GRACE, 2014). Local foods are distributed to consumers through logistics flows applying a local foods system (Martinez et al., 2010). The traditional market arrangement, such as that found in developing countries today, has a direct producer-consumer relationship. This is a marketing channel arrangement where consumers buy directly from producers at farmers' markets or producers sell through their own proprietary facilities (Dunne et al., 2011). Because of the constantly growing demand for local foods in more developed countries, retailers and grocery stores increasingly carry out the distribution of local foods. According to Dunne et. al, (2011), traditional and direct relationships between producers and consumers have gradually been replaced by a more complex and modernistic network of companies including manufacturers, distributors, retailers and the consumers themselves.

Local food producers can be defined in accordance with different parameters ranging from the nature of business ownership, methods of production, the size of a business, availability, nature of end products and its relationship to place (Kvam and Magnus, 2012). A "local foods system" implies that this particular organisation of food supply takes place in a limited space; transport distances are therefore short. It implies a "short supply chain". In this network of relations between actors there is a need for an efficient and integrated supply chain to support logistics performance (Deller and Brown, 2011). One of the most common definitions of what characterizes local food producers is that it involves that food manufacturers process and sells products within a given geo-political boundaries. Marsden et al. (2000) refers to these characteristics as "relationship to place". However, this definition has been disputed by other factors. For example, Low and Vogel (2011) introduced local ownership, size and scale including marketing channels as the most important defining factors for conceptualizing local producers. According to this view, local food producers (farms) are owned by local people. Consequently, local food producers are small and medium scale companies. Final products are marketed directly to consumers or through intermediaries marketing channels (Martinez et al., 2010; GRACE, 2014). These characteristics of local food producers are not universal. For example, Deller and Brown (2012) characterize local food producers based on "production techniques" they use and by features of their products; "commodity" versus "non-commodity" products. These characteristics of local food producers are neither well defined nor systematically oriented to define local food producers. The common assumption of food production method is that local producers are micro or medium scale and their market size is limited within a given geographic boundaries and they use natural ingredients; they are producers using sustainable techniques to produce quality organic foods. Of these local food producers are methods for producing mostly "related to sustainable agriculture, while the global industrial food system is dependent industrial agriculture" (GRACE, 2014). Defining local food producers based on the content of the final product in a dichotomous way (commodity versus non-commodity crops), facing other forms of local producers and their end products. This implies a research issue regarding what is the role of sustainability in local foods supply chains.

- Is it an inherent feature of this form of supply chains or a simply a variation of local foods production?

Local foods supply is managed by small companies involving short transport distance. These are normally products that are marketed as quality products where authenticity is demanded. This entails normally a need for traceability. However, due the local nature of this form of distribution, the local foods supply chain in its general smallness should expectedly also be relatively transparent, reducing the need for complex and expensive traceability systems. The small nature of the local foods producers also entails that these networks have limited financial resources. They are small specialized firms that in order to develop their logistics processes need to collaborate with other firms in the supply chain. This entails a complex network, and to the degree that this network is in a state of continuous change, it is dynamic. Networking emerges accordingly as a prioritised task of local foods production and supply in the dynamic complex system that local foods networks may be characterized as.

- This raises the issue of reputation management. Is "local foods" as a form of branding vital in understanding the importance of this form of foods supply to differentiate and thereby achieve customer loyalty?

In line with the environmentalist ideology often associated with local foods, the short distribution channel for local foods is believed to entail a smaller carbon footprint of food transportation. Several studies have focused

on the relationship between transportation distance and greenhouse gas emissions. These studies have not been conclusive, as distance is not the only parameter determining the amount of emissions per unit of food product. Mode of transportation, volume per shipment, and how transportation is organized also matter (Coley et al., 2009; Martinez et al., 2010). But in the cases where transportation of local foods is associated with higher emissions, it is fair to assume that the transportation function is inefficient and costly.

- This points to an issue concerning that short supply chains means less transport and therefore a more environmentally friendly form of supply. Is this issue of importance for local foods suppliers?

All food supply is organised through an entity which is commonly termed as a "supply chain". The Global Supply Chain Forum (GSCF) has defined the SCM as: "the integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders" (Lambert et al., 1998). A supply chain is a network of partners who collectively convert a basic commodity found upstream in the flow of goods into a finished product further downstream that is valued by end-customers, and who manage returns at each stage (Harrison and Hoek 2008). The supply chain is associated with the flow of goods and services and is therefore the *context* of logistics processes. The chain as metaphor emphasizes how companies, from a normative view, should be bound together in a common cause of achieving quality supply. However, as Christopher (2011) points out, this metaphor does not capture well the actual network structure of how companies in practice work together to carry out goods supply.

In a state of increased globalization SCM may be regarded as a key business driver for the keeping foods suppliers competitive. Ellram and Cooper (1993) define supply chain management as "an integrating philosophy to manage the total flow of a distribution channel from supplier to ultimate customer". Monczka and Morgan (1997) state that "integrated supply chain management is about going from the external customer and then managing all the processes that are needed to provide the customer with value in a horizontal way". The horizontal way concerns networking with partners that may also take the role as competitors and not limited to long-linked cooperation through tiers of suppliers. This quality goods provision is dependent on both inter-firm and intra-firm integration. SCM is accordingly a means for enterprises to gain competitive advantage in a marketplace through collective action by firms that are cooperating to improve the upstream and downstream relations and integrating the information flow, material flow and finances flow in the supply chain. This clearly indicates that the main purpose of SCM is logistical, to try to reduce costs and maximize the added value in logistics processes. SCM provides the normative organizational context highlighting the functional principle of integration. The question evoked in this study concerns what constitutes "SCM" in the context of local foods supply chains.

- This points to how local foods suppliers integrate in the supply network both with customers and suppliers and is based on a fundamental assumption that organising short local foods supply chains, to integrate them, demands an analytical framework different from that of organising modernistic industrialised food supply chains. This represents a question regarding the strategic role of SCM in local foods supply chains.

According to Lambert et al., (1998) logistics is that part of the supply chain process that plans, implements, and controls the efficient and effective flow and storage of goods, services and related information from the point-of-origin to the point-of-consumption in order to meet customers' requirements. As a subset of SCM, logistics is the task of coordinating the material flow and the information flow across the supply chain. Harrison and van Hoek (2008) state that the logistics task of managing the material flow with its supporting information flow is a key part of the overall task of supply chain management. In relation to logistics pertinent questions include how foods are stored, transported and handled in local foods supply. In addition, therefore, a question arises as to how SCM supports the particular logistics needs of *local foods suppliers*.

- This logistics aspect of local foods encompasses also how these firms exchange information through purchasing as well as sales processes. It represents an issue pertaining to organising food supply operations in local foods supply chains.

We now turn to developing a research approach aiming to analyse the preceding research questions. Food supply, being a form of physical distribution, is commonly associated with a long-linked form of supply involving sequential interdependencies. Following Thompson's (1967) understanding of contingency theory, in

a supply chain, industries may possess types of resource interdependencies that express the logic of production in a specific industry. Sequential interdependency is prevalent when activities must follow one another, and therefore involve a fundamental form of supply *chain* logic; this is a focal characteristic of production in manufacturing and, to a lesser degree, in construction. However, production may also reveal pooled and reciprocal interdependencies, which is a focal characteristic of production in services. In cases of pooled interdependencies, firms produce by combining heterogeneous resources. In cases of reciprocal interdependencies, production is dependent on knowledge interaction that involves information exchange to curb relatively high uncertainty. Sequential interdependencies and pooling of resources are associated with complementarity, while reciprocal interdependencies involve a search for complementarity between the resources in use. Following Thompson (1967), this understanding of interdependencies implies variation in what constitutes interdependence, and also suggests that developing resource use in processes should focus on evoked particular technical interdependencies. Although local foods should be characterised as predominately sequentially interdependent flows of goods, the shortness of transport combined with fragmentation and a heightened need to network, entails increased importance of sales and purchasing functions. This in turn entails heightened reciprocal interdependencies, as well as increased potential to pool resources with other smaller or more specialised firms they have outsourced tasks to. This also entails considering local foods suppliers as more resembling service providers than manufacturing firms. Following this logic this means that how the local foods suppliers interact with other firms is a more viable path to development than features of production and logistics.

- This implies directing analysis as to the impact on short local foods supply structure on interdependencies as explanation of how SCM differs in this form of foods supply.

Based on voluntarism, implying a key role decision-making associated with degrees of rationality in organizations, Parsons (1960) classified organizations as having three distinct levels of responsibility and control: (1) technical, (2) managerial, and (3) institutional. In supply chains the technical level is associated with a production economy where deliverables are conceived and resources transformed to create supply. Following Hammervoll (2014) the supply chain may accordingly be understood as consisting of an exchange economy supporting a production economy. The exchange economy encompasses the managerial level. This view of local foods supply chains is illustrated in figure 1:

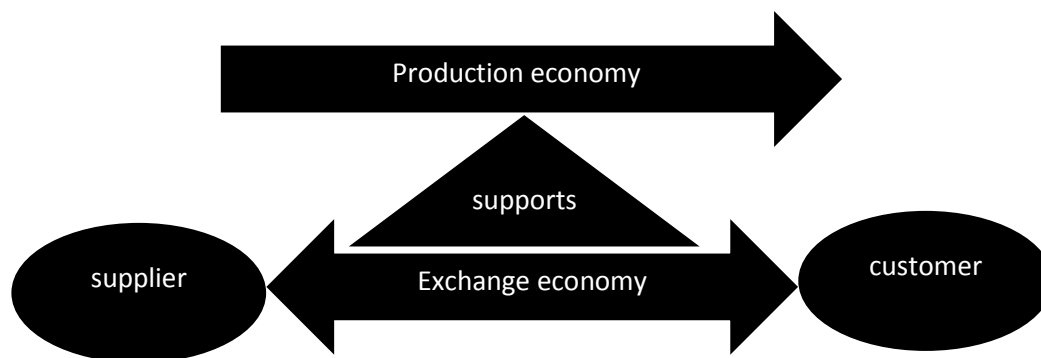


Figure 1. The production economy supported by the exchange economy. (Based on Hammervoll 2014)

The institutional level may be viewed as the organisational discourse embedded in this structure, visible as processes patterns. SCM is commonly focused on the production economy that includes the logistics function. The exchange economy encompasses administrative processes; importantly purchasing and sales. Production involves how value creation through time, place and form transformation takes place while exchange involves transactions of product ownership. This is a functionalism institutionalised: a given process function with processes organised to meet this function. This view is different from contingency theory where functions are viewed as created in context. As "economy", exchange is envisioned as process that may as such become improved; likewise as operations in production. In local foods systems production and exchange economies are intertwined since these are small-scale systems. This includes how production and exchange are configured. As previously indicated, local foods implies more manual information exchange due to increased importance of personal ties. This also implies, as noted, that local foods is increasingly reciprocally interdependent since logistics solutions are negotiated in individual rather than planned in detail. This dependency on negotiations

with uncertain outcome increases the dynamic character of local food systems. People as resource and more specifically developing exchange skills of these people are accordingly vital in developing the efficiency of local foods distribution. While supply chains in industrial food supply applies long-linked technology (Thompson 1967); a relatively stable sequentially interdependent structure, the supply chain in a local food system is a small-scale network less stable structure supporting interaction between producers, potential middlemen and consumers; more resembling a service supply chain since the importance of interaction is heightened and the number of tiers in the chain are fewer. In small supply chains it is the smallness that implies instability given the need to network with many and different actors when chains are small. Taking into consideration figure 1, this entails that research concerning local foods supply should focus on the exchange economy since this is where most modes of improving foods supply may be found in this dynamic complex mode of supplying foods.

- This points analysis in a direction with a quest to uncover how, from functionalistic viewpoint, the exchange economy supports production may vary due to variation in supply structure, more precisely, its "shortness".

3 Method

Sterns, Schweikhardt, and Peterson (1998) view research as a phenomenological approach implying successive use of theory and fieldwork to develop a conceptual framework. The framework in this study emerged in a similar iterative fashion from the research process. Ours is a single case study; with detail provided in the material and we elaborate on this, detail rather than count or compare incidents. This involved designing the research process that led to "observations [that] generated new questions on which further interviews could be based" and eventually "added new dimensions to the subject, which eventually resulted in a new view of the phenomenon itself" (Dubois and Gadde 2002). Our study was conducted in and in the vicinity of the small town Molde, which is located on the Northwestern coast of Norway, overlooking a fiord. In this area, farming has traditionally been combined with harvesting from the riches of nature, in the form of fishing, hunting, and gathering. This legacy is reflected in the current local foods production in the area.

A case study research strategy was applied involving a first interview with a supermarket known for its large assortment of local foods. This main interview was supplemented by 6 interviews of different local foods producers and one interview with a county governor office representative who administers various programs to support local foods companies. The local food producers were selected by using a snowball sampling procedure. The respondents contact information was gained through the supermarket manager and then a sample of producers was selected coming from different categories. This method excluded some local food companies, because they did not sell to the supermarket. Snowball sampling is a nonprobability sampling technique. The selection of the sample is not random. It is therefore impossible to determine a possible sampling error. We chose the informants mainly by geographical convenience and accessibility. This may influence our results. So representativeness of the sample is not guaranteed (Kotz et al., 1999).

The method of data collection is personal interview. We went to the respondents' home or company office directly with a prepared interview guide. We had three types of interview guide, tailored for retailer, producer, and government. The interview guide of retailer focused on their perspective, attitude and activity of local food. For the producers interview guide the focus is around the whole supply chain of local food from harvesting and processing until the customer picks it up. Besides, we included some questions about their personal information which may indicate the future development of local food. The interview guide to the government official contains questions about policies for helping local farmers and future development about local foods in general in the county the supermarket is located in. A limitation of personal interviews is that many pieces of information may be incorrect or exaggerated, because some respondents see the interview as a market promotion. So there may exist errors in our case study research. The data analysis is using a qualitative method because there are no accurate numbers collected during interviews. Most of the data collected are found in transcripts.

4 The Norwegian local foods network case

4.1. The supermarket: Coop Mega Molde

The studied Coop Mega supermarket in Molde (<https://coop.no/mega>), Norway has a variety of local foods like jam, honey, cheese, fish, cured meat, eggs, lefse, bread, concentrated juice, sodas, mineral water, carrots and strawberries, almost covering all kinds of categories. Lefse is a traditional sweet snack in Norway. Coop is a large super market which has 135 million NOK turnover per year. Coop Mega in Molde strategically prioritizes local foods. It has had a local section since 2006. Now the size is tripled since 2006. Local food sales account for 7- 8% in the total sales volume inn 2015. This percentage is stable in the market because Coop has tripled all the products.

From Coop's point of view, local foods are defined as food produced within Møre og Romsdal County. The main reason why Coop sells local food is customer preferences. The demand is increasing in recent years. The profit margin of local food is slightly higher than ordinary food. Customers express to the store preferences for local foods, especially those brands that are associated with local culture which people can't buy in other places. It is important that the food is produced locally. Local foods are perceived by customers as being fresh, having good quality, are healthy and taste good. Local fish and cheese are comparatively more important than other local foods. Many types of local cheeses is only sold in Coop Mega Molde, you can't buy them in other places except some special shops in Oslo or directly from the producer. For fresh salmon and cod, they are all 100% local. Coop meets the fish supplier at the port 6:00 every day. What's more, the fish supplier can refill twice every day to suit Coop's orders. There are two distribution ways from farmers to Coop Mega Molde. Many local farmers choose to deliver products by themselves. They come to the supermarket to ask if they need the foods they can supply. The delivery costs are then paid by the local foods suppliers. Another way is to sell through Coop regional distribution centre. The one Coop Mega Molde sorts under is located in Trondheim, about 6 hours driving time away. Farmers transport their products to the Coop centre. Then trucks from Coop deliver products to the shop about once a week.

Coop has three procedures used to purchase local food. One is through PDA (Personal digital assistant) which is a mobile electronic device that functions as a personal information manager. This is the common way to purchase goods for the supermarket and applies to local foods distributed through the distribution centre in Trondheim. Another is that Coop orders goods from the local foods supplier by telephone. However, the most common purchasing procedure is that farmers first contact the supermarket directly by phone. The quantity of goods ordered are such that local farmers can have a stable profit margin. Because of Coop Mega Molde, these small local suppliers survive. They are very dependent on Coop since there is only one more supermarket (Bunnpris Frænavegen) in Molde city that has some degree of local foods in their assortment. Food safety regulations in Norway are strict and administered by the government through Mattilsynet (<http://www.mattilsynet.no/language/english>). Local food suppliers are likewise as industrial food producers required to have the barcode and ingredient label on the packaging of the products. There are no special requirements compared to ordinary food. Furthermore the supermarket is required to take responsibility to check the quality through visual control and check the smell. Local farmers usually have a long term contract with the supermarket. Most contracts are signed or renewed in Coop's distribution centre. The contract will be for one year. The contract specifies the barcode label in details. What's more, local suppliers may through the contract not be allowed to supply their products to other Coop's competitors.

4.2 Fish supplier Horsgaard



Horsgaard (<http://horsgaard.no/index.htm>) is a local fish store and producer of seafood.-located in Molde city centre. It is the sole fish supplier of Coop Mega Molde. All the fresh fish of Coop is ordered from this company.

In addition, Horsgaard also plays the role of a small-scale mainly domestic fish trader. It not only sells fish in its own store, but also sells to hotels, restaurants, schools etc. Sometimes, it even delivers fish abroad. Horsgaard started in 1932. It is a fourth generation company. The owner of Horsgaard inherited this fish store from his grandfather because he couldn't find a job at that time. It has 5 staff members in the store: one driver, two salesmen, one main staff and the owner who operates the computer and phone.

Most of the fish Horsgaard sells is local, only a small quantity of fish is from other places. It has four main local suppliers. In the morning Horsgaard calls them regarding what they need of supplies and gets feedbacks from suppliers in the afternoon. The final quantities are decided by the suppliers owing to the uncertainty of fishing. Suppliers use third party logistics to transport fish. Every evening at eight and next morning at five, the store receives fish by cars or trucks from Bud and Aukra, near Molde (both about 30 minutes driving time).

Each fisherman has processing facilities in the vessel, so Horsgaard only needs to do a few simple processes, except for some seafood which is not local like king crab, shrimps and green sole etc. If the quantity of supply is not sufficient, Horsgaard will also look for other fishermen suppliers on the market. Taking travel time and price into consideration, fishermen can decide whether to sell it or not. The quota of fishing in Norway is very restricted. Fishermen who have big vessels tend to sell fish to wholesalers who then again may sell goods to Horsgaard. On the other hand, many older fishermen who only have small boats like to sell fish to Horsgaard directly because they think they can get a better price and good treatment there. Horsgaard is not only a retailer and fish trader but also the fish supplier of Coop Mega in Molde and Oppdal. Oppdal is a small town outside Møre og Romsdal county. Coop Mega has a good market and better promotion, so Horsgaard cannot compete with it. Therefore, it chooses to collaborate with Coop. It has already cooperated with them for 5 years and 3 years in Molde and Oppdal respectively. For Horsgaard, Coop Mega is the biggest customer.

Horsgaard receives around 1000 kg different kinds of fish every day. 700-800 kg of fish are used for trade. Horsgaard supplies 80% of received fishes to Coop Mega. Every night when Coop is closed, they will order the fish from Horsgaard by fax. The ordered fish will be delivered to Coop at 8 am the next morning. The whole period is less than 24 hours to insure freshness and quality. Horsgaard uses its own truck to transport fish in Molde. Considering reliability and responsibility, Horsgaard uses his father as the driver. For places outside of Molde, they use third party logistics to transport fish. Every evening at nine, Horsgaard drives to the terminal to pick up fish for Coop Mega Oppdal, then they use the logistics service provider Bring to transport fish to Oppdal.

Some consumers in Molde prefer purchasing seafood from Horsgaard because they believe fish here is fresher than at Coop Mega Molde. Horsgaard is mainly focused on freshness and quality and less on profit margins in their business. Therefore they don't earn much money. On the contrary, sometimes they have to pay a lot in the operations because of the short durability of fresh fish products in general. Fish consumers in Molde, are also very quality conscious regarding the state of freshness of fish. Last year, it only had a 2 % increase of sales volume. But in order to ensure the quality and taste of fishes, for the moment, Horsgaard can't accept too many new customers.

4.3 Bakery and coffee shop: Fole Godt



Fole Godt (<https://www.facebook.com/folegodt>) is a handmade bakery which is located in the centre of Molde. It is the only local bakery supplier of Coop Mega. It was started by Kristin Heggdal in the summer of 2008. She started the business to stay more close to her child. Additionally, she was interested in bakery and found there was no handmade craft bakery in Molde at that time. The main products of Fole Godt are bread. Besides bakery products, she also sells coffee, chocolates and olive. Handmade craft means doing almost

everything by hand except dough mixing, in contrast to industry bakery. What's more, Fole Godt does not use any artificial ingredients. They prefer to use ordinary whole milk and eggs rather than milk or egg powder. The bread they make is fresh and healthy which can only store for 2-3 days. Fole Godt has lost money since its foundation 7 years ago, but the business has expanded from 1.4 million to 7.8 million gross annual turnover. It went bankrupt in 2011. The main reason was that they had high night salaries for bakers. Shop assistants had to make bread at night. Now they pay more attention to lean production and work mostly at daytime. The new store just opened. Everything is going the right way now. There are 17 employees in the shop and some of them do part-time work.

Coop Mega Molde was the first business customer of Fole Godt from day one because it wanted a large part of the local market. Considering the need for a steady income and customers who don't have time to come downtown, Fole Godt chooses to cooperate with Coop and spends much time to supply it. Coop is the main customer which accounts for 42-45% of total sales volume. What's more, they both have a good personal connection. Besides Coop, they also supply a few products to Bunnpris in Molde city center. In addition, their operation is flexible. Every day, canteens and coffee shops call in their orders to the bakery. Some business companies also order bread for meetings and courses. Fole Godt drives out to six of the biggest companies in the Molde near area every morning. Fole Godt delivers bakery products using its own van. It drives directly to the customers at 7-10 in the morning every day. One hotel in Molde is the first customer which wants to receive deliveries before 7 am. Coop has a list of different products every day, they want delivery before 8.30 am. However, one customer in Ålesund has its own transportation. They drive to Molde to pick up bread every Friday. Fole Godt has 9 suppliers (flour, coffee, chocolate, tea, olive...) and mainly retains the same suppliers except for chocolate which has changed from time to time.

Heggdal has a good relationship with all her suppliers, they always have private conversations. The olive is imported from Spain. The supplier of coffee is in Oslo. They travel all around the world to pick up the coffee beans and burn it the way they want. So these products are good tasting and high quality. All the flour they buy comes from a major Norwegian industrial supplier called Idun Industri. It provides 1.6 tons of flour for Fole Godt once a week by their truck. Now Fole Godt is thinking about using eco-friendly flour because the price of ordinary flour rises continuously.

4.4 Heimebakst bakery



Heimebakst bakery was founded in 2002 when it was awarded government financing . The company produces the traditional soft, Norwegian dessert product called lefse. It is a very popular pastry among local people especially in the holidays. Heimebakst mainly supplies products to Coop Mega in Molde. Lefse is made with potatoes, flour, butter, and milk or cream. It is baked on a griddle. It generally resembles a pancake or flatbread and has butter, sugar and cream inside. Heimebakst bakery produces 6 different types of lefse which include Solemdalslefser, Buggelefse, Snipp and Tykklefse. Some of them are named according to the origin of the recipe. Potatolefse is a new type this year. Lefse cannot be stored for a long time in room temperature so it needs to be frozen. The sales of lefse are seasonal. It has a sales peak in the period of Christmas. Because Lefse is sold very well, the profit of the company is considerable. The production of lefse follows an inventory push scheme, meaning they produce not based on orders, but capacity-based plans. Their production plans are simple, they will stop production when the freezer is full. Now there are four people working there including part-time job. The main customers of Heimebakst bakery are Coop Mega Molde and some other shops in Trondheim. People can also come to order fresh products and cakes for meeting and party.

Heimebakst delivers products by their own truck. The truck has reefer equipment for temperature regulation and control. They drive to Coop Molde once a week and twice a week to Trondheim. All the raw materials like butter, sugar and cream are ordinary raw material food supplies. They don't have local suppliers. The

production craft is simple, but the recipes of lefse are old and local. It was learnt from their ancestors. The main reason why they operate the company is to increase income and help local people. Heimebakst was established with several owners. Because the two owners now are retired, the future development of the company is based on the young people they have hired.

4.5 Derinngården cheese dairy



Derinngården (<http://www.derinngarden.no>) is a dairy farm that started in 2003. It is one of the local cheese suppliers of Coop Mega. They produce cheese and other dairy products from their own milk. The motivation to operate the firm is that they want to work on the farm. Self-produced cheese adds more culture and tastes richer. Derinngården produces 9 kinds of cheese and other dairy products like yoghurts. They haven't developed any new products in the past few years. Cheese can be classified as soft cheese, half hard cheese and hard cheese. The production time is 3-4 weeks, 8-10 weeks and more than half a year respectively. Soft cheese can keep for 10 weeks while hard cheese can keep for 2 years. But if hard cheese is cut, the durability will shorten. Besides cheese and yoghurts, Derinngården also sells some local jams and syrups from other local foods producers in the same municipality. Local farmers also help each other to sell and transport products. The organic milk is produced in their own farm. The total milk production of this farm is 20 000 litres per year. The production is continuous all year around. Besides cheese production, the farm also operates another business hosting local social events, and people have meetings here. They are served a lunch based on their own produced cheese.

In summer, many tourists visit the farm in the shop, where they taste products, like a simple coffee shop. The two owners of the farm both have other jobs. Besides the owners, the farm only has one part-time hired worker. In the last couple of years, Derinngården went to many farmers' markets and got orders there. However, last year they only attended two big markets in Ålesund (the largest city in Møre and Romsdal county) and Oslo because they didn't have a sufficient level of cheese production. Over time selling products from Derinngården has become easy because of its developed market reputation. Local cheese usually has quite high price, but there is also a lot of work to produce these cheeses. It's handmade and takes time. The sales volume of dairy products is almost stable. With selling more and more yoghurt, they made a little bit money because yoghurts use less milk raw material than cheese production. Derinngården has quite a few customers. It is as a milk producer also a shareholder of Tine which is the largest Norwegian dairy company owned by farmers. Tine's distribution system covers all of Norway. It helps local farms to pick up goods and send directly to their customers. Derinngården sells cheese to restaurants and hotels at tourist attractions in Møre og Romsdal County, in Kristiansund and in some special stores in Oslo and Bergen, through Tine's transportation system. In the first year, they travelled around as salesmen, called some restaurants and asked about if they wanted to taste it. The largest customer in 2014 is a large tourist hotel in Geiranger in Southern Møre og Romsdal county. The yoghurt was delivered there every two weeks by call or email. Derinngården also sells cheese to supermarkets like Coop Mega in Molde. Coop is the fourth biggest customer of Derinngården. It orders products once a month by message. For Coop Mega in Molde, Derinngården uses its own van to transport in person because they are quite often have something else to do in Molde. However, for Coop MEGA in Kristiansund, they use Tine system because they don't go there as often. Both Molde and Kristiansund are about 30 minutes driving time from the location of Derinngården in Eide municipality.

4.6 Halås jams, juices and farm shop



The Halås farm shop (<http://www.halaas-gardsutsalg.com>) is located in Eide, between Molde and Kristiansund. It is only 5 minutes driving from Derinngården, and these two farms cooperate in selling each other's products. The owner runs a small farm with sheep, chicken, herbs and berries. The owner started the business because her child was born at that time, and she didn't want to leave the farm so she had to create her own job. Twenty years ago, the land of the farm was poor. It was a swamp. In the beginning, people just came to Halås for brief visits. Now, it can offer space for small functions, conferences and courses. It has a dining area and accommodation. Therefore more and more groups come here to hold meetings. Some old people also like to have parties here because they prefer on occasion not to cook themselves. Halås provides traditional buffets and fish for these activities.

The Halås farm shop has many kinds of products made or processed from the farm. Some are seasonal. Halås has a variety of jam, juices, syrups and handmade soap. Additionally, it also sells spices, tea, herbs and eggs in the shop. These goods are differentiated since the production craft is old and traditional. Some recipes are ancestral. You can also find some products from other local farmers. Local farmers share products with each other. The Halås farm shop only sells products locally because the transportation cost is high and glass bottles are heavy. The turnover is small and is not profitable. But the farmer likes to run the business. Its main customer is Coop Mega and a few local shops around here. Glass bottles and sugar are the two biggest supplies of Halås. The farm receives them once a year. Halås delivers products to its customers once a month by its own truck. On the way back, it also loads some products from other farmers. Halås also sells these products in its own farm shop. In this way, it helps local farmers build network to transport together. It can reduce the empty transportation costs and share products among local farmers.

4.7 Brubekken farm and dairy



Stein Brubæk is the owner of Brubekken Gardsmeieri (<http://brubekken.weebly.com>). He has two roles in his work. One is as the owner of a local dairy farm which mainly produces the Norwegian traditional brown cheese while another is the leader of local food activities among farmers. Brubekken is not a supplier of Coop Mega in Molde. His land and house are inherited from his parents. He said that he still sleeps in the same bed as when he was a child. The production of brown cheese, yoghurt, white cheese and cream are very small. The farm has 8 cows and 30 goats. Now the raw milk production is 2 tons per cow and 0.5 ton per goat. The annual profit of the whole farm is around NOK 1.3 million. One idea of Stein Brubæk is to try to feed animals more grass and produce more milk to make the income increase to 2.2 million NOK. It is hard to reach that goal. His animals are fed natural grass while ordinary food production uses soya to make animals fatten quickly. Also, the production method is traditional in that he uses cast iron pot to evaporate the milk during production of Norwegian traditional brown cheese. There is one permanent employer with two temporary exchange student workers from a university in Austria which has specialized agricultural curriculum. But they prefer to hire permanent workers because of the need for stability.

The marketing of Brubekken includes supplies to supermarkets, hotels, farm shops, and farmers' markets in Kristiansund and mainly Trondheim. In total, they try to sell their products in as many ways as possible. The

farmers' market in Trondheim is one of the biggest in Norway which opens 2 times a month. The dairy company Tine provides cold chain transportation service to small producers. The price is relatively low to transport. For short distance, they deliver by using their own van with freezers. The owner of Brubekken has a good relationship with Heimebakst's owner. So they cooperate to use the same van to transport regular runs to Trondheim. They use third party transportation providers like Tine for long distance while using own van to transport short distance.

Brubæk also explained the history of local foods production in Norway. Before Norway found oil in the ocean, the whole country was very poor and people used to farm by themselves. There were a lot of people working at farm and making food. The methods and recipes were inherited by their family and it contained both tradition and culture. But after the oil was found, the lifestyle of Norwegians changed. People don't want to work with farm because the farm work is harder and the income is lower than other professions. They prefer to work in a clean and safe office. Many people leave their home, land and move to the city. Also, the government encourages the development of food industry. For example, the big dairy product company Tine, which is owned by farmers, can collect raw milk from the entire nation. Being owner means the farms have to sell their raw milk to Tine with a predetermined, according to Brubæk, too low price. The price is set between Tine and government each year to make sure consumers afford it and farmers do not lose money. Farmers have no quota to sell milk to anybody if they are not a member of Tine.

Brubæk is excluded from Tine's quota system, so he has to process dairy products himself. This way he captures the value added, and makes more money than if he sold unprocessed milk to Tine, at their cheap price. The Brubekken dairy uses the traditional method to make brown cheese. When he stated, only a few old women knew how to make brown cheese the traditional way, because the government tried to develop industry food and ignored the local traditional food. Now, the Brubekken company subsists as a niche supplier. The government supports projects that aim to attract more people back to farming, reduce costs of farm products, let more people buy local food, etc. Besides, Tine, the dairy producer believes competitors can help expand the dairy product market while they don't let anyone threaten their business. Currently Brubæk is involved in a local foods transportation project. The aim is to shorten down the link between customer and farmer. That will reduce the cost of intermediate and transportation cost as well as increase the competition of local food. They will attempt to use Tine transportation cold chain system to transport dairy products throughout the whole country, and build a cooperative distribution centre for all kinds of local food. Farmers only need to drive to the centre. The distribution centre is responsible for collecting, packaging and transportation by third-party logistics.

4.8 Møre and Romsdal county governor's office

Because they are small and cannot compete with big companies, the Norwegian government started to consider supporting local farmers and producers around the year 2000. There is an understanding in Norway that farmers carry on the cultural history and tradition of Norway. Our informant Kirsti Pernille Indreeide is a senior officer for the Department of Agriculture of the County Governor. She said the goal of Møre og Romsdal County Governor is to make the place, society, and land more ecologically and culturally sustainable (<https://www.fylkesmannen.no/More-og-Romsdal/Landbruk-og-mat/Mat/Malsetjingar-for-matsatsinga-i-More-og-Romsdal>). Besides, they try to make Møre og Romsdal county more attractive for tourists. There are two organizations that take different responsibility for local food development. One is called County Governor and is the provincial arm of the National Government. For Møre og Romsdal, there are 13 sub-offices located in each city that covers almost all the district while the provincial main office is in Molde. They are helping entrepreneurs and producers through some indirect way like educating, give information and marketing. They provide entrepreneurs and producers basic knowledge about local food.

Quality is considered the main advantage for local food producers and this means the price is higher than for ordinary foods. The production method and food taste should be acceptable for both modern youth and older people. The government tries to achieve this through training and counselling. Besides, the government supports several marketing activities to help local producers sell products through an established food festival and send local producers to an international food festival. The largest food festival of Møre og Romsdal is Ålesund Food Festival which is held every August. International Green Week in Germany took place for the 81st time in 2016. The County Governor will select a local producer to go there each year. Finally, the governor gives advice to restaurants, hotels and institutions to use local organic materials. The county governor has responsibility to let children and students understand the importance of local culture, tradition and history, to

make them have interest to pass on the Norwegian culture. So the governor holds seminars and classes at schools.

The other government organisation helping industry is Innovation Norway (<http://www.innovasjon Norge.no/en/start-page>). For the Norwegian Government, it is the most important instrument for innovation and development of Norwegian enterprises and industry. Innovation Norway's Oslo office helps provide financial incentives for developing local producers and farmers. Food production , including both agriculture and seafood, is the second largest export sector in Norway, after petroleum. Innovation Norway has a special project to help local fish farmers boost this sector.

According to our informant the concept of “local” has several definitions based on different perspectives. For Innovation Norway, the explanation of distance is that within 10 kilometres is local. For the County Governor, they think the value creation process inside the county is local. The county spans a distance of several 100 kilometres. Several local producers sell their products to other regions and even export abroad. The range of products that government will help is very large and includes everything produced from land and sea or use traditional production methods. It contains dairy, milk product, meat, fruit, vegetables, bakery, smoked salmon and other fish. Norway is a developed country where nobody needs to be concerned about food shortages. So the problem is nobody wants to engage in farming because of low income with labour intensive production. So production of local food has to show its advantage to attract more people, especially young people. The income and social status are more and more important for people when choosing a job. The County Governor has to have good cooperation with Innovation Norway. It can give more help both in terms of knowledge and finance to people who want to start a new business. In the future they want to continue increasing the quality by giving more opportunity to cooperation between producers. For example, it allows producers to taste other producer’s products to get some improvement for their own product. Also, to attract more people to work for local food producers, that is another objective for the future. This will require more frequent cooperation between the County Governor and Innovation Norway.

5 Analysis

Table 1 below provides an overview of key logistics variation between the interviewed firms:

	Horsgaard	Fole Godt	Heimebakst	Derinngården	Halås	Brubekken
Industry	Fresh fish	Bakery	Lefse bakery	Dairy: Cheese and yoghurts	Jams, juices.	Cheese dairy
Employees	4	17	4	Family, with 1 part-time	1	3 including 2 students
Main supplies	Fishermen	Industrial foods	Industrial foods	Own milking cows	Own berries.	Own cows and goats
Inventory	Supplied and made to order	Made to order	Made to stock	Made to stock	Made to stock. Seasonal.	Made to stock.
Transport	Own van. Long distance by LSP*	Own van	Own van	Own private car. Tine system for long distance supplies	Own private car	Uses van of Heimbakst
Frequency to Coop Mega	Daily	Daily	Weekly	Monthly	Monthly	n.a.

*Logistics service provider.

Table 1. Supply logistics of the studied companies

The following provides a brief consideration on the research issues indicated in the literature review

5.1. Sustainability

Sustainability from an environmental perspective is not a major issue for the local foods producers. They are more concerned with sustainability from a business perspective that their business will survive and hopefully thrive in the future. Sustainability is revealed through the case narratives accordingly a concern more of the greater society than the small business itself. The county Governor's office support of local foods producers is based on this view. Almost all local products in this study are to a high degree handmade involving relatively simple and often traditional technology. Some raw materials used by the local foods producers are local and self-produced, but not all. Some don't use artificial ingredients and have a healthy production craft, but not all the products may be labelled as organic. Others instead of being organic apply local culture and traditional recipe as differentiating principles. Some raw materials are only produced outside the region because of lack of local suppliers. For instance, the bakery producer only purchases sugar and flour from an industrial food supplier although she knew there are some local suppliers who can supply, but they are expensive. For the local fish seller, if he only purchases locally then he will lose some customers because people want to eat more types of sea food than can be caught locally. One of its motivations for supporting local foods production is that it is viewed as a sustainable form of food production. Brubekken is an exception here. His main concern is however mainly to uphold traditional production. This form of production is also, as he is aware of, environmentally friendly. The studied local foods suppliers move towards the development of more sustainable supply chains which means retaining the existing market, learning and pooling physical resources with which to expand.

5.2. Brand and reputation management

Some local foods products have a long history which represents a unique local culture. Local foods are therefore not merely a geographical concept; it includes socio-cultural factors like local culture, society and habits of the local society. But some local products, such as those of Horsgaard and Halås, are products developed by the producer and not rooted in traditions. They create their own local food culture through branding. The market for local food is still expanding and more people support local foods than before. The supply chain includes several market strategies that are being combined to increase sales volume and turnover. But they are not developed blindly. The local foods producers are close to their customers since they all have some form of direct distribution in addition to selling through Coop Mega. Most of the local food producers have a good relationship with the customers, not only a business relationship. It contributes to mutual confidence to learn from the customer and thereby maintain and increase the sales volume. Knowing what the customers really care about provides a competitive advantage. Local foods producers may use market proximity to attain a competitive advantage in the marketplace in competition with industrial foods suppliers. However, supplies of these small scale producers may not always cope with demand fluctuations, especially if raw material supply also fluctuates. For example, the fish product producer often refuses orders because they cannot accept too many customers in order to ensure good quality and taste. This indicates that reputation management is embedded in the producers being local and having good personal ties with actual consumers in the market. This is in part facilitated by that most of the producers both have local shops as well as supplying the Coop Mega supermarket.

5.3. Short transport

The transportation method is mainly self-transport. That gives the local food producers flexibility, fast delivery and high frequency. They find simple synergies through their transport function. They can do different things at the same time during transportation like shopping, purchasing, meetings, including the delivery. Self-delivery provides accordingly more flexibility for the farmers' private life and shows how the borderline between business and pleasure in local foods production is moving and not entirely clear. For more distant destinations, they use joint distribution, or third-party logistics by wholesaler. The logistics of the local foods suppliers is short, but this is only natural given their small size and that they have not yet expanded to handling a larger market except for minor surplus foods. However, in cases of distributing foods over longer distances, the local foods producers employ the use of logistics service providers. This shows potential for that the local foods producers are not strictly bound to being local if a business opportunity is found at a greater distance. When Horsgaard sends fish to Coop Mega at Oppdal, about 3 hours driving time away, this shows that transport distance is more an obstacle than a feature of local foods producers.

5.4. SCM strategy

The supply chain of local foods is clearly shorter than for the inventory food system. It has the advantage of fast reaction, short lead time, direct relationship etc. The inventory and production strategy they used is based on the product shelf life. Normally, the production will not stop unless the freezer is full. Also the durability affects

the transportation strategy applied where more freshness will require more frequency and small volume each time. For most of local producers, working to produce local foods is economically speaking not very "optimal" because of low income and a heavy workload. Some of the producers also seem to have limited choice because of very different reasons. They are local producers because the resources have been inherited. They grew up on the farm, or the company was started by a grandfather as in the case of Horsgaard. For most producers supplying their local foods is clearly a passion that is hard to part with. The reason can be divided into two parts, internal and external. The internal reason is the desire to take care of own children, land and hobby, while the external reason is that it is hard to find a job and some are compelled by traditional culture. The internal reason is related to gender, since women take more care of family and children; the main purpose is to have sufficient earnings instead of expanding, although some want to expand. Some also provide some value-creation service in addition to attract people like accommodation, meetings, tourism, restaurant etc. This kind of activities can boost its main business and help them survive in a brutal competitive environment. The competition is from both industrial food companies and similar local food producers. The sentence "a lot of local producers disappear each year" was said by almost all of the producer informants in this study.

Several marketing methods are applied to develop the whole market and offer many kinds of help to attract more people into this business. The government has held several local food festivals and sends people to international food conventions annually. For Coop Mega, they like to display local foods on their shelves since this boosts the quality perception of their retailer brand. However, this study points out that local foods production displays advantages, when systemized, such as market closeness, reaping efficacies of small scale and harnessing producers' and consumers' enthusiasm, this form of business may provide good means of sustainable niche-type food supply.

Developing efficiencies of small scale in the logistics of local foods chains is a pertinent path of local foods development. The local food supply chain is a short supply chain. It consists of three main entities in our case: customers (Coop Mega), local producers and the producer's suppliers. Between our interviewed six local food producers, Brubekken is not a supplier of Coop Mega in Molde. SCM is concerned with integration in the context of the relationship between a company and its customers and suppliers. Improved buyer-supplier relationships can lead to innovation. In addition, close buyer-supplier relationships might also result in setting mutual operation targets which can be beneficial for both parties. In our case, the fish supplier Horsgaard and bakery Fole Godt both have a good relationship with the Coop Mega supermarket. They supply Coop Mega daily and have a good personal contact with each other. This shows that SCM strategy, to the degree the local foods producers are thinking long term on how to integrate their supply network, they are predominately focused on networking and developing relationship ties with suppliers, and most distinctively, with partner local foods suppliers.

5.5. Logistics

Logistics is in this network case often carried out by the local producers themselves. This applies mainly to deliveries in the main local region. Because their operation is small sized with not many full-time workers and the production volume is quite small, they express they have no need for outsourcing their transport operations. In cases of fresh local foods, the use of inventory is limited for finished goods limiting this aspect of logistics. Heimebakst freezes their lefse products. The inventory management system in this case is very "home-built". In general small local producers are responsible for simple packaging, warehousing, and transportation. The inventory strategy involves two different types. One way is routine and contract-based, a form of push strategy. The other is inventory based. When inventories are low, an order is placed indicating a pull strategy. In cases where supplies are daily to Coop Mega, supplies are based on a relatively predictable contract-driven flow that is more push-based. The lefse supplier and the syrup supplier follow a shop inventory-based strategy. Their products can be stored. For lefse, they will stop production when the freezer is full. That is also true for two cheese producers, at least regarding hard cheeses. According to the interview with them, soft cheese can keep for 10 weeks while hard cheese can keep for 2 years. There are many challenges to local foods producers like small company size, quite tough market competition, deficient raw material supply, high transportation cost to distant places, etc. Local producers have a limited possibility to break these limitations. They seem therefore inherently in need of government aid. The government can provide help in terms of finance, technology and resources. There are several strategies to help local producers develop. They have started to build a local food hub to establish an efficient logistics system through horizontal integration with other local foods suppliers.

5.6. Interdependencies and the exchange economy

The interdependency between Coop Mega and its local suppliers is relatively high. This is clearly a reciprocal form of interdependency. It is the interaction between Coop Mega Molde and its local foods supplier that is foundation for sales. These local foods suppliers are however small, so the impact of these relationships on Coop Mega Molde's own identity and market positioning is limited. It is fair to say that the local foods suppliers are more in need of their supermarket customer than vice versa. However, the local marketplace being relatively transparent, Coop Mega Molde is clearly careful in maintaining good relationships with their local foods suppliers, not mainly to make large sums of money on this small sector of business, but to ensure the totality of the supermarket. The exchange economy is important, but has less the character of an "economy" in the case of relationships in the local foods than a setting for sustaining an overall brand image of the suppliers and the supermarket. Coop pays attention to local food market because of the increasing customer demand. For small local producers, they are also dependent on Coop for survival.

The key competitive advantage of local foods is differentiation in the market. "Local" is at core a logistical term. It helps describe the place and distance factors of the supply, features that imply particular logistics solutions. The main competitive advantage of local foods is however associated with features of demand and not cost nor price. There logistics quality is of greater importance and is supporting in cases of local foods supply. The logistics is not the key issue. The exchange economy is, however important, and also here, quality is decisive and not efficiencies. Customer service is accordingly the keystone for small local business to stay competitive and survive in the industrialised overly modernistic marketplace. Differentiation is in the cases rooted in the particularities of the service associated with being a local foods producer. It is not necessarily rooted in being organic, traditional or fresh, although one or more of these factors may be important. The main competitive advantage lies clearly in small size and ability to meaningfully communicate that local means quality to consumers. The concept of quality is related to customer value, and being niche market actors, they are small enough to create sustainable production. Coop takes local food as a "bait" product to attract more customers. Nobody goes there only to buy local foods. If local foods make more people shop there, they will sell more of everything. The presence of many local foods strengthens Coop Mega Molde's position as a quality supermarket. The main reason why Coop Mega sells local food are therefore rooted in perceptions of customers preferences. The demand is also measurably increasing over the last years.

From the local foods producers' perspective an impression is evoked that the supermarket is the preferred first choice for retailing local food as opposed to direct sales form the producer. Therefore, most small local producers want to find a place for their products through this form of retail. There exists a reciprocal interdependency in these relationships associated with strategic branding efforts rooted in quality supplier customer interaction. This branding effort focusing on local foods as quality foods made by people we seem to know is again what sustains the logistics of these local foods suppliers. Because of this reciprocal interdependency in the buyer-supplier relationships, the purchasing strategy of Coop is to communicate closely with its suppliers, focus on long-term value and fully think about vertical integration in order to achieve the wider quality that not only consists of the local foods technical features, but includes the wider story of this product including knowing who these local producers are.

7 Conclusion

The technical aspect of these logistics solutions of the local suppliers is simple, but so are their logistical needs. It is questionable whether, as long as the local foods producers continue to have spare capacity, they should increase production. Even though the logistics is not the core to competitive advantage, this does not mean that better logistics solutions should not be developed. The cooperation between Heimebakst and Brubekken, sharing a van, is an indication that these suppliers may seek to increase horizontal integration and distribute foods increasingly together, paving the way for their growth. Producing the logistics themselves is, however, feasible since they are now so small. However, as they seek to expand into new and unknown market territory a need to increase the outsourcing of their logistics as well as sales and marketing will expectedly emerge. The paradox may then emerge, as they grow, they will lose their local image and market positioning. This will be a threat the local foods producers must then address and an area of future research would be to seek for "smart" solutions regarding the local brand and thereby communicate this special type of quality. To protect their local brands strength in communicating a form of quality, and at the same time expanding into new markets, producing higher volumes, and transporting over longer distances. A core question will then be, can and should

local foods remain geographically local, and is it possible to sell this slightly paradoxical interpretation of "local foods" to the mass market?

An important question then emerges as to how strategically significant is the short transport of goods in the case of local foods as industry? An alternative mode of development would be to keep intact the short transport distances and make local food production more efficient by pooling different local foods producers to work together to cooperate on production, sales, purchasing and logistics. Both scenarios imply increased modern local foods supply, but not copy-cat resemblance of industrial food production and distribution. Given the strength of local foods in consumer perceptions, it is natural that transforming local foods producers into industrialised foods producers is a possibility, one that should be considered with great caution since the developed quality differentiation may become easily lost if the companies do not tread warily into this territory of modernistic food supply.

The overall conclusion of this study indicates accordingly that local foods supply is a clear variation of food supply, different from modernistic industrialized food production and distribution. Interdependencies in modernistic food supply are predominately sequential. In local foods supply networking is the all-important supply chain activity to sustain local foods production. This implies that reciprocal interdependencies are most predominant in this form of physical distribution. This also provides a view that as an industry structure. Local foods production has much in common with many forms of reciprocally interdependent service supplies. These local foods supplies are also short in structure just as service supply chains. This also implies that in developing local foods supplies efficiencies can clearly be found in developing the exchange economy, how the local foods producers interact in the supply chain with other actors. This involves both vertical and horizontal integration. Simply stating, local foods suppliers are recommended based on this study to develop their business as a service offering and not on the premises of modernistic food supply structure. How this may be done in practical terms represents a direction for future research. Clearly, local foods production, even though quite similar to service production, is also distinct form this type of industry, and will therefore need to find its own form.

References

- Abatekassa, G. and Peterson, H.C., (2011). Market Access for Local Food through the Conventional Food Supply Chain. *International Food and Agribusiness Management Review*, 14(1), pp. 63-82.
- Aghazadeh, S.-M., (2004), Improving Logistics Operations Across the Food Industry Supply Chain. *International Journal of contemporary Hospitality Management*, 16(4), pp. 263-268.
- Amilien, V., Schjøll, A. og Vramo, L.M., (2008), Forbrukernes forståelse av lokal mat. Statens Institutt for Forbruksforskning. Oslo, Fagrapport nr. 1-2008.
- Bioforsk, (2012), Matlyst Nr. 2, Nyhetsbrev Fra Kompetansenettverket for Lokalmat i Nord-Norge. <http://www.bioforsk.no/ikbViewer/Content/100543/Matlyst%20nr.%20%202012-web.pdf> (download: 02.12.15).
- Brown, C., (2003), Consumers' Preferences for Locally Produced Food: A Study in Southeast Missouri. *American Journal of Alternative Agriculture*, 18(4), pp. 213-224.
- Christopher, M. (2011). *Logistics and Supply Chain Management*, FT Prentice Hall, London UK.
- Coley, David, Mark Howard and Michael Winter (2009). Local food, food miles and carbon emissions: A comparison of farm shop and mass distribution approaches. *Food Policy*, 34 (2), pp. 150-55
- Darby, K., Batte, M. T., Ernst, S., Roe, B. (2008), Decomposing Local: A Conjoint Analysis of Locally Produced Foods. *American Journal of Agricultural Economics*, 90(2), pp. 476-486.
- Deller, S. and Brown, L., (2011), Local Foods and Community Economic Growth and Development. Paper prepared for the Department of Agricultural and Applied Economics, University of Wisconsin-Madison, USA.
- Deller, S. and Brown, L., (2012), Thinking About the Economic Impacts of Local Food System. Download: <http://wilocalfood.files.wordpress.com/2012/02/2012-wlfs-thinking-about-the-economic-impacts-of-local-food-systems.pdf> (Download: 18.04.14).
- Dubois, A., and L.-E. Gadde. 2002. "Systematic Combining: An Abductive Approach to Case Research." *Journal of Business Research* 55 (7), pp. 553-560.

- Dunne, J. B., Chambers, K.J., Giombolini, K.J. and Schlegel, S.A., (2011), What does 'Local' mean in the Grocery Store? Multiplicity in food retailers' perspectives on sourcing and marketing local foods. *Renewable Agriculture and Food Systems*, No. 26, pp. 46-59.
- Ellram, L., Cooper, M. (1993). Characteristics of supply chain management and the implications for purchasing and logistics strategy, *International Journal of Logistics Management*, 4(2), pp. 1-10.
- Engelseth, P. (2009). Food product traceability and supply network integration. *Journal of Business and Industrial Marketing*, 24(5/6), pp. 421-430.
- Engelseth, P., Wongthatsaneorn, W., Charoensiriwath, C., (2014), Food Product Traceability and Customer Value, *Global Business Review*. 15(4 suppl.), pp. 875-1055
- Engelseth, P. (2015), Customer-Responsive Supply of Local Foods, *Journal of Operations and Supply Chain Management*, 8(3), pp. 111-119.
- GRACE. (2014) Local & Regional Food Systems. Download 02.12.2015:
<http://www.sustainabletable.org/254/local-regional-food-systems>
- Hammervoll, T., (2014), Service provision for co-creation of value: insights from exchange- and production economy perspectives. *International Journal of Physical Distribution and Logistics Management*, 44(1/2), pp. 155-168.
- Harrison, A. and Van Hoek, R. (2008). *Logistics Management and Strategy*, 3rd edition. Pearson Education Limited, King, R. P., Hand, M.S., DiGiacomo, G., Clancy, K., Gomez, M.I., Hardesty, S.D., Lev, L. and McLaughlin, E.W., (2010), Comparing the Structure, Size and Performance of Local and Mainstream Food Supply Chains. USDA ERS Report Number 99.
- Kotz Samuel, David L. Banks, Campbell B. Read (1999). *Wiley Series in Probability and Statistics*. Wiley-Interscience; Volume 3 edition.
- Kvam, G.-T. og Magnus, T., (2012). *Vekststrategier for Lokale Matbedrifter*. Norsk Senter for Bygdeforskning, Rapport 9. Trondheim.
- Lambert, D.M., Cooper, M.C. and Pagh, J.D. (1998) Supply chain management: Implementation issues and research opportunities. *International Journal of Logistics Management*, 9(2), pp. 1-19.
- Low, S.A. and Vogel, S., (2011), Direct and Intermediated Marketing of Local Foods in the United States. U.S. Department of Agriculture, Economic Research Service. Economic Research Report Number 128.
- Magid, J., Granstedt, A., Dýrmundsson, O. Kahiluoto, H. and Ruissen, T., (2002). Urban Areas, Rural Areas and Recycling: The organic way forward? Danish Research Centre for Organic Farming (DARCOF), Report No. 3. Copenhagen.
- Marsden, T., Banks, J. and Bristow, G., (2000), Food Supply Chain Approaches: Exploring their Role in Rural Development. *Sociologia Ruralis*, 40(4), pp. 424-438.
- Martinez, S., Hand, M.; Da Pra, M, Pollack, S., Ralston, K., Smith, T., Vogel, S., Clark, S., Lohr, L., Low, S. and Newman, C., (2010), Local Food Systems Concepts, Impacts and Issues. Economic Research Report No. 97. United State Department of Agriculture, USA.
- Mehl, S.H., (2012). 1700 norske lokalmatprodusentar. Download 14.03.2014
<http://www.nationen.no/tunmedia/1700-norske-lokalmatprodusentar/>
- Monczka, R.M., Morgan, J.(1997).What's wrong with supply chain management?, *Purchasing*, 122(1), pp. 69-73.
- Parsons. T. (1960), *Structure and processes in modern societies*, The Free Press of Glencoe, New York.
- Saunders, C., Barber, A. and Taylor, G., (2006), Food Miles: Comparative Energy/Emissions Performance of New Zealand's Agriculture Industry. Research Report No. 285. Lincoln University, New Zealand.
- Sterns, J.A., D.B. Schweikhardt, and H.C. Peterson, 1998. "Using Case Studies as an Approach for Conducting Agribusiness Research." *International Food and Agribusiness Review* 1 (3), pp. 311-327.
- Thompson, J., (1967), *Organizations in Action*. McGraw-Hill, New York.
- Wolf, M.M., Spittler, A. and Ahern, J. (2005), "A Profile of Farmers' Market Consumers and the Perceived Advantages of Produce Sold at Farmers' Markets". *Journal of Food Distribution Research*, 36 (1), pp. 192-201.
- Zepeda, L. and Leviten-Reid, C., (2004), Consumers Views on Local Food. *Journal of Food Distribution Research*, 35(3), pp. 1-6.
- Zepeda, L. and Li, J., (2006), Who Buys Local Food? *Journal of Food Distribution Research*, 37(3), pp. 5-15.