TACKLING THE CHALLENGE OF ORGANIC RAW MATERIAL SUPPLY

Qualitative research on food processors supporting organic conversion

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Preface

I'm ChingYi Wang, studying program food supply chain management in Aeres University of applied Sciences. All academic credits were received during academic year 2016- 2017 when I participated in an exchange program. I decided to complete this diploma fully which led me to complete this thesis in academic year 2017-2018.

This research is written as graduation thesis for Aeres University of Applied Science. The research targets the food processing industry to discuss challenges and solutions to organic raw material supply.

Elements in the research proposal have been changed based on the feedback of thesis coach. Extra change is made with methodology. More details were added to the coding method and description of farmers who are interviewed. Additionally, improvements are made from the introduction.

Sourcing managers from Danone are invited to participate in this research to share their expertise and experience in Danone.

This report is coached by Patrick Burgess and supported by Danone.

Contents

Summary

With the growing demand of organic food, the food industry needs to answer to the consumer demand. However, according to various statistics on the EU level there is a gap between the growth of organic market demand and growth of organic farmland. Therefore, the need to secure organic raw material is identified. Despite the abundant literature on supplier relationship, knowledge gap is identified that there is lack of information on how processors can answer to the challenges of suppliers and how suppliers can cooperate with the processors as well as how to balance the profitability on both sides and create a win-win situation. This research identifies the main challenges of producers to adopt organic practices as well as processors to secure organic raw material and maintain supplier relationship.

The main question for this research is to understand how can large food processers support farmers to convert to organic farming. To answer to this question 5 sub questions are asked in order to map out the answer to the main question. Sub questions include “What is the current way of working (relationship management) of large food processors with farmers?”; “What financial and technical or other support multinational companies can provide to farmers to convert their farm from conventional to organic?”; “What platforms or ways of communication is used to facilitate the flow of information and knowledge?”; “Is the input and benefit of supporting farmers to convert to organic balanced?”; “Does what the processer can offer fit the needs of farmers?”

Data is collected from selected farmers and sourcing managers from food companies, in this research Danone is the base of discussion and source of sourcing managers, using qualitative research methods in the form of interviews to understand how processors can support producers to convert their practice into organic with the goal of tackling the challenge of organic raw material sourcing. The current framework of organic production in EU is laid out by reviewing the regulations and guide lines set out by the European Union; various statistic of the current market and farmland and literature review from previous research. Supplier relationship is explored by literature review on the definition, development and management. Benefits from successful relationship management is identified and specific needs applicable to agri-food chain is explained also with literature review.

It is concluded that there is clear motivation for processers to support farmers to improve agriculture practices to be more sustainable. The motivation linked directly to converting conventional farm to organic varies with different business background. The motivation is stronger and more focused on conversion when there is need of organic raw material in specific region or have specific requirements. The main challenge of both farmers and processers is the uncertainty of future market trend and productivity of organic agriculture practice. It is identified that by forming a long-term partnership between processer and farmers, this challenge can be solved with upfront contract agreements and investments in agriculture practices.

Key short term recommendations include integration of demand and inventory planning system to improve the accuracy of forecast in demand. Upfront negotiation and contract terms such as pricing depending on mutually agreed margin and productivity clause to adjust raw material price according to the output of production is recommended. On the long term, investment and innovate on agriculture practice such as new natural pesticides and herbicides and weed removing machinery is recommended.

1. Introduction

Since the early 1970s, as consumers become more conscientious about the environment, health and what they are really eating (Dolan, 2008). As a result, organic products have become a more and more popular topic of discussion among growers, handlers, retailers, consumers and researchers (Dolan, 2008). With growing demand for organic products, the area of organic farmland, number of producers and processors are also increasing. Per capita consumption of organic food grew 111% and organic farmland grew 67% in Europe from 2004 to 2015 (Willer, 2016). Answering to the growing demand, multinational food companies are launching organic product lines and projects to fulfill the market need. Phil Howard, a researcher at the Centre for Agro-ecology and Sustainable Food Systems, notes that an estimated 40% of the packaged organic foods on the shelves of natural food stores are produced by some of the biggest companies in the world (Lindsay, 2006).

There is existing literature on the technical aspect of organic production (Dunsinea, 2002) (Niggli, 2015) and the guidelines are clearly established (EU, 2014) (EU, 2007) (Schwarz, 2010). Also, research has been done on the consumer motivation on organic production (Aertsens, 2009) as well as statistics on the demand and supply of organic products (Willer, 2016) (Baker, 2009) (Erik, 2014). Despite the abundant of literature highlighting the importance of supplier relationship (Cannon & Perreault , 1999) (Hansen, 2009) and now relationship is developed (Dwye, Schurr, 1997) and managed (Kottila, 2005; MacDonald, 2004) throughout the supply chain, there is a gap on the connection between organic processers and producers (Boothby, 2012). The large-scale food processors have difficulty securing supply (Boothby, 2012) while some farmers see the lack of marketing channels as a barrier to convert to organic production (Reaves, 2014).

This research aims to understand how food processors can connect with organic producers, in order to develop close relationship and tackle the challenge of securing reliable supply. Supporting contracted farmers to convert is the main way discussed in this research. The focus for food processor will be put on Danone, a French food company who is one of the leading food company globally. The business has four lines: Fresh Dairy Products, Waters, Early Life Nutrition, Advanced Medical Nutrition. Health & nutrition. The mission of Danone is to bring health through food to as many people as possible. Danone made commitment to bring consumers more organic product lines by 2020 (Danone, world food company), meaning that Danone would need to secure organic raw material source in near future. The target audience of this research is food processers on the similar scale as Danone.

This research focuses on large scale buyers helping producers in a production conversion process. Therefore, the need to highlight organic food production aspect, supplier relationship aspects and supply chain management aspects are needed.

Organic food production

Organic production is an overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards and a production method in line with the preference of certain customers for products, produced using natural substances and process (EU, 2007). Organic farmers use system oriented practices and improve the soil fertility using legumes and compost to incorporated into soil and recycling the local nutrients and organic matter (Niggli, 2015).

The aim of organic production is to put emphasis on environmental and animal protection, practicing production with high biodiversity and usage of internal resource in order to increase consumer interest and gain confidence. Consumer expectation toward organic food is to be natural, free from chemical pesticides, mineral fertilizers and GMO. The naturalness of organic food products are often associated with health benefits, also there are a number of additional sustainability aspects that consumers expect from organic food like resource saving, regional production, good taste and high quality (Meyer-Höfer, Marie von, 2015).

Regulation for organic production and processing on the EU level

The EU regulations for organic production and handling harmonize the requirements within the European Union, making the requirements transparent and allow the consumers to have the same interpretation for all member states. The regulations for organic production handling include EC directives 843/2007, which provides the framework, include EC directives 889/2008 and include EC directives 1235/2008, which details the applied regulation and import regulation. The regulations concern all stages of production. Starting from the definition of scope, meaning what can be certified, to processing, import and retail. The whole supply chain must be certified in ordered to have the final product labeled organic. (EU, 2007)

Organic regulation for fresh produce

Regulation of organic production starts from assessing the fertility of the soil. Tillage and cultivation practices must ensure that the soil organic matter is maintained or increased. Stability and biodiversity of the soil must be facilitated and erosion prevented. Means to maintain soil fertility according to the EU requirements include multiannual crop rotation, livestock manure or organic material and legumes and green manure crops. If the mentioned practice is not sufficient to fulfill the needs of plants, only fertilizers and soil conditioners referred to in Annex I of the EU regulation may be used. Only physical or biological methods can be used to prevent the pests from damaging the crops. When the methods mentioned in the regulation are not sufficient, only plant protection products referred to in Annex II of the EU regulation may be used. Other than the farming practices, regulations are defined from the seeds and seedlings to the inputs to ensure the produce is up to the organic standards. When the farm is mixed with conventional and organic, the produce must be split clearly and proven effective. Use of GMOs and inputs produced from GMOs are prohibited. (EU, 2007)

Organic regulation for processed product

Products must contain only organic agricultural products, with up to 5% authorized exemptions from Annexe IX of (EC) 889/2008. Water and salt are not taken into consideration. The prohibited processes include Ionizing treatments, radiation and use of GMOs. Additives and processing aids are restricted to the list mentioned in Annexe VIII of (EC) 889/2008. The implication of the regulation is to use fewer additives and additives of nature origin if used, simple and less processed recipes as well as performing the cleaning, identification and traceability procedures according to the organic standards. Other than the requirements on the product itself, the operation is also strictly regulated. Precautionary measures must be taken to avoid all possible contamination, of which appropriate cleaning processes is one of the most important operations. All procedures of the production must be well documented and a detailed quality manual has to be updated and well communicated to all of the staff associated. On top of that, the business must ensure that no non-organic product is sold with false claim or logos. Activities performed by operators at all stages of production, preparation and distribution of organic products should be submitted to a control system set up and managed in

conformity with the rules laid down in Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls.

Organic regulation for conversion to organic

The conversion of conventional farm land to organic takes at least two to three years depending on the type of crops and the condition of the soil. The date of beginning the conversion period is either the contract date with competent authority or the earliest date of changing to organic practice with statement from a control body (EU, 2007). For arable and horticultural crops, 24 months from the date of signature that an undertaking is given to farm to these standards before sowing or planting the Symbol Crop. For grassland, 24 months from the last use of any materials not permitted in these Standards until the grass is used for Symbol grazing or the production of Symbol hay or silage. For perennial crops excluding grassland, 36 months from the date of signature to an undertaking to farm to these standards until the harvest of the first Symbol crop. If orchards have established history of non-intensive management, the conversion period may be reduced to 24 months, at the discretion of the Certification Panel, on the recommendation of the Inspector (Dunsinea, 2002). The conversion process must be carried out according to a progressive plan approved by the certification panel. Products may only be sold as in-conversion after certification panel has approved a production plan or conversion plan. Land and production inspected and registered with an organic certification body. (EC regulation 2092/91).

Organic certification process

The principles for organic certification programs are defined by the International Federation of Organic Agriculture Movements (IFOAM). In addition, there are regulations from the producing country and exporting country that need to be followed (Rehber, 2003.). Generally, the certification can be realized in three parts, producer, production system and products (Rehber, 2003.) .The producers and the fields as well as the facilities used in the production needs to be compliant to the organic standards. The production, handling and processing method needs to follow the guideline of IFOAM and must be kept separate in time or space from non-organic food. Products can be tested in some cases to determine whether a product is produces according to the standards. Finally, products are labeled.

In the certification frame work, there are clear standards that formulate the ways of working of all parties of certification and the parties involved. All the producers are bonded by contract to the certification body. The whole system must be handled by a third party that has status for registration and certifications. (Rehber, 2003.) Inspection would occur to the production, transaction, storage, processing, labeling and certification period.

Labeling of organic product

There is different labelling regulation for organic food, food containing organic ingredients and food in conversion to organic. Foods may be labeled “organic” when at least 95% by weight, of its ingredients of agriculture origin are organic. Foods may be labeled “contains organic ingredients” when part of its ingredients of agriculture origin are organic (EU, 2007). The prohibition of GMOs and ionization as well as restrictions on additives is the same as organic labeled products. Foods containing only one crop ingredient of agriculture origin in the process of conversion can be labeled “in conversion”. Only the products labeled “organic” is allowed to use the EU organic logo. Packaged organic foods are required to use the EU organic logo. This is not applicable when the product is coming from a non-EU country. Where the EU logo is used, consumers should be informed about the place where the agricultural raw material of which the product is composed is farmed. Also, to ensure credibility, it is required to provide the code number of the certifying organization (EU, 2007)

Organic support scheme

There have been policy support schemes for organic farming in Europe since 30 years. The first scheme was introduced in Denmark in 1987, shortly followed by other countries. Germany introduced conversion aid under the EU extensification programme in 1989 (Schwarz, 2010). Today there are several support scheme provided by the European commission. Direct payment in post-2013 common agricultural policy(CAP) provides farmers with practices maintaining permanent grassland; crop diversification with requirement of minimum cultivation of two crops when his/her arable land exceeds 10 hectares and at least three crops when his/her arable land exceeds 30 hectares; maintaining an 'ecological focus area' of at least 5 % of the arable area of the holding for farms with an area larger than 15 hectares excluding permanent grassland. Rural development and Fisheries and Maritime Measures Support provides financial support for conversion and maintenance. In-conversion payment up to 2 years. Supplementary measure 6 (SM6) provides additional payments to wish to continue after conversion. A new scheme is proposed by the EC to merge the School Fruit and Vegetables Scheme and the School Milk Scheme to encourage the sourcing of organic products in educational establishments creating budget of €150 million for fruit and vegetables and €80 million for milk. In terms of research and innovation, European Innovation Partnership on Agricultural Productivity and Sustainability (EIP AGRI) proposed "Horizon 2020" which includes several opportunities to support multinational demand-driven innovation in agriculture, especially through thematic networks and multi-actor research approaches (EU, 2014).

Trend of organic demand

The rising of organic demand follows the world trend of shifting from conventional product to product and services that provide health and wellbeing both to the consumer and to the environment (Dias, 2015). The demand of organic products has been growing worldwide. The organic market of EU grew at a higher rate than in two previous years with retail sales representing a growth of 7,6% from 2013 to 2014. All countries in EU 15 with new data available showed growth on various levels. Sweden showed the most growth rate of 45% while Belgium showed a smaller growth of 3,8%. The UK had a growth of 4% for the first time after three years of negative growth. In terms of the size of organic retail market, Germany is the largest organic market followed by France and UK. Per capita consumption of organic product in EU has almost doubled during the last decade. With Switzerland, Luxenberg and Denmark having the most spend. (Willer, 2016)

The consumer preference for organic food has been evolving. A survey from University of Minnesota asked participants "When you buy fruits and vegetables, how often do you buy locally grown (organically grown) fresh produce when locally grown (organically grown) options are available?" For locally grown produce, 14% of participants chose "always," 40% chose "most times," 38% chose "sometimes," and 8% chose "seldom" or "never." For organically grown produce, 6% chose "always," 15% chose "most times," 39% chose "sometimes," and 40% chose "seldom" or "never" (Chengyan Yue, Cindy Tong, 2009). This shows that locally supplied products also have it's added value. Four main motivations for organic food consumption: health, taste, environmental friendliness and ethical aspects such as animal welfare (Aertsens, 2009). Instead of just seeing the organic label, consumers are questioning whether the products are locally produces and what is the environmental impact for producing this product as well as the ethical questions such as animal welfare and labor protection (Aertsens, 2009).

Distribution channel of organic produce

Organic products go through a number of distribution channels as fresh products include different kind of retailers such as general retailers, specialized organic retailers, restaurants, direct marketing, farmers market and box scheme (Batt, Rexha, 1999). Aside from understanding how the companies buy, the way farmers sell must be discussed. Large organic farms tend to rely on advance contracts with processors and high-volume retail sales. Those who do not produce a volume sufficient for consistent supply of retailers rely heavily on direct marketing. Medium to small sized organic farmers need to use diverse marketing channels rather than a single buyer, including farmers market, on-farm sales, restaurants and so on. The largest fresh produce farms also integrate packaging and shipping. In the US, 80% sales in the happens in wholesale, 13% sold directly to customer, 7% by the retails (Erik, 2014). In Germany, it is split between traditional food retail and specialist organic food stores. Traditional retail accounts for half of the organic food sale while the other half consists of organic retail shops and specialty shops like bakeries, butchers, fruit and veg stores, open markets and direct sale (Erik, 2014).

Business relationship for buying and supplying firm

Business relationship is one of the key focus of this research. The relationship between processors and suppliers stem from the activity links, including the technical, administrative, commercial and other activities of a company; resource ties, connecting the technology, material resource, knowledge and intangibles of two company, and actor bonds which connect and influence how two companies perceive the other businesses. (Marc Vilanova, 2009). Many research identified the definition and characteristics of supplier relationship. (M.Wagner, 2011) defined relationship as a strategic alliance where a synergistic combination of individual and mutual goals encourages the partners to invest time, effort and resources to create a long-term collaborative effort that achieves individual and partnership strategic advantage. (Carter, C. R. & Rogers, D. S. , 2008) defined sustainable supply chain management as, the strategic achievement and integration of an organization's social, environmental, and economic goals through the systemic coordination of key inter-organizational business processes to improve the long-term economic performance of the individual company and its value network.

Buyer-supplier relationships are built up over time through legal, formal and informal exchange process and relation-specific investments (Ring, Van de Ven, 1994). Relationships should be built up gradually. Resulting in more stability, longer period of business transaction and renewing contracts. Complex contracts and involvement of actors from different background achieve the different goals of relationship. Typical business relationships are symmetrical in terms of resources and initiative. In industrial markets, buyers with more resources and therefore more power to exercise influence are often initiating and developing relationships. While formal contracts are common to deal with the uncertainty and conflicts between businesses, their role is limited. Informal bonding develops trust and build confidence bringing more effectiveness to development of relationships. (Marc Vilanova, 2009)

With the differences of the described characteristics, diverse types of partnerships can be categorized. (Golicic, Foggin., & Mentzer, , 2003) categorized relationships based on their magnitude. Some of the supply chain relationships are partnerships, alliances, joint ventures, network organizations, franchises, license agreements, contractual relationships, service agreements, and

administered relationships. Four types of relationships between buyer and supplier have been given by (Hansen, 2009) including transactional, collaboration, co-production and co-creation in term of exchange. (Cannon & Perreault , 1999) reported that relationships could be classified into eight categories based on similarity of characteristics and traits: basic buying and selling, bare bones, contractual transaction, customer supply, cooperative systems, collaborative, mutually adaptive, and customer is king. In many industries, companies encourage suppliers to be involved in seeking ways to shorten the development time, improve quality, reduce cost, and release new products smoothly. The most well-known collaboration techniques are just in time purchasing (JITP), which makes the customer's JIT operation possible (Gunasekaran, 1999; Kaynak and Hartley, 2006); vendor managed inventory (VMI), where suppliers take responsibility for a range of contracts and manage the buyer's inventory (Simchi-Levi et al., 2003); and collaborative planning, forecasting, and replenishment (CPFR), which involves integrating the supply chain.

Benefits of successful supplier relationships

The importance of relationship quality for total chain efficiency is commonly recognized. Buyer switching behavior can be reduced significantly by enhancing relationship quality. In agri-food chains, including supplying organic raw materials, company-specific measurement is particularly useful because the drivers of relationship quality differ between the processors (B. Schulze, C. Wocken and A. Spiller, 2001). Computer Science Corporation survey of supply chain progress in 2004 shows that the most underdeveloped area of their supply chain involves developing long term relationships with suppliers and customers. This proves that other than the logistic and infrastructural problems including warehousing and inventory management, ethics, trust and the psychological contract is equally important (Reaves, 2014).

The performance of the company depends a lot on the relationship as most of the supply and service are accounted by few major suppliers. A study of more than 100 Swedish companies shows that the ten largest customers and the ten largest suppliers account for more than two-thirds of the total sales and purchases in two out of every three companies (Marc Vilanova, 2009).The level of business satisfaction from farmers is to a great extent determined by the following factors: farmer orientation; management image and satisfaction with communication; price satisfaction; business performance; and the relative importance of dairy farming. Much more important are farmer orientation and the perception of management competence. Understanding farmers' problems as well as communication with the supplier are much more relevant than price perception. (B. Schulze, C. Wocken and A. Spiller, 2001). This shows the importance on relationship management of processors towards the farmers. Price satisfaction also relates to the satisfaction on relationship (Jaervelin, 2001).

Good relationship with suppliers can overcome difficulties in adopting sustainable practices. The buyer and supplier firms share one another's capabilities and work in close proximity to achieve best and sustainable practice on the supply chain (Ronchi, S., Luzzini, D., & Spina, G., 2007). Buyer Supplier relationship is very useful for developing a sustainable supply chain. Relationship management increases the sustainability performance of the supply chain and reduces resistance towards sustainability adoption (Divesh Kumara, Zillur Rahmanb, 2015).

Supplier relationship management

Different corporates have different ways of managing suppliers. Some companies have purchasing strategies focus mainly on cost reduction. Considering that the purchasing process is a preparatory step for facilitating product development or production, a new purchasing approach that can optimize the supply chain is needed. (Park, 2010). Leek, 2002, found companies used one or more of the following relationship management methods: formal documented system, personal judgment and meetings. Park, 2010, classified purchasing strategies can be into two types. One is the competitive approach, which assumes that based on competition between suppliers; buyers can obtain goods for the minimum price. The other is the cooperative approach, where the supplier and buyer form a strategic relationship and cooperate to one another to achieve a long-term goal. Companies are suggested to use a fit for purpose approach.

All in all, the supply chain management system, SRM, indicate the purchasing strategies. Step one, classification of items based on the portfolio model-high-supply risk and low-supply. Followed by analysis of the supplier relationship and finally development of action plans. During supplier selection, first a supplier pool is created; after, partner selection for collaboration. Supplier assessment and development. In addition, this proposed system includes CI, which develops the SRM system through continuous assessment and enhancement (Park, 2010).Quality, price and the ability to deliver are regarded as the most important criteria by which organizational buyers evaluate potential suppliers. All buyers emphasize the importance of the reliability of delivery (Batt, Rexha, 1999).

A special factor influencing supplier relationship quality in agribusiness is the processor's orientation towards farmers' interests. The economic success of a farmer ultimately depends on the performance of the processor. This is especially true for those farmers who are shareholders or are bound by contracts (B. Schulze, C. Wocken and A. Spiller, 2001). There is one main difference between agribusiness and other industries. In agribusiness, processors are confronted with multiple farmer-suppliers. Manufacturers in other industries with single sourcing can easily establish close relationships with a smaller number of suppliers. These close relationships (and mutual interdependence) facilitate high quality, trust and co-operative action. In agribusiness chains, building closer relationships with suppliers is more time-consuming and complex than in other branches (Boothby, 2012).

Supplier relationship for organic raw material suppliers

Food companies secure their food supply mainly by traditional spot market, vertical integration or contract farming (MacDonald, 2004). Spot market is which farmers are paid for their products at the time ownership is transferred off the farm, with prices based on market prices at the time of sale and under agreements reached at or after harvest. Premiums are paid based on factors observable at the time of sale (MacDonald, 2004). Vertical integration is when independent supply, production and marketing function is individually, corporately, or cooperatively owned by a larger company (Dunbar). Contract farming is an intermediary institution between spot markets and vertical integration (Sautie, 2006). Contract farming refers to a system where a central processing or exporting unit purchases the harvests of independent farmers and the terms of the purchase are arranged in advance through contracts. The terms of the contract usually specify how much produce the contractor will buy and what price will be paid. The contractor frequently provides credit inputs

and technical advice (Baumann, 2000). Contacted farming can govern credit, insurance, information, factors of production, source outlet and transaction costs (Sautier, Denis, 2006).

The combined factors of complex supply chain with multinational food companies and nature of organic food, the control and transparency of the supply chain is crucial for organic supply. Possible risks include food fraud, inconsistency of quality and fail of dedication to the committed volume. It is also a challenge for the companies to establish close relationship with the farmers in this competitive market environment (Baker, 2009). An example for lack of transparency and poor control on supply chain is an egg producer in Germany. In 2013 investigation was rolled out with concerns that their organic eggs are not compliant to the standards. This company was a pioneer in organic poultry production in Germany and certified since 1994 managing a number of organic farms, processing facilities and trade companies. It was found that feed control was not sufficiently done as feed samples were tested GMO positive. Also, the company was managing conventional farms without notifying the certification body and trading conventional meat (Neuendorff, 2015).

Trust or distrust has always been a part of business relationships. Trust is a central organizing construct in buyer-supplier relationships. Trust builds slowly from experience as the relationship progresses and vanishes as the firm seek to leave the relationship (B. Schulze, C. Wocken and A. Spiller, 2001) When trust prevails, employees involved in supplier development activities will be more open to knowledge sharing with employees of the other party. Therefore, the outcome of supplier development activities in trust based and reliable relationships will be more positive.

Trust and the level of cooperation with suppliers also impact the risk of supply. (Divesh Kumara, Zillur Rahmanb, 2015)indicated that the farmers show more commitment when their partner is trustful. This research also pointed out that it is the belief of the supplier that the relationship with a processor is so important that it warrants maximum effort to maintain it even if problems occur. The level of inter-organizational corporate behaviours, such as shared planning and flexibility, were strongly linked to the supplier's trust in the buyer firm (Johnston, 2004). Negative impact for resulting from lack of control and transparency is that supplier may also communicate negative information with other potential suppliers of the buying firm, possibly causing the buyer to lose some influence over its suppliers. Tangpong, 2015 acknowledges that punishment through negative word of mouth can be spread in the community.

Challenge for producers

The challenges producers face in terms of farm management include weeds, soil health and fertility, and increasing incidence of weather vitality (2014). Organic farming requires very specific farm management with the limited means of pest control, weed control and fertilization of the soil. While products to fight pest and weed are typically long lasting and targets a wider scope, organic solutions require the products to be applied a specific timing and have more limited results (Ponisio, 2015). In many cases farmer could own both conventional and organic farmland. Demands for documentation and separation of equipment as well as all the measures to avoid cross contamination cost more labor input than conventional farming (Niggli, 2015). To maintain organic integrity, organic produce must be processed, stored and shipped separately from conventional produce at each stage of the supply chain. This can be a difficult challenge as farmers need to sell their perishable products as soon as possible after harvesting, while brokers and distributors need to get their fresh products to retailers just as quickly (Dolan, 2008). In conversion products cannot be marketed as organic. Only products containing single ingredient of agriculture produce can be labeled “in conversion” (EU,

2007). This is a challenge especially for produce contracted by processers with final products containing multiple ingredients as there would not be any differentiation for the products in conversion and conventional. On top of that, there is a yield gap of 20%~25% between conventional and organic farms in average of all crops (Niggli, 2015) further reducing the income of conversion period. In order to close the yield gap, farmers need to have sufficient knowledge to the best practices in order to achieve maximum efficiency (Niggli, 2015). However, research and best practices for organic farming is in many cases not available in the farmers' language nor disseminated consistently making the knowledge inconsistence resulting in difficulties to follow best practices (Reaves, 2014). In terms of distribution, producers often find themselves distanced from the market as they lack the marketing ability. A case study in Ireland showed that one of the biggest barrier is the lack of market outlet and marketing of organic product, resulting in some organic sold in the conventional market (Dunsinea, 2002).

Challenge faced by the processers

Despite the growing in demand of organic produce, the organic farm land area on the other hand showed a different picture. The growth of organic farm land area had slowed down in the recent years. Organic agriculture area grew 2,3% while the number of producers increased 1,4% in 2014. 11,6 million hectors of agriculture farm land in Europe is organic. Of which 7,7 million is fully converted and 1,6 million in conversion. Area of in-conversion farmland showed more increase than fully converted organic farm land. Spain possess the most organic land area of 1,7 million hectors followed by Italy, France, Germany and Poland. The above-mentioned countries represent more than half of the total organic farm land in Europe (Willer, 2016). In terms of in-conversion farm land, Italy, Spain, France and Turkey has the most land in conversion. Turkey has the most producers in Europe with 71,000 producers followed by Italy, which has the most producers in EU. In terms of the use of organic farm land, 45% is used as grass land and 55% for crop land. Fruit and veg are pioneering organic products in Europe, representing around one fifth of many national organic markets (Willer, 2016). Organic vegetables have the highest market share after eggs All over Europe, the Organic market is dominated by perishable fresh produce compared to the conventional market. Top 10 crops in Europe are Plants harvested green, cereals, olives, dried pulses and protein crops, grapes, nuts, oil seeds, vegetables, temperate fruit and citrus fruit (Willer, 2016). Growing number of organic processors are entering the market. The main processers are Italy, France and Germany. The number of processors grew 19% in Europe in 2014. (Willer, 2016) With the increase of organic processors, an increasing volume is supplied by to contracted purchasing (Baker, 2009).

Small operations have challenge regarding the scale of operation. The burden of recordkeeping required for certification, maintaining skilled employee, accounting for all the production cost and more vulnerable to the impact of climate is not balanced by the premium price of their product (Rehber, 2003.) Larger operations face challenge in secure, consistent supply and infrastructure. The obstacle of supply is especially significant for organic processers. Small processers have difficulty finding small quantity supply from distributors. Also, high-quality products are hard to purchase when purchasing in a small volume. The need of locally supplier produce is also not satisfied. Large processors have difficulties securing a high enough volume with local producers. Also, the need of consistent quality is not always satisfied. (Boothby, 2012). Processers often have poor knowledge about small and local companies. In many cases, small producers' products are not carried by the wholesaler where other products are orders (Rehber, 2003.). In most cases, large operations need to balance their conventional operation with organic. Efficiency could be impacted when there is needs to set aside time schedules to dedicate to organic production. Cross contamination of organic and conventional products when there is more than one production line is also factor that may impact

the efficiency of production (Boothby, 2012). It is clear that the main challenge of the organic trend lies in the insufficient of supply rather than the lack of demand.

Marketing of organic products is also a challenge for the processors as consumers do not exactly know how to define organic food or what organic food labels exactly stand for (Janssen and Hamm,, 2011). This is especially important for multi- national food companies as different perception of "natural" or "chemical free" might vary significantly between different countries, cultures and consumer segments and could be a potential source of consumer disappointment or even dissatisfaction (Meyer-Höfer, Marie von, 2015). Processors can be vulnerable to food fraud if the supply chain lack transparency (Neuendorff, 2015).

Knowledge Gap

The literature review provided shows the growing trend of organic demand and the consumer preference toward organic products. Answering this need more organic processors and entering the market and existing food processors are expanding their portfolio. Danone for example had set the commitment to have organic offer for100% of their kids brand in France by 2020, and this is one of the many organic products this company plans to launch. The need to secure raw material is immediate. However, there is an identified gap between supply and demand. With the limited supply, different marketing channel further splits the available volume. This pose as a critical challenge for food processor such as Danone. Alongside with other challenges that were identified. The biggest challenge for organic producers and producers converting to organic is the technical solutions to compensate the limited use of fertilizers, herbicides and pesticides. Other than that, less yield and less overall income poses as a major barrier for farmers to convert to organic. Lack of knowledge on marketing or market outlet makes it hard to distribute the organic products.

To tackle the challenges, well established supplier relationship is needed. Connection must be made between the producers and processors to answer to the needs of each other. There is existing research showing the benefits of increase of trust resulting from successful relationship development and how to develop and management it. The literature has well defined and categorized supplier relationship development and laid out detailed instruction such as step by step plan in supplier selection, partnership and evaluation. The importance of trust and transparency throughout the supply chain especially in organic is also highlighted.

However, there is lack of information on how processors can answer to the challenges of suppliers and how suppliers can cooperate with the processors as well as how to balance the profitability on both sides and create a win-win situation. On the point of view of processors, what would be the benefit on the short (5~10 years) and long term (more than 10 years). Hypothesis is that processors can support to help their contracted farmers to convert to organic.

To close the knowledge gap, the following main question and sub questions are asked.
Main Question
How can large food processers support farmers to convert to organic farming?
Sub Questions
Sub quesition1: What is the current way of working (relationship management) of large food processors with farmers?"

Sub quesition2: What financial and technical or other support multinational companies can provide to farmers to convert their farm from conventional to organic?
Sub quesition3: What platforms or ways of communication is used to facilitate the flow of information and knowledge?
Sub quesition4: Is the input and benefit of supporting farmers to convert to organic balanced?
Sub quesition5: Does what the processer can offer fit the needs of farmers?

Relevance

Main question to ask is how can food processers, such as Danone for this research, support farmers to convert to organic farming. To answer this question, the current picture must be identified such as what is the current way of cooperating with farmers and what added value can be provided to motivate the conversion. The ways of support need to be specified. There could be technical, financial or support in other ways or forms. The platform or ways to communicate knowledge and information between the producers and processors must be clarified. Also, whether the support provided by the processors meet the needs of the producers need to be confirmed. Finally, the way to processers balance their input and benefits need to be explored. The added values for the processor and producer needs to be listed and confirmed to ensure a win-win situation.

The hypothesis is that the processers are able to propose a model of working with farmers to secure the availability and pricing competitiveness of raw material according to the nosiness needs without compromising the sustainable profitability of farmers.

2. Material and Methods

Research method – Qualitative research(why)

The direct relevant audience and target of this research are sourcing managers of food processing companies. The orientation of this research is to connect the experience of processers and farmers therefore qualitative approach would be best suitable (Smith, 2015) as consequences, deviances, norms, processes, patterns, and systems can be well understood and communicated (Barney Glaser, Anselm. Strauss, 2017). The data will be collected using qualitative research methods in the form of interviews. Interviews would enable data collection with structural conditions as interviews are mostly used to obtain in depth knowledge on a small population and be able to follow up on interesting responses as well as obtain the point of view with the topic (Hoyo, Maria de, 2012).

Selection of candidates

The sample size of this research is dependent on the purpose of the inquiry, the stakes involves and what can be done in available time and resources (Marshall, 2013). The purpose of the inquiry is to obtain experience of sourcing managers and business orientation of the selected company for this study. Also, to validate the strategy of the company. The stakes involved are the difference in category and therefore customer of the final product leading to different orientation on sourcing. This research interview four sourcing managers and four farmers achieving eight interviews in total.

The processor selected for this research needs to have the strong motivation and definite business orientation to invest in organic farming and sustainable sourcing. The processer selected to participate in this research is Danone for its clear commitment to launch several product lines which are fully organic and its defined goals of “Food Revolution” in 2030 in line with the vision of the company “One Planet. One health. One of the Brand model defined is to “Preserve and renew the planet’s resources” which commit to sustainable sourcing for all ingredients and protect soil health through regenerative agricultural practices co-developed with partners (Danone, world food company, 2018). Four sourcing managers from Danone with scopes of fruit upstream for dairy products, team leader of baby food ingredient team and fruit and veg for baby food division selected to participate in interview for this research. The detailed portfolio and sourcing scope is attached with interview transcript in the appendix. The selection is based on the scope of the sourcing managers’ category and their involvement in organic projects.

Four farmers selected to participate in interviews. The criteria of selecting farmers are as follows. The farmers selected are farmers who own conventional farmland in Europe. The farmers grow fruit and vegetable as their main crops and have ownership of their businesses. The farmers interviewed are both small size farmers with max five full time workers and up to five seasonal workers. The farmers should currently supply their produce to the food processing industry. The farmers are interviewed to confirm or deny the hypothesis identified from interviewing sourcing managers and compare the experience shared by sourcing managers and farmers. Therefore, farmers are selected based on their similar portfolio to be a potential supplier of interviewed sourcing managers.

Design of interviews

In order to frame and structure the conversation but allowing the interviewee to share their experience, semi-structured interviews are planned (Smith, 2015). Interviews would be with one person and take place for 40 minutes with open-ended questions. The interview questions are attached in the appendix. The way of interviewing would be semi- formal guided interview which thee order and wording is defined during the course and follow up on interesting responses not included in the prepared list (Smith, 2015).

To answer to Sub question 1" What is the current way of working (relationship management) of processers with farmers?" the following questions are asked in the interview with sourcing managers: "What is the current way of contracting raw material suppliers?"; "Is there a difference in sourcing organic and conventional ingredients? If so what is it?"; "What would be the ideal organic supplier?"; "What would be your priority when sourcing organic ingredient?"

To answer to Sub question 2" What financial and technical or other support multinational companies can provide to farmers to convert their farm from conventional to organic?" the following questions are asked in the interview with sourcing managers: "In what way is your company supporting the farmers?"; "In What way is your company driving(pushing) the conversion?"; "Apart from supporting conversion what other ways to secure organic raw material source?"; "What other attributes are you looking for other than organic?".

To answer to Sub question 3" What platforms or ways of communication is used to facilitate the flow of information and knowledge?" the following questions are asked in the interview with sourcing managers: "With what way or platform do you connect with the farmers (face to face/ web meetings/ phone call)?".

To answer to Sub question 4"Is the input and benefit of supporting farmers to convert to organic balanced?" the following questions are asked in the interview with sourcing managers: "Does your company evaluate the practice of the farmer?"; "Do you involve the suppliers into the marketing of the products? If yes in what way?"; "Do you involve the sustainability practice into the marketing of your products? If yes in what way?"; "Except being able to secure long term exclusive contracts, what are the other added values of supporting conversion?"

To answer to Sub question" Does what the processer can offer fit the needs of farmers?" the result of interviewing the sourcing managers will be concluded in a short presentation that would be presented to the farmers. After the presentation the following questions are asked in the interview with farmers: "Does the presented solution match your current needs?"; "What would be your concern if processors offer to create a partnership to convert your farms?"; "What is the difficulty you face today?";" What other attributes can you provide other than organic?"; "Except the mentioned support on conversion to organic, what are the other support you may need?"

Analysis of data(how)

Data analysis of interview with sourcing managers would be performed with an inductive approach. Observation would first be made by reviewing the transcript of interview line by line. One transcript from one interview is viewed as one data document. Each data document is broken down into units of coding in the length of few words to one sentence. Each coding is then assigned a relevant title summarizing the unit of coding with one or two words. Data documents and titles are then listed into one table and similar titles are clustered into themes using the highlighting method highlighting similar titles with the same color. By connecting the relation between different themes identified result can be concluded (Barney Glaser, Anselm. Strauss, 2017).

Data analysis of interview with farmers would be performed with a deductive approach as the aim is to confirm the information from Danone sourcing managers on meeting the needs of organic producers (Smith, 2015). The hypothesis is generated from the result of the analysis of the data from interview with sourcing managers. The method of data analysis is the same with analysis of interview with sourcing managers. Only the themes identified would be used to reach the result of if the hypothesis proposed is correct.

3. Result

As mentioned in the previous section the coding technique is as follows, transcripts of each interview are separated in relation to the sub questions. It is found after critically reviewing the interview transcripts that while each interview question is asked in order to answer to assigned sub questions, it is reoccurring that answers from interviewee were not structured and some relevant content to a certain sub question is answered when asking another question. Therefore, there is the need to rearrange the interview transcripts in relation to the sub questions. Transcripts separated in sub questions are coded and the codes are clustered into identified themes. Themes are identified after critically reviewing each transcript and coding that the content can be categorized into nine themes for sourcing managers and five themes for farmers. The identified themes allow the answers of each interviewee to be structured and categorized in order to compare content from different interviewee. Tables 1 and 2 show the definition of each theme. Using the themes to identify key messages from each interviewee, the result is shown in tables 3 to 8 below. Transcripts of sourcing managers and farmers are attached in appendix III to VIII. Coding of each transcript is summarized in appendix IX.

Each table with exception of tables 3 and 4 answers to one or two sub questions. Tables 3 and 4 lay out the background information and starting point of discussion. The results identified in tables 3 and 4 are used to discuss the results obtained from table 5 to 8 in chapter discussion. The tables 3 to 8 lay out each theme and the dimensions(codes) assigned to each theme. Some key messages were quoted from the interviews. Each dimension represents a value related to the theme that is obtained by coding the interview transcripts. Following each table, the key message from the interviewees are laid out.

Themes are identified after coding of interviews. Table 1 shows the definition of each theme for interview with sourcing managers.

Table 1 Definition of theme for Sourcing manager transcripts

Theme	Definition
Beyond organic	Factor or description that does not relate directly to organic
Business orientation	Decisions made due to the orientation of the business
Currently happening	Observation of the current situation
Challenge	Difficulties and blocking points
Future anticipation	Description of future with uncertainty
Choosing partners	Criteria and priorities when choosing who to form a partnership or investment
Supplier relationship	Relationship with farmers or first processer
Financial support	Financial support to farmers or first processer
Technical support	Technical support for farmers or first processer

As mentioned, table 1 highlights themes and its definition. The first theme in the table is “beyond organic”. The Values of this theme capture all other aspects that are not directly related to organic but have significant importance to the business. Examples are sustainability, social welfare and regenerative agriculture. The second theme is “Business orientation”. Values of this theme captures the decisions and actions that derives from the need of the business. Examples are the decision to move to organic, decision to invest or not. The third theme is” Currently happening”. Values of this theme captures the observation of current situation both in the business and the market. Examples are the behavior of the consumers and the suppliers and the current market trend. The forth theme

is “challenge”. Values of the theme captures the difficulty or blocking points of the sub question topic. Examples include the challenge on uncertainty and limitation of volume. The fifth theme is “Future anticipation”. Values of this theme capture the assumptions that are made on the future situation. Examples include the future trend of organic and consumer decision. The sixth theme is “Choosing partners”. Values of this theme captures how the processers choose and validate the partners that are contracted. Examples include the selection process of supplier and priorities when selecting investments. The seventh theme is “Supplier relationship”. Values of this theme captures the relationship of processers with their supplier, including fresh and processed goods supplier. What the relationship brings to the business and how it is maintained. Examples include relationship with farmers and relationship with first processer. The eighth theme is “Financial support”. Values of this theme captures all the financial support offered by the processer including how the investment is decided, what is invested and who it is invested on. The ninth theme is “Technical support”. Values of this theme captures all the financial support offered by the processer including how the investment is decided, what is invested and who it is invested on. The identified themes and coding allow the following results to be collected from the interviews conducted.

Table 2 shows the definition of each theme for interview with farmers.

Table 2 Definition of themes for farmers transcript

Theme	Definition
Conception organic	The experience and opinion of organic production
farming input and output	The amount and cost of farming input and the amount and profitability of output
Support	Support provided by the government or processer
Working with the industry	Relationship and experience in working with the food industry
Future uncertainty	Assumptions toward future situations

As mentioned, table 2 highlights themes and its definition. The first theme in the table is “concept of organic”. Values of this theme captures the experience, knowledge and opinion of the farmers regarding organic farming. Examples include values of organic farming and what is experienced or heard. The second theme is “farming input and output”. Values of this theme captures the “what and how” much is the input of production, the techniques used in when farming and the profitability of the output. Example include the cost of labor, fertilizer, and price of the organic product. The third theme is “Support”. Values of this theme captures the support that is given to the farmers from EU, the government and processers. Example include the French and EU subsidies. The forth theme is “working with the industry”. Values of this theme captures the relationship establishment and maintained between the farmers and processers. Example is how the farmers are contracted and how to they meet the needs of the processer. The fifth theme is “future uncertainty”. Values of this theme captures the assumptions that are make for future situation. Example include possible competition and whether there will be return on investment.

Results are carried out in tables 3 to 8. Table 3 shows the context of the interviewee understanding the portfolio of the sourcing manager and the business background of his or her category and how this would affect the orientation to support farmers to convert to organic farming. Table 4 shows the background of the farmers including personal belief and knowledge in organic farming. results of tables 3 and 4 crucial for discussion as it clarifies the baseline for further discussion. Table 5 answers to sub question 1 showing the difference of conventional and organic in terms of business and choosing supplier. Table 6 answers to sub question 2 and 3 showing who and what is invested in and how the investment is made. Table 7 answers to subquestion4 showing how the investments are

evaluated and the added value of partnering with farmers. Table 8 answers to sub question 5 showing what the farmers think about the proposal of the processers and their difficulty to partner.

How does the farmer and processer relate to organic?

Transcript of sourcing manager is separated into sections in relation to the context of the interview and their view on organic based on their personal business environment. The transcript is coded and analyzed in Table 3. Table 3 lays out the message in themes listed in Table1, and list the dimensions related to the theme as well as important quotes.

This question outlines the background perception of each interviewee understanding what the perception is toward this topic. While it is not directly answering to any sub questions, the result of table 3 is used to discuss the results obtained in table 5 to 8. The results identified from table 3 shows the conversation with background explanation of the portfolio of sourcing managers and what is the need related to customers.

Table 3 Analysis of themes related to "How does the farmer and processer relate to organic?" Interview of sourcing manager

Themes	Dimensions (Code)	Text or quotes
Beyond Organic	Higher Question (MH) Feed the World (MH) Save the Planet (CL) Organic is not new (CL) History (MH, LU) current regulation limited (MH)	When you talk organic, there is a higher question. Is organic a trend? Or will organic stay in the future? On a long-term organic be the solution to feed the world? -MH
Business Orientation	need efficiency(MH) need innovation(MH) organic innovation (MH, CL) conventional natural(MH) processor take action(MH) convert farmers(MH) local sourcing (MH) not only organic (MH) need action now (MH) Volume and timeline (CL, LU) commitment in advance(CL) strawberry example(CL) organic practice(CL) commitment doesn't mean payment(CL) Supply chain(LU) Same with organic(LU) Essentially same(LU) Organic certification(LU) Difference in chain(LU) different case different crop(PM) need to double French portfolio(PM) eight-year commitment(PM)	For Danone now to move to organic product and we want to move a sizable amount of the business for the dairy division. -CL There can be two directions: to stick to the current organic regulation in order to boost innovation and become more innovative, the other direction is out of organic to make conventional more natural- MH The process is the same, the chain is different because this is the way to split both but by essence not supposed to different. -LU There needs to be a link to innovation, to urban farming, to vertical farming, these kind of elements, these are by the way not certifiable at the moment. -MH
Currently happening	short term consumer added value(MH) guarantee natural(MH)	say on the short term on organic there is a strong consumer added value to organic

	demand exceed offer(MH) achievable(CL) current supply sufficient(CL) relationship with processer(CL) no direct relationship with farmers(CL) currently sufficient in the market(CL) different with baby food(CL) no volume constraint(CL) quality is also secured(CL) decision from farmer spray(CL) New to position(LU) Work with processer(LU) currently in action(PM) quality first(PM) baby food standard(PM) missing French strawberry(PM) fresh material(PM) processor(PM) business wants now(PM) conversion needs time(PM) enough without local constraints(PM) local is difficult now(PM) be solved in the future(PM) first transformation work with processor(PM)	because it is more natural and organic is the biggest guarantee that your product is natural. -MH When we look at our current supply base and we look at the suppliers who are converting or are already converted, we believe we are going to make it. -CL It is clearly one of the key learnings we have for this organic business is that we have to be local. -PM But if we are sure that in 2020 or in 2021 we have the volume of 2000 tons organic apples from France then I need to invest today- PM
Challenges	Trend? (MH) Uncertain future(MH) centralized operation challenge(MH) centralized procurement(MH) convincing farmers(MH) volume commitment(MH) challenge: long-term outlook (MH, MH.) Local is difficult now(MH) 5 years conversion(MH) challenge(CL) price(CL) consumer uncertainty(CL) uncertainty of harvest(CL) constraint organic practice(CL) risk of organic (CL) challenge of organic risky(CL) Production(LU) Geographic contraint(LU) price uncertainty(PM) difficult business forecast(PM) uncertainty in conversion(PM) hard to be efficient(PM) yield decrease(PM) profitability(PM) future uncertainty(PM) organic is trend(PM)	Because the market of organic now is booming so there is a very high price but I don't know if the price will still be high in four years or it will be higher that what it is now- PM there is also a huge uncertainty for the conversion time. What would be the yield, so it is difficult to predict the efficiency of conversion because it is not an easy thing to manage- PM In many cases we want to move to local sourcing. This is a challenge for company like us where we have centralized procurement. -MH how much are we willing to invest and are the consumers, as an open topic willing to pay for it? -CL The land you can expense is also very dependent on where the factory is. You source near your factory- LU

	future uncertainty(PM)	they want local sourcing one but with conversion I can only get it in three years. So, the we have this kind of discussion that we need local sourcing now but not in three years but today we cannot accelerate more- PM
Future Anticipation	natural agriculture(CL) demand will increase(CL) organic pricing(CL) organic raw material extra cost(CL)	One thing we do believe that in the future conventional and organic are going to be at the same price. And, conventional will just disappear and organic will be the new basic- CL
Choose who to invest in	spec requirement(PM) lab test(PM) audit(PM) long but necessary(PM) recognize by network(PM)	the priority would be to check with our current supplier and say ok guys are you producing also organic vegetables- PM
Supplier relationship	processers pay for plant, get fruit back(CL) could be the way for organic(CL) Processor relationship(LU) Processor source(LU) Processer near(LU) Field needs processer near(LU) Base of demand(LU) No special process(LU)	one of our suppliers or several of them will buy the plant and pay for them and then when the plant bear fruit the give the fruit to the transformers, and that's how they get their money back. - CL The first transformation has the relationship with the field so we go to the first transformation which is clean cut frozen. And those guys are responsible to source- LU

According to interviews with four sourcing managers, two are sourcing fruit first transformation, fruit juice concentrate, IQF pieces or aseptic puree for example, for fruit preparation used in yogurt; one is sourcing cereal ingredients for baby food products; one is sourcing fresh and first transformation fruit and vegetable for baby food products. There are two kinds of raw material supplier: first transformation supplier, which are companies sourcing raw material from farms then clean, cut and freeze or perform other process to the raw material; fresh produce suppliers who are farmers who own orchards and farms. The scope of fruits for dairy is global and the scope of baby food ingredient is Europe.

According to the analysis on Table3, the business orientation to produce organic lines is confirmed. The limitation of organic certification needing to link more features beyond organic is expressed. For sourcing managers, organic is not different than conventional in terms of process of contracting, however, the relationship management of supply chain is handled differently. Concrete opinion of the sourcing managers is that more naturality is needed.

Currently, there is a strong consumer added value on organic products. Despite the uncertainty of the future the business needs to act now. Sourcing managers in the dairy division are confident that with the current supply base the future need can be met. on the other hand, sourcing managers for baby food mentioned the strong link to local for their portfolio.

Challenges mentioned include uncertainty of organic price in a few years; uncertainty of the efficiency of conversion; centralized procurement of the business, consumer willingness to invest in

organic; the limitation of organic farmland due to presence of processer and the immediate business need and time needed for conversion.

Transcript of interview with farmers related to the context of the interview and their view on organic related to their personal business environment is collected and coded. Table 4 lays out the message in themes listed in table2, and list the dimensions related to the theme as well as important quotes.

Table 4 Analysis of themes related to "How does the farmer and processer relate to organic?" Interview of farmer

Themes	Dimensions (Code)	Text or quotes
Conception organic	Validity questionable (LF, PF) Cropping way(LF) Real sprit(LF) Feed the world? (LF) Not all turn organic(LF) Complicated(LF) Turned down(PF) Good marketing(PF) Not less environmental impact(PF) Financial is only reason(PF)	To be organic you need to have the spirit of organic farming you cannot do it for money.-LF We believe so far it is almost impossible that everybody will turn organic-LF Organic is a good marketing. It's a good way of differentiating your product.-PF
farming input and output	No yield(LF, PF) Hard to increase market price(LF) Expensive to produce(LF) expensive market(LF) no extra attribute(LF) price constraint(LF) direct sale(LF) sell end fresh and local(LF) higher margin(LF) Land less good(PF) Yield differs with crop(PF) Also cattle farm(PF) Small scale(PF) How much seed(PF) Shared with cattle(PF) Farm techniques(PF) Not worth it(PF) Product differentiation(PF) Difficult differentiation in agriculture(PF) Difference easily explained(PF) Hard to explain(PF)	No yield-LF The best way is to get rid of everybody. This means the professors the industrial people, and just sell directly- LF Since the French government has been support organic a lot of people are starting to convert and organic fertilizer is quite high price at the moment. For organic the farming technique is not necessary so healthy for the soil. Plowing for example in a few years would kill a lot of the worms and lives in the soil. -PF The reason why organic is so popular is because it is so easy to explain whereas the other farming technique that not necessary is less environmental healthy than organic but is harder to explain to the customers.
Support	Subsidies(PF)	at the moment we are getting a lot of subsidies from the EU and France to become organic- PF
Working with the industry	Industry don't like(LF) Easier for industry(LF) Simple process(LF) Quality guarantee(LF) Easier process(LF)	Some industry does not like it at all organic. They push you to do treatments so on their side they don't have to do anything. -LF

	Prevents problems(LF) Security for volume(LF) More product in market(LF) willingness promotion(LF) Partner organization Owned by farmer(LF)	If there is too much product on the market then the price is low but they can buy from this price. But if there nothing in the market in the market then it is hard to secure volume. - LF
Future uncertainty	international trade(LF) different regulation(LF) uneven competition(LF) Is it wort hit? (PF) Price will be higher(PF)	Then there will be organic in France, organic in Spain then maybe the rules will be different, then maybe you are going to have high competition with the other countries-LF financial point of view so if it makes sense financially to do it and if it is worth the effort-PF

According to the data laid out in Table 4, farmers believe that organic will not be implemented by all farmers. Strong commitment to the organic values is needed to commit to organic farming. In terms of farming input and output, decrease of yield is mentioned as well as the increase of production cost. Mentioned factors contributing to the increase of production cost include higher price of fertilizer, pesticides and seeds. Farming technique of organic is questioned by farmers to be environmental healthy. Farmers also mentioned that the reason organic is widely popular is due to its simplicity for the consumers to understand.

In terms of support there are subsidies provided by the EU and government. According to the farmers, the subsidy is sufficient for conversion.

In terms of the current way of working with the industry, one farmer mentioned that in his experience the customers that he works with do not want organic products as their raw material would be inconsistent in quality and would require more steps in processing.

The possibility of competition with imported organic product is mentioned. There is concern on the consistence of organic regulation from country to country making the competition unbalanced.

Sub quesition1: What is the current way of working (relationship management) of large food processors with farmers?

Table 5 shows the analysis of transcript sourcing manager related to sub question 1. Sourcing managers elaborate difference of organic in terms of business operation and choosing partners Table 5 lays out the message in themes listed in table1 and list the dimensions related to the theme as well as important quotes.

Table 5 Analysis of themes related to Sub quesition1

Themes	Dimensions (Code)	Text or quotes
Business Orientation	baby food(MH) organic on top(MH) need action now(LU) Different traceability (PM) Sourcing baby food(PM) Difference in consumer(PM) Baby food restriction(PM)	The trend is to move to organic but conventional still stays-MH And this is clearly different as the way we work today with conventional because with conventional our priority is quality and secondly competitivity. But without any country

	Organic requires local(PM) Quality first(PM) Local changes strategy(PM)	constraint meaning the most important is the quality and price. -PM
Currently happening	same as current(MH) different contract term(MH) contract during and after conversion(MH) long term contract(MH) conversion partnership(MH) upfront pricing(MH) secure volume(MH) secure quality(MH) secure pricing(MH) direct contract fresh(MH) shouldn't have different price(LU) reason of different price(LU) difference in yield(LU) example organic more yield(LU) organic more yield(LU) example organic more yield(LU) sufficient supply(LU) more than organic(LU) there are enough suppliers(LU) price is higher(LU) constraints links to extra attribute(LU) no constraint today(LU)	In conventional you can survive and find a good price and good quality from a year to year type of contract and scheme. -MH The difference is pronominally the term of the contract. The conversion process of the organic product will only be available in 2-4 years' time. Meaning we need to make long term contracts with our suppliers up to 10 years.- MH So, you need to make sure you have your partnership in place which means securing the volume, quality, a good price of the material to allow the full coverage of the cost of the farmer and make sure we are paying the farmers a good price to have a proper living- MH For the biggest producer of cane sugar in north America, organic sugar cane had more yield than conventional because when you implement organic you have a better eco system to produce so it's the management. -LU
Challenges	conventional not the case(MH) conventional simple(MH) volume secure(MH) first year(CL) business uncertainty(CL) uncertainty(LU) organic yield/farming practice(LU) future uncertainty(LU) uncertainty more than organic(LU) Time constraint(PM) Limited organic volume(PM) Huge price difference(PM) Additional constraints(PM) Conventional without local constraint(PM) Geographic constraint(PM) Local leads to mono sourcing(PM) Challenge is higher risk(PM) Strong competition(PM) Unbalanced market(PM) Limited volume and high price(PM) Future uncertainty(PM) less negotiation rooms(MH) less supplier competition(MH)	The thing is that the business is not committed yet and the discussion are not completely closed with suppliers for the simple reason that the business doesn't know what they want to do so I don't know-CL There is clearly an unbalance on the market and it is hard to find the volume and it is very very hard I would say almost impossible to get a competitive price. -PM what is tough is to maintain the same level of risk because we are moving from three suppliers to one supplier which means that for organic most of our local sourcing material are mono sourced meaning only one supplier so which means that there is clearly a risk for the service level because there is no backup solution supplier. - PAM In the end you don't have that much room to put farmers and processers in to competition because everything is based on the agreement made several years ago- MH

Future Anticipation	food regulation merge(MH) future organic=baby food(MH) possible portfolio cannibalization(MH) future anticipation: volume growth(MH) individual in conversion farm for future(CL) maybe longer commitment(CL) assumption organic agriculture(LU) investment on organic(LU) organic can bet he normal way(LU) future need maybe(LU)	So, what might happen in the future, is that the baby food regulation and organic regulation/ certification will be coming together meaning that if you source organic it will automatically be baby food. - MH So, all in all organic should have the same price this is the way of working of organic and potentially this will be the normal way- LU
Choose who to invest in	internal motivation from farmer(MH) processor relationship: frozen(MH) same priority(MH) price/quality(MH) same criteria(MH) current supplier first (MH, PM) difficult(MH) potential supplier second(MH) longer process(MH) check next year availability(MH) conversion last(MH) maize example(MH) quality depends on the specification(CL) search for suppliers(CL) quality personnel(CL) geographic search on production(CL) confirm processor(CL) shortlist(CL) audit(CL) timing(CL) pricing(CL) quality terms(CL) payment terms and quality terms(CL) pricing(CL) volume allocation(CL) test run(CL) only audit processer(CL) farmer relationship audited(CL) organic sourcing(LU) Known suppliers(PM) Already established standards(PM) Preference to work with known partners(PM) Long term commitment(PM) Support and commitment requirement(PM) Non- negotiable(PM) Variety in size(PM) Big and small for fruit(PM) Mostly big for veg(PM)	So there need to be an internal motivation from the farmer to convert and internal motivation to the concept of organic. I would say the strategy for conventional and organic baby food would be to work with the same suppliers. - PM And in the factory one of the question we ask is how they audit their farmers so we look at the reports on how they audit their farmers. So, we are not ignoring the far and we go and visit but we do not audit. -CL If you want to be local, organic and you want to have the volume you must commit to a long-term contract. -PM Especially we used to work with farmers and now they say I will give you organic apples only with two conditions, you will support my conversion period and then you'll sign 3-6-year contract with me. -PM

Supplier relationship	partnership crucial(MH) partnership volume secure (MH, CL) processer drive conversion(MH) access farmer via processor (MH, CL) organic needs partnership (MH, LU) secure availability(MH) pricing methodology(MH) feature of fruit(CL) same sourcing(CL) limited volume (CL, PM) sourced inhouse: blueberry(CL) no sourcing constraint(CL) first organic product line(CL) with current supplier (CL, PM) no upfront commitment (CL, MH) need more volume(CL) less volume no constraint(CL) current is enough(CL) Difference in specification(PM) Specification carefully defined(PM) Contract is same(PM)	processed fruit and veg, frozen and puree for example. Here we want to partnership with processors who are supporting and converting farmers. -MH price and quality for sure is not less important than availability but to secure availability it requires partnership and in fact also in order to secure a good price in organic it requires a specific price methodology to secure a good price so partnership longer term- MH When we are going to start having the conversation is when we start to buy the large quantity. -CL From the contract point of view, it is exactly the same with the conventional we are booking, negotiating volume and price the difference is we are buying very limited volume than conventional because it is a new business- PM

The sourcing manager of fruit for dairy work only with first transformation suppliers instead of directly with farmers. Sourcing managers of fruit for dairy products maintain relationship with farmers by auditing first transformation suppliers on relationship management with their farmer suppliers. There is no regular direct touch point with farmers with the dairy ingredient sourcing managers. Sourcing managers of baby food products have both direct farmer suppliers supplying fresh products and first transformation suppliers. Farmer suppliers range from medium sized orchards to large sized farms. First transformation suppliers are strategic partners each representing a big portion of the portfolio.

The differences mentioned in table 5 in terms of business is that conventional can be sourced without country constraint and organic cannot. This is especially mentioned by baby food ingredient sourcing managers. The contract terms are different with the contract time. While conventional tend to be year to year contract, organic contract can be up to ten years. Also, the need for long term partnership is mentioned to secure competitive price. The local constraint of organic also leads to several challenges include risk of mono-sourcing. Other challenges mentioned include the uncertainty of the future, making the sourcing manager unable to make any commitment to the suppliers; the high price of organic raw material and the limitation to put suppliers in competition.

In terms of choosing suppliers, the preference to partner with same suppliers for conventional and organic, in other words historical partners, is mentioned. Also mentioned is the need of internal motivation towards organic. In many cases the raw material is sourced in frozen or pureed. In this case the first processer is the main contact. The relationship management with the farmers is the first processer is audited, but the farmers are not directly contacted.

Need of long-term partnership is mentioned several times by both farmers and sourcing managers. Topic linked to long term partnership include the pricing methodology and security of future volume.

Sub question 2 and 3, "What financial and technical or other support multinational companies can provide to farmers to convert their farm from conventional to organic and what platforms or ways of communication is used to facilitate the flow of information and knowledge?"

Transcript of sourcing manager related to sub question 2 and 3 is collected and coded. Sourcing managers elaborate who and what they are investing in as well as how the investments are decided and done. Table 6 lays out the message in themes listed in table 1 and list the dimensions related to the theme as well as important quotes.

Table 6 Analysis of themes related to Sub question 2,3

Themes	Dimensions (Code)	Text or quotes
Beyond Organic	more than organic(CL) ensure sustainability(CL) social security(CL) different investment than organic(CL) insurance weather(CL) investment beyond organic(CL) people investment(CL) sustainability investments(CL)	It is more than organic but also sustainability. We want to support farmers and we want to make sure that they have a sustainable way of growing-CL we will invest on sustainable 360 degrees sustainable practices making sure that the pickers are 100% registered and legal they have social security they have insurance-CL
Business Orientation	region specific (MH, PM) different final consumer(CL) more traceability with baby food(CL) different product orientation(CL) discussion started(LU) focus of organic is Europe(LU) Main volume is apple(PM) Need to invest today (PM, LU) Approach: convert alone(PM) No fixed cost investment(PM) No direct investments(PM) For small farmers(PM) fresh is big part(PM) planning phase(PM)	Its more relates to the region you buy from than the type of farmer. -MH The French and Italy products want to be able to claim sourced in France or sourced in Italy. This is clearly changing our sourcing strategy. -PM But if we are sure that in 2020 or in 2021 we have the volume of 2000 tons organic apples from France then I need to invest today in 2018 on farms to push our current conventional farmers- PM today for example for cereals we have organic maize that we did not buy we are checking with our current approved supplier if they would have availability for the next crop. -MH
Currently happening	example- German farmers(MH) example- French farmers(MH) means of communication(CL) Europe less social risk(CL) easier to source fruit(CL) enough ways to meet needs(LU) more volume(LU) less suppliers(LU) Limited French apple(PM) Three-year conversion(PM)	In Germany they believe in it and they are sure they will always be able to sell their produce in three years' time. In France for example it is more difficult to convert farmers meaning that it requires higher investments to convince them to move to organic. - MH If I have a small volume today then why should I work directly with the farmers? But as soon as it starts to grow bigger I move my sourcing direction, my sourcing channel from broker to something else. - LU

Challenges	organic yield is lower (MH, PM,) organic yield is variable(MH) conventional is more stable(MH) convincing farmers (MH, PM) remain the same way(MH) invest in labor(MH) region specific difficulty (MH, PM) conventional is not as strict(CL) yield depends on whether(CL) yield difference not proven (CL, LU) consumer willingness to pay(CL) processors have more clients(LU) different requirements each client(LU) challenge with processers(LU) different interest with other clients(LU) examples differences(LU) unavoidable challenge(LU) Less yield(PM) Sell with conventional price(PM) High farming cost(PM) Future uncertainty(PM) Afraid to lose money(PM) Financial constraint(PM)	overall organic yield is lower than conventional. Variability the crop is more than conventional meaning that it is less reliably one year you could have 80% and another year you have 100%. Depending on the way they are behaving, the way they rule their company and the way they treat their crops they prefer to keep on doing what they are doing than move on to something else which is more labor intensive. -MH Most of the guys they say I'm afraid to move to organic because I will lose a lot of money for the coming three years and I'm not sure that after three years I will be competitive enough-PM it is not proven that the yield is different with organic verses conventional, and I'm not sure consumer is willing to pay for organic. They want it but I'm not sure they want to pay for it. - CL Processer supply many customers. What we are requiring them in terms of quality and organic and sustainability, is different than their other clients. Sometimes we request more sometimes we are requesting less but if the facility is there we need to pay for it. Sometimes we have opposite interest than a different client. -LU
Choose who to invest in	Known farmer first (PM) Good relationship(PM) trust(PM) new farmers second(PM) young farmers(PM)	the priority is to convert and support our historic farmers because these are farmers who we have worked with 20-25 years so we have a good relationship and level of trust. -PM
Supplier relationship	processer have direct relationship limited(LU) channel not yet defined(LU) relationship is needed(LU) no regular touch points(LU) Long contract(PM) With support farmers con move(PM)	The first transformation guys they have financial support, technical support and agricultural support related to the farmers they are sourcing because in that way they can guarantee a good raw material and traceability, financing etc.- LU
Technical support	gain efficiency (MH, CL, PM) agricultural innovation(MH) soil health(CL) example improve practice(CL) improve yield leads to(CL) programs technical assistance(LU) quality(LU) organic is farming practice(LU) Not only financial also technical(PM)	pickers for example that when the pesticides are sprayed they have protection equipment and they need to wear it. Sometimes the farm has it but the people are not using it- CL The expert will come to assess how the farm is managed and the mindset of the farmer to make technical and economical diagnosis. After this could be collective training then for the individual training. There

	Impact of different practice(PM) professional organizations(PM) expert asses the farm(PM) technical and financial(PM) expert define action(PM) collective training(PM) understand best practice(PM) individual consultant(PM) technical sheet(PM)	could be a technical sheet teach them the treatments for let's say the organic apples. - PM So, in that case I would say we support financially the farmers and our supplier will support technically the farmers- PM
Financial support	higher cost of organic (MH, PM) paid in conventional (MH, PM) willing to invest(MH) profitability (MH, PM) budget(CL) co funder of project(CL) improve financial(CL) Apple example(PM) Compensate lost yield(PM) Low rate loan(PM) Crowd funding platform(PM)	In general, we say the cost of organic is higher even they don't have to pay for pesticides in general but there is more labor cost. These cost needs to be made but they are not paid on an organic level. This is the topic that needs to be discussed and we are willing to invest in those cases where these topics are related. - MH we propose them to support partially so not to pay already organic price for conventional apple we will pay the middle of organic and conventional price. -PM (For fix cost investment) we can propose a lower rate loan like zero rate loan or use Danone as a caution for the farmers. I don't think we would invest in directly the farms. - PM

According to the data laid out in Table 6, sourcing manager for dairy mentioned the orientation to invest also in sustainability, social welfare and other technologies of farming.

Some prerequisites mentioned in the interview is the search with current suppliers. Only when it is confirmed that with the current supplier there is no availability on product or farmland, the investments be made. Also, there needs to be a clear need on the volume. Also, the priority would be to work with current contracted farmers.

The investments are linked to the location if the farmer than the type of crop. Examples were given by the sourcing manager of baby food on the difference faced when working with farmers of different origin. The strategy of sourcing is influenced by the need of local sourcing. Also mentioned is the conversion time that is needed.

The challenge mentioned in table 6 points to convince farmers to convert include the variability of yield, the uncertainty of profitability and the uncertainty of consumers. Also converting to organic farming is a complete change of practice for a long period for the farmers which poses a difficulty for the sourcing manager to convince the farmers as well. In relation to first processers, a challenge mentioned is that the business orientation is to represent more than 20% of turnover of each supplier. Challenge occur when there are different needs than the other customers of our suppliers.

The need of financial and technical support is mentioned. Contributing factors include higher cost of organic pesticides and fertilizers; more intensive labor need; cost for cleaning; and investments on fixed cost. Financial support mentioned by the sourcing managers include purchasing the in conversion produce with higher price than market price, contract schemes and pricing methodology

that ensure sustainable profitability of the farmers, loan programs for investments for fixed cost and support on insurance for unexpected weather conditions. Crowd funding platforms are also mentioned as a new way of investing in fixed costs for conversion project of the farmers

Technical support includes individual consulting, collective consulting, technical sheet and best practice workshops. Depending on different background conditions of the farm, support is given including social welfare and education on sustainability. The way of connecting with the farmers include face to face meetings, farm visits, farmer supplier audits for first transformation suppliers. Also mentioned is a dedicated personnel located in the production area to drive projects to invest in farming practice improvement projects.

One sourcing manager shared experience on support such as social welfare of all labor force on the farm and insurance support. It was mentioned that the priority for the category lies more in social welfare than farming practice due to the type of farm and the geographic location.

Sub quesition4: Is the input and benefit of supporting farmers to convert to organic balanced?

Transcript of sourcing manager related to sub question 4 is collected and coded. Sourcing managers elaborate how the investments are evaluated and the added value of partnering with farmers. Table 7 lays out the message in themes listed in table1 and list the dimensions related to the theme as well as important quotes.

Table 7 Analysis of themes related to Sub question 4

Themes	Dimensions (Code)	Text or quotes
Beyond Organic	investment for future(CL)	It's partly to answer to the business need now but it's also to be ready because this is coming no matter if you are ready or not. If your business is not set up your supply chain is not set up you will just lose all your business. It's an investment is really for the future. -CL
Business Orientation	volume need(MH) buy and sell(MH) trading position(MH) need to act now(MH) possibility to trade organic(MH) agronomist follow-up(MH) performance evaluated at harvest(MH) not near future(CL) ready before(CL) ready the business(CL) commitment from CEO(CL) business orientation(CL) sustainability of resources(CL) long term vision(CL) company image(CL) Branding(CL) Support from shareholder(CL) Company image(CL) French sourcing(PM)	Agronomist specialized in the specific crops, they are following up with the farmers making sure they are making the right action plans etc. and then the real performance will be evaluated at the first harvest. -MH What we want is also propose to the farmers to adapt the contract price to the production cost. Then we will decide together what is the margin we need to implement to implement with the farmers also for us to invest again. -PM We have a duo project so it's not just business it's also social, environmental and it's not only to make profit we are able to do it sustainably meaning that we can do it on the long term. - CL If you don't go to organic, regenerative agriculture, sustainable practice regardless economic environment social at one point you just will not have it anymore. And if you don't have fruits then you cannot put fruits

	brand image(PM) pricing according to(PM) mutual margin(PM) small part of each business(PM) pay contract margin(PM)	in the yogurt and we cannot sell yogurt anymore. So, if don't answer to the consumer need the will not buy and if you do not have fruits you cannot sell. So, at one point the equation becomes simple. - CL
Currently happening	difference fully organic/ partly organic(MH) organic cleaning needed(MH) more volume less price(MH) example smart phone(CL) limit the investment(CL) French sourcing more critical(PM) organic now is profitable(PM) apple example(PM) Partnership long-term needed(PM)	Partly organic processors there is an intensive cleaning prosses and documentation process to ensure organic grade. This means the lower the volume we are buying the higher the price of cleaning. - MH So today to be organic for the farmers it is very profitable. Either we pay the market price and it might mean a huge profit for them but maybe in three to five years the volume will be more available in that case they can lose money. - PM
Challenges	define production cost front (PM) conventional more choice(MH)	What we need to identify is what is the cost of organic and, we need to make this assessment on a three to five-year basis. Because for every year you can have difference. -PM
Future Anticipation	organic will be the norm(CL) organic and conventional same price(CL)	One thing we do believe that in the future conventional and organic are going to be at the same price. And, conventional will just disappear and organic will be the new basic. -CL
Supplier relationship	Seeding(MH) what to seed(MH) how much to seed(MH)? seeding control (MH, CL) rotation(MH) events on the farm(PM) trendy in France(PM) production cost(PM) define production cost front(PM) average 3-5 years(PM) adaptable contract price(PM) sustainable revenue (PM, CL) 50/50(PM) Stable pricing(PM) Productivity clause(PM)	You can decide with your supplier what to seed and how much to seed. Meaning you can control the volume every year as long as you have the land to grow. -MH One thing also very important for the CBU is that the possibility to work with the farmers to organize some sort of an event with the farmers. This is particularly linked to the CBU in France because this is very trendy now. At the end what is important for the CBU is to have a better brand image to have the image to be a brand that is supporting farmers. - PM Productivity clause in the contract to say that today we will work with you to have better productivity to have better practice to have more competitive production cost and for us a more competitive price. -PM

According to the data in Table 7, to assess the performance of suppliers the processers rely on agronomist and expert to follow up with the practices of the farmers. Full evaluation of the conversion project can only be done after the conversion period.

Sourcing managers also emphasized that the prerequisites to invest in conversion are critically evaluated. It is made sure that there is no availability on the current market or the coming years before the investments are made.

The following methods are proposed: adaptable contract price and mutually agreed margin. Sourcing managers also mentioned the possibility to trade organic raw materials on the market if there is a surplus in future years. To avoid extra cost, sourcing managers mentioned the need to order larger volume at once to avoid the high cost of cleaning between production.

Additional added value is also mentioned. In terms of productivity, sourcing managers proposed to add a productivity clause in the contract to capture future savings on productivity. In terms of marketing, events can be held with the farmers to connect with consumers. Also mentioned is the image of the brand and company and the need to preserve resources in order to maintain a sustainable practice.

Sub quesition5: Does what the processer can offer fit the needs of farmers?

The transcript of farmer related to sub question 5 is collected and coded. Sourcing managers elaborate how the investments are evaluated and the added value of partnering with farmers. Table 8 lays out the message in themes listed in table2 and list the dimensions related to the theme as well as important quotes.

Table 8 Analysis of themes related to Sub question 5

Themes	Dimensions (Code)	Text or quotes
Conception organic	big change needed(LF) a lot of change(LF) new(LF) can't take risk(LF) need healthy financial(LF) vulnerable to risk(LF) would not change(LF) Don't believe it(PF) Organic is a trend(PF) Not enough resource(PF) Farming technique not good for soil(PF) No ethical need(PF) Seen the difference(PF)	You must think about it completely because after one year on the same place you need to plant different plant so you need to change completely your produce. -LF You need a farm that is financially healthy because you may not be paid back. The farmers are more vulnerable to risk and need security to avoid the risk of become in debt. -LF All in all, we don't feel the ethical need to use organic. Our farming techniques are already optimized. -PF Organic has become a trend-PF
farming input and output	less yield(LF) more labor (LF, PF) not profitable(LF) in debt(LF) still no yield (LF, PF) difficult weed control (LF, PF) expensive pesticide (LF, PF) not enough labor (LF, PF) Less quality(PF) Loose money(PF) More impurity(PF) High demand of fertilizer(PF) Already little spray(PF) Not wort hit to spray(PF)	We don't have the resource to handle 300 hectors in organic. PF We are not going to be profitable from the beginning and we are going to lose money the problem is that a lot of farms today they have a lot of debt. -LF Spraying cost money. So, it's not worth it for me to spray a lot in the beginning. During conversion you would get subsidies from the government but after that it could be difficult. -PF

	Already optimized(PF) Increase cost lost productivity(PF) During is ok after is problem(PF)	
Support	long-term minimal price(LF) training investment in machine(LF) need a lot of support(LF) Only for the subsidies(PF) Only need financial support(PF)	I would need to have at least minimum price to make sure there is profit for long term at least five years then it would be more training and need investment in machineries or help finance for the equipment needed related to organic farming. -LF a lot of subsidies from the EU and France- PF We don't really need technical support and we need the financial incentive to do it-PF
Working with the industry	Unable to fulfill contract(PF) No believe in contract(PF) Bad experience with contract(PF)	We have very bad experience with contracts because we once signed a contract just before the worst harvest year ever and could not meet the volumes. -PF

According to the data presented in Table 8, the farmers expressed that moving to organic means a big and complete change in the way they are working today and have been for generations. The prerequisite is to have a financially healthy farm to start with to avoid the risk of being in debt. One farmer believes that organic is just a trend and the farming techniques used today are already optimized.

In terms of resources the lack of labor to manage the weeds of the farm and lost in yield is mentioned as well as the profitability and balance of income and debt. One farmer believes that with the practice today spraying is kept to a minimum but necessary. In terms of finance, one farmer mentioned that the subsidies are enough to cover the cost of conversion however when the farm is fully converted it would be difficult to make profit.

When asked about how processers can provide support one farmer mentioned to have a minimum price and contract term of at least five years, training and investments in machinery while the other expressed only financial support is needed.

In terms of willing ness to work with the industry one farmer had very negative experience with contract and therefore is reluctant to be involved in any contract scheme. The other interviewee expressed willingness to be involved in the marketing of the product as long as it can contribute to the growth of the sales of the product.

4. Discussion of Results

This section discusses the key findings of this research. The goal of this research is to connect the experience of farmers and processers to identify the main challenges of producers to adopt organic practices as well as processors to secure organic raw material and maintain supplier relationship. In order get the full picture from each interviewee, the perception of organic agriculture and the business orientation to organic products is discussed. One of the key discussion point is yield of organic farm land as it is the main concern of the farmers, also there are some different opinion on this topic between the farmers and processers. Also, the relationship of farmers and process regarding to conventional and organic products is also compared. This relates to the change that is needed in order to secure the organic business. Finally, the investments and return on investments to support farmers to convert their farm is discussed. This relates to the what and how can the processers invest also are these investments profitable in the end and how can the business ensure profitability.

In order to answer to the main question of this research, "How can large food processers support farmers to convert to organic farming?", the following sub questions are asked.
Sub quesition1: What is the current way of working (relationship management) of large food processors with farmers?"
Sub quesition2: What financial and technical or other support multinational companies can provide to farmers to convert their farm from conventional to organic?
Sub quesition3: What platforms or ways of communication is used to facilitate the flow of information and knowledge?
Sub quesition4: Is the input and benefit of supporting farmers to convert to organic balanced?
Sub quesition5: Does what the processer can offer fit the needs of farmers?
The result of each sub question obtained from the interviews are presented in chapter result. The following sections discuss the findings.

Perception of organic agriculture

The following section discuss the background information and perception of organic agriculture. This relates to this report on discussing the personal and business motivation to convert farmland to organic and how the sourcing managers can approach to the topic and relate to the difficulties the farmers face.

There is a higher question of "can organic feed the world?". With studies showing that the yield of organic agriculture is less than conventional (Niggli, 2015), this is a question that is asked by both processers and farmers. While there is an uncertainty on the market trend of organic, for the processor, what is certain is that the agriculture practice is going to move to more natural. Therefore, there is a clear need for the business to invest in agriculture practice. Whether it is pushing innovation on organic agriculture or having conventional agriculture but in a more natural way. Study shows that the consumers buy organic product for its health, taste, environmental friendliness and ethical aspects such as animal welfare (Aertsens, 2009). While some of these attributes are not certifiable in the organic certification today, processers keep it in mind to market and invest in all these aspects other than just focusing on the certification criteria. Sourcing managers generally believe that in the future the conventional products will need to be more natural and eventually, with innovation on agriculture technology, all produce will be in organic. However, the farmers do not share this view as they experience different processers asking to treat their crops so that it

arrives the processing plant with stable quality and quantity. This relates to the motivation of the farmers and processers to start the conversation on investing and converting farms. According to the result of the interviews, the motivation is clearer on the side of the processers than the farmers. Resulting in the processors having to make the effort to convince the farmers and reassure them in the process in order to motivate the farmers to convert.

Yield of organic production

The following section discuss the yield of organic production. This topic relates to sub questions 2 and 3, the financial and technical investments that is needed from the processers to convert farm land, and sub question 5, profitability on the long term.

The decrease of yield is a topic mentioned by all interviewees. Studies show that there is a yield gap of 20%~25% between conventional and organic farms in average of all crops (Niggli, 2015). The reason of the decrease in yield is the lack of soil fertility without the use of chemical fertilizers and loss of produce due to pest and weather conditions (Niggli, 2015). For the processers, generally 20% loss of yield is acknowledged. However, the attitude towards yield is optimistic. One sourcing manager gave an example of sugar cane producers gaining more yield after converting to organic; one sourcing manager expressed that the yield shouldn't be different but organic produce is more vulnerable to weather conditions. Sourcing manager of baby food specified the difficulty he experienced crop by crop with apple being the main focus and most vulnerable. His experience was that there could be a loss of 50% of the produce without proper management of the farm, but with implementing best practices the loss can be reduced to less than 20%. All in all, processers show confidence that the decrease of yield is manageable for the business to be profitable. On the other hand, the farmers show a strong discomfort in change management of the farm and loss on yield. Both farmers interviewed expect 50% loss of yield and show no confidence of improving the yield. The specific farming management required (Ponisio, 2015) with organic farming is not manageable with their current resources and farmers are less confident than the process to tackle these issues. Yield of organic production is a key point of investment as it is one of the main factors of profitability. Innovations on organic farming needs to be in place in order to close the gap on production yield. This implies that to maintain sustainable profit on both processors' and producers' side tackling the gap yield is a critical challenge, meaning that it is the role of the processers to facilitate innovation on farming techniques and invest in research and testing of new agriculture practices.

Business orientation toward organic

The following section discuss results that are related to sub question 1. This topic relates to this report with discussing the business background of distinct categories and finished productions and how this would reflect to the decision on how to make investments.

When discussing organic production and organic supply, it is needed to discuss the situation case by case as different farms of different geographic location, choice of produce and access to resources all impact the production and farming practice (Dunsinea, 2002). For sourcing managers, the portfolio of raw material sourced as well as the brand and consumer of the finished product all contribute to the different orientation towards supplier and. One clear change on the purchasing strategy is to shift from competitive to cooperative (Park, 2010). For processers this is a risk as well as constraint for negotiation, however all of the sourcing managers expressed that this is a prerequisite to partner with organic producers. The dairy business and baby food business of the case company have different business orientations when supporting farmers. This is clearly linked to that difference of

consumer of baby food who is a specific group highly sensitive for quality and food safety and consumer of dairy products who are more generic and sensitive to the price of the product.

For the dairy business of the case company and many large-scale food processers, sourcing of raw material is on a global scale and therefore less constrained. Sourcing managers have no problem fulfilling the organic needs today with current suppliers and are confident to be able to meet the business needs in the future as well with the already in conversion farms in the market. Therefore, investment in conversion is not a priority of the business. Only in the future when there is a significant increase of volume will the business start acting. However, there is still strong motivation to invest in farmers. Due to the global scale of sourcing, some source of raw material could have higher social risk or more be more vulnerable to weather conditions. The investment of the company therefore focusses more on the social welfare of workers, innovation on agriculture practice and maintaining the farms financially healthy.

For the food processers with specific raw material needs, baby food raw materials for example, conventional baby food raw material is already of specific regulation. The scope of sourcing is restricted instead of globally. In the case of the case company, materials are sourced in Europe, also the need is highly linked to local need, resulting in geographic constraint when sourcing raw material. Both sourcing managers from baby food division confirmed that the geographic constraint is the main reason that for the baby food business there is a strong interest in converting the farmers.

Difference in orientation to support conversion can be observed between the different scope of sourcing. When sourcing raw material on a global scale with no special constraint, the lack of offer is less critical in the current situation. Therefore, the orientation of investment is more towards social welfare in places where there is higher risk. When sourcing raw material on the regional scale with specific needs, local or specific food regulations for example, the offer is much less than demand. Therefore, there is the orientation to support the farmers to convert to organic farming.

Relationship of processers with suppliers

The topic discussed in the following section relates to sub question1 asked in this report. It relates to how the processers maintain relationship include how partners are chosen, contracted and what is the difference between different kind of suppliers.

There are several factors influencing the relationship between processer and farmer. Generally, price and the ability to deliver are regarded as the most important criteria (Batt, Rexha, 1999). While the sourcing managers regard the three criteria mentioned as the three pillars when selecting suppliers, in terms of organic raw material special focus is put on the availability. In order to secure availability and cooperation action long term relationship with few suppliers needs to be formed. This is also reflected the literature (Boothby, 2012). In the case of the case company, specific fruits dominate a substantial portion of the portfolio. Strawberry farmers for example is in close relationship with the sourcing manager. This relationship allowed projects to be carried out to adopt sustainable practices and facilitate the sustainability of supply chain (Ronchi, S., Luzzini, D., & Spina, G., 2007). When choosing a long-term partner, it is in most cases the priority to work with suppliers that have a long history working with the processers. The trust and relationship established thought historical collaboration hugely contribute to the incentive of partnering again to launch new product lines. This reflects the research of (Park, 2010) to form a strategic relationship and cooperate to one another to achieve a long-term goal.

The raw materials can be sourced directly from farms or can be sourced from first transformation processers. First transformation means processors who wash, cut, puree or freeze the raw material. In terms of sourcing directly from farmers, apple and pear for example, there are more medium and small-scale orchards supplying directly to the factories. With first transformation there is less suppliers supplying a range of first transformation products. This reflects different relationship between farmer-supplier and industry supplier (Boothby, 2012). With first transformation the partnership for conventional is more strategic than that of farmer-suppliers. This would change when the sourcing moves to organic as for farmer-suppliers some materials will be single sourced, resulting in a more strategic partnership rather than only focusing on price and quality of the raw material. When the material is sourced from first transformation there is less link to the farmers. Processor would rely on the first transformation supplier to maintain relationship with farmers and while the processors audit first transformation on relationship management and farm practices, the connection is not regular and limited. When investment is done it is mostly done partnering with first transformation partners and not directly with the farmers. The different way of working with farmers and first transformation suppliers influence the way of investment when converting. The difference in relationship management when working with different kind of partner needs to be identified to understand the full picture of the business.

Supporting the farmers

The following section relates to the financial, technical and other supports provided by the processers to the farmers. This topic is related to sub questions 2 and 3 asked in this research.

From the interviews it is concluded that the main challenge from the farmers to convert to organic farming is the decrease of yield; increase of investment on fixed cost; increase of labor cost; and uncertainty of the trend of the market. This is also reflected in the study of (Reaves, 2014).
In terms of investments of fixed cost, (Ponisio, 2015) stated that a key challenge is to practice specific farming techniques or treatments to each crop. This is especially complicated as rotation is a requirement of organic farming (EU, 2007), resulting in specific investment with each crop produced. In terms of labor cost, mentioned by both farmers is the labor cost needed to remove weed. It is not possible for the farmers to remove the weed manually with the current labor resource, therefore innovation is needed for the control of weed growth. In terms of uncertainty of future market trend, the concern stems from farmers having to change completely the management of their business. If there is no long-term profitability of their produce, it would be a big loss to resume to conventional practice. Another point recognized by the processers is during the conversion period the products can only be sold in conventional. While there is an in-conversion label present, only product of single agriculture ingredient can be labeled (EU, 2007). This constraint makes it almost impossible for the farmers to sell their products with a higher price because the processers cannot utilize this label in their final product.

The contribution that the processor is willing to make is to financially support the farmers during conversion including purchasing the in-conversion product with a price higher than the conventional market price and provide financial support programs such as no interest loan for fixed cost investment. To secure a sustainable revenue for the producer, a longer-term, up to 10 years, partnership is formed. The goal is to build trust and show commitment to the farmers to form successful relationship (B. Schulze, C. Wocken and A. Spiller, 2001) The pricing methodology is discussed up front to ensure a sustainable profit for the farmer. Also, technical support is provided in a way of collective training and individual consultant. Technical sheets and guidelines are used to support the farmers to perform best practices. According to the interview with sourcing managers, the way of communication is through consulting firms and experts. Though sourcing managers are

accountable on communicating the needs of farmers to the business and manage the stake holders, frequent direct contact would be made by experts and consultants.

Balancing the investments and return of investment

The following section discuss the return of investment for the processers and the added value for the company to invest in conversion of organic farmland. This topic relates to sub question 5 asked in this research.

Sourcing managers explained the prerequisites of forming a partnership. There must be a clear interest in volume to start the investment. For processers there must be a need of volume and constraint of an added value, local for example, also confirmation that there is no current available produce on the market and there is no available farmland to contract for the next crop to decide to invest in conversion. When choosing a partner to convert, the known partner is always of first priority. The partnership formed brings the benefit to the processors that they can secure the needed volume and secure competitive pricing on a long-term basis. Also, partnership ensures the sustainability of the business using a model that takes into consideration the production cost of the farmer. By working with the farmers to gain efficiency and productivity on farming practice reducing the cost of production, the competitiveness of both the producer and supplier is increased.

Financially for the processer it is easier to set a budget with a model where production cost is closely monitored and anticipated. When there is an agreed margin on the raw material it allows the processor to have a more stable raw material cost and can anticipate if there is crisis on the raw material production.

This partnership can also be utilized in the marketing of the product to strengthen the sustainable image of the company and brand. Processer would be able to share with their consumers the story of conversion and link them to the producer via media or physically by holing events partnering with the farmers.

In relation to the hypothesis, the processers are able to propose a model of working with farmers to secure the availability and pricing competitiveness of raw material according to the nosiness needs without compromising the sustainable profitability of farmers, the hypothesis is correct in the way that interviewed sourcing managers shared successful experiences and concrete plans for near future that match the needs shared by the farmers.

Limitation

Limitation of this research is the lack of interviewee and lack of diversity in the background of interviewee. With limited time and resource, the research focuses on the sourcing managers of Danone. Therefore, the business background of each sourcing manager is same and the report lacks a wholesome picture of the processing industry. Two farmers instead of four were interviewed in this research instead of four. The reason lies in lack of time and resource to carry out all interviews and analysis in the given period. Organic farming practice is specific to the geographic origin of the farm and the type of crop cultivated (Dunsinea, 2002). The interviewees in this research provide case specific answers according to the current business picture and the scope that the interviewee is responsible with. The case company is a company with high sustainability goal and strong commitment to investment in agriculture, which is a good example of processers with sufficient resource and clear business orientation towards sustainability. However, the case company can be less representable for processers with less resource or orientation towards sustainability. Also lack of

farmers participating in the interview is a significant limitation as both farmers interviewed are small scale farmers who did not experience close relationship with processers.

More research on different scenarios and different category is needed to gain a full picture of organic agriculture and converting from conventional to organic.

5. Conclusions and Recommendation

In the following section the conclusion of this research is presented. Sub-questions are answered by concluding the result analysis of the interviewee transcripts and discussion of each result. The main question is answered by concluding the results of all sub-questions.

The goal of this research is to identify the main challenges of producers to adopt organic practices as well as processors to secure organic raw material and maintain supplier relationship. The direct relevant audience and target of this research are sourcing managers of food processing companies. The experience of processers and farmers are connected with a qualitative approach. With qualitative analysis o the interview transcript, the following can be concluded.

The current way of working with suppliers is dependent on the type of raw material and the business orientation of the finished product. There are two kinds of suppliers supplying raw materials, farmer supplier and first transformation supplier. For farmer suppliers the connection with farms are direct however with each farmer providing one or few references individual farmers represent a small portion of the portfolio. For first transformation suppliers there is no direct touch point with the farmers however the relationship with first transformation suppliers are more strategic.

When sourcing organic, long term strategic partnership needs to be established with both farmers and first transformation suppliers. This need is answering to the main challenge of organic farmers which is the uncertainty of future market and organic farming productivity. Long term partnership allows the processers to secure the volume needed for the business with more control of the supply chain and provide farmers the security of return on investments to converting their farmers.

Partnership with farmers involves financial, technical and other investments to support farmers convert their farms. Financial support includes purchasing the in conversion produce with higher price than market, contract schemes and procing methodology that ensure sustainable profitability of the farmers, loan programs for investments for fixed cost and support on insurance for unexpected weather conditions. Technical support includes individual consulting, collective consulting, technical sheet and best practice workshops. Depending on different background conditions of the farm, support is given including social welfare and education on sustainability. Other support such as social welfare of all labor force on the farm and insurance support can also be prioritized before investment in farming practice depending on the type of farm and the geographic location.

The way of connecting with the farmers include Face to face meetings, farm visits, farmer supplier audits and dedicated project management personnel. In terms of financial support crowd funding platforms are a new way of investing in fixed costs or conversion project of the farmers.

The business is also benefiting from the partnerships with farmers. When a partnership is established it means that the business has a clear need for certain material and there is no availability on the current or near future market. With up front negotiated contracts the processers can not only secure availability and mutual margin of the produce but also facilitate the efficiency of agriculture in cooperation with farmers. The processers have also identified opportunities to trade organic raw material in the future if there is a surplus of need. Most importantly there is an added value on the

image of the brand and business. The initiative to support conversion and invest in farming is in line with the vision and mission of the business.

On the farmers' point of view, the subsidies from the government and support of processors is indeed answering to their challenges. However, changing their farming practice from conventional to organic is not only a fundamental change on farming practice also a change of mindset. Both farmers interviewed are not entirely convinced of the benefit of organic farming to the environment making it the main barrier to convert. History negative experience also contribute to the refusal to convert. Trust towards the processors and belief in organic farming are the most important factors influencing the farmers decision to partner with processers to convert their farm to organic.

Answering to the main question of this research, large food processers can support farmers financially with upfront contract agreements with flexible pricing methodology ensuring sustainable profit for both farmers and processers; loan programs to support fixed cost investments and possibly through crowd funding platforms. Technically, individual and group training can be held and technical sheets and experts can be assigned to each farm. Other investments such as social welfare can also be prioritized depending on the type and geographic source of the raw material. Business orientation of the final product also needs to be taken into consideration when making the investments. Prerequisites of investments include clear need of volume and no availability on the current or near future market. When working with suppliers, long term partnerships up to ten years are established when working with organic raw materials. Historic partners are first considered when choosing partners to invest in. The interviewed processer had high motivation to invest in agriculture due to the company image. It is believed that investing in conversion and organic agriculture will bring positive image to the brand and social license to operate.

Recommendation

Recommendation to the processers on the short term is to improve the ability of the business to provide a volume outlook for future production to allow better anticipation of future production on the farm. In order to achieve reliable forecast on business need, integrating reliable forecast system and demand as well as inventory planning systems for example is a way of improving the accuracy of forecast in demand. Furthermore, regarding to contracting, flexibility to the market price and production output is needed. Also, negotiation upfront allow both parties to secure business needs at the beginning of the contract. Contract terms such as pricing depending on mutually agreed margin and productivity clause to adjust raw material price according to the output of production is recommended.

Recommendation to the processers on the long term is to invest and innovate further on agriculture production practices in order to increase the yield of organic agriculture and stabilize the farms. Investments such as collaboration with research facilities and universities to collect ideas and disruptive innovation on farming techniques to overcome the obstacles of yield decrease and other occurring challenges. Innovations at the laboratory levels on new natural pesticides and herbicides for weed and pest management; machinery that is economical and universal to different plantations to remove weed automatically and treatment techniques to protect produce with physical means. Also support on pilot testing of innovative ways of agriculture to further confirm if the innovation is applicable to the business and agriculture need.

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Appendix I

Interview plan- buyer

Interview question – buyer

Opening and explanation of the research
General question to understand the scope of the buyer
What is your scope?
For how long have you been in this role?
What is your category spend?
How many skus are in your category?
How many suppliers do you have?
In your point of view how do you see organic?

current way of sourcing
What is way of contracting raw material suppliers for your company? Starting from how to choose and form the partnership to contract terms to relationship management.
What is the way of working with organic suppliers? Please mention the differences with conventional and organic. (different way of contracting/ different quality standards/ different sourcing strategy etc/ different incentives when negotiating with suppliers)
What would be the ideal organic supplier? (what scale of farming/ with what kind of infrastructure)
What would be your priority when sourcing organic ingredient? (Price/ risk level of product/ reliability on consistency/ trust on credibility of product/ Quality of product/ others)

Input/ investment of processer to organic conversion
In what way is your company driving conversion and supporting the farmers?
Does your company evaluate the practice of the farmer (what are the crop diversity/ rotation etc)?
How do you ensure the return on investments?
Apart from supporting conversion what other ways to secure organic raw material source?
What other attributes are you looking for other than organic?

Relationship management and added value creation
With what way or platform do you connect with the farmers (face to face/ web meetings/ phone call)?
Do you involve the suppliers into the marketing of the products? If yes in what way?
Do you involve the sustainability practice into the marketing of your products? If yes in what way?
Except being able to secure long term exclusive contracts, what are the other added values of supporting conversion?
What difficulties are you facing?

Flexible for additional questions
Any other remarks about this topic

Appendix II

Interview plan-producer

Opening and explanation of the research

General question to understand the scope of the producer
What are the main crops you are cultivating?
For how long have you been farming?
How big is your farm land area?
Do you have organic farmland area?
How much is your harvest per year (crop cycle)?
What are your distribution channels?
Do you receive any kind of technical support on agricultural practices today? If yes in what way?

Current way of distribution
What current partnership do you have with your customers?
What would be the ideal partnership to form with a processor?

Questions regarding converting conventional farm to organic and organic farming.
What is your idea of organic farming?
Are you willing to convert your farm to organic?
What is the difficulty you face to convert to organic?
What is the difficulty you face to create a partnership with processers?

Scenario: Proposal from the processer is to support during conversion period in the way that processor would purchase the product with price higher than the market (ex. if organic is 100% more expensive than conventional, processer is willing to pay 50%+ more for in conversion product) with the agreement that after the conversion period producer will supply certain volume of organic produce with a competitive price. Meaning that a long-term partnership of 5 to 8 years will be formed for the conversion period and after conversion. During this partnership technical support will also be provided to ensure best agricultural practices.
What do you think about this proposal?
What would you agree and disagree?

Except the technical and financial support on conversion to organic, what are the other support you may need?
What other attributes can you provide other than organic (specific agriculture practice to enrich the soil/ sustainability innovation)?

Relationship management and added value creation
How can you involve yourself into the marketing of the products?
How would you involve yourself to increase the competitiveness of your buying firm?

Any other remarks about this topic?

Appendix III

Data document 1_Transcript of interview Sourcing manager1

Code for Data document: **MR**

In your point of view how do you see organic?

When you talk organic, there is a higher question. Is organic a trend? Or will organic stay in the future? On a long-term organic be the solution to feed the world? In the past in the 19th century everything was organic, in the past century we started to use pesticides in order to be more efficient to. The trend is to move to organic but conventional still stays. The question is where this needs to go? The efficiency in organic cultivation need to increase a lot, meaning that next to the organic certification there needs to be innovation on how we grow the crop ultimately to be closer to the consumer and to be more efficient. There needs to be a link to innovation, to urban farming, to vertical farming, these kind of elements, these are by the way not certifiable at the moment. I don't think there is an answer on the bigger question. What I think is in the future there what we need to do in order to save our planet and feed the world is to move to more natural, but on the current organic regulations we will not be able to answer to the current bigger question on nutrition, growing population, growing welfare etc. There can be two directions: to stick to the current organic regulation in order to boost innovation and become more innovative, the other direction is out of organic to make conventional more natural. Let's say on the short term on organic there is a strong consumer added value to organic because it is more natural and organic is the biggest guarantee that your product is natural. Today the organic demand is increasing more rapid than the offer; meaning that there is a clear role for the processors, bigger and smaller companies to drive the conversion in order to comply to the consumer needs. This is what Danone is doing and specifically talking about the baby food division is that in order to support our needs we actively need to convert farmers. On top in our business we don't only want to move to organic, in many cases we want to move to local sourcing. This is a challenge for company like Danone where we have centralized procurement. Centralized procurement is coming from the idea that if we leverage our volume there would be an added value from a cost perspective, there will be an added value on the efficiency perspective though the trend of consumers is we want to consume locally produced meat, fruit, vegetables. So, this is something we want to combine. Which is why we want to convert farmers region specific. For example, in France, we are focusing on transferring the apple farmers because we know in France today, the organic offer is simply too small. and our demand in organic will increase so we are convincing farmers to convert to organic using investments from our side and with guarantee volume buying after conversion. Key challenge from us is that we need to have a longer-term volume outlook because conversion takes three to five years depending to type of crop, when you decide to move to organic. This is a key challenge for us because today for companies it is very difficult to tell okay what is my organic market in 3-5 years' time and for us we need to find with this limitation on volume outlook we need to put the action already in place to secure because we know the volume will increase in the next three to five years. This is the high level over view on what we are going to do in the baby food division.

What is the current way of contracting raw material suppliers? Is there a difference in sourcing organic and conventional ingredients? If so what is it?

The status in our business is that we will not change the current product line of conventional by organic, we are putting organic baby food line on top of the conventional. One thing we need to notice is that baby food today is highly recognized and so is organic but in a different way. So, what might happen in the future, is that the baby food regulation and organic regulation/ certification will be coming together meaning that if you source organic it will automatically be baby food. Meaning there will not be a difference between organic and conventional baby food and this will be very interesting is it happens. This is the current situation. The organic portfolio will be on top of the conventional, and what might happen is that there will be some cannibalization on the conventional portfolio. Meaning the volume in conventional will reduce and organic decrease because consumer is switching from one to another. If this happens then we will put more and more focus on organic and less on conventional. The difference is pronominally the term of the contract. Now we are setting contracts with farmers who are not organic today but starting for us. The conversion process of the organic product will only be available in 2-4 years' time. Meaning we need to make long term contracts with our suppliers up to 10 years. There will be a contract covering the conversion period and 2-5 years after and of course you want to secure you have access to the volume they have converted. In organic that requires conversion it is much more like a partnership. Meaning that up front you decide the pricing methodology for example meaning that you're defining how we are going to calculate the prices during conversion and after conversion, what is the market impact on the price. In the end you don't have that much room to put farmers and processers in to competition because everything is based on the agreement made several years ago. For conventional cereals for example. For wheat, there are plenty of farmers and processors who can provide wheat flour meaning that you can play with the competition with the supplier. Which is not the case today with organic. So, you need to make sure you have your partnership in place which means securing the volume, quality, a good price of the material to allow the full coverage of the cost of the farmer and make sure we are paying the farmers a good price to have a proper living

What would be the ideal organic supplier? What would be your priority when sourcing organic ingredient?

There are two types of farmers in this partnership. Fresh fruit and vegetable we contract directly the farmer. So there need to be an internal motivation from the farmer to convert and internal motivation to the concept of organic. We need to in the end guarantee the volume we will buy which should not be a big topic; the basis is that organic demand will grow beyond supply and there will always be a room to sell their products. The other one is the processed fruit and veg, frozen and puree for example. Here we want to partnership with processors who are supporting and converting farmers. Meaning that we make a partnership agreement securing a certain volume or securing a certain amount of land available to convert to organic dedicated to us and they are driving the conversion, we want to access to the farmers but in the end, we are contracting with the processors because we are buying the processors products. In the end the priority is the same. There is a shared value between availability price and quality. The three main criteria it will be the same with organic and conventional. The point is in order to secure the same volume in organic it requires partnership. Specially to secure the availability. So, price and quality for sure is not less important than availability but to secure availability it requires partnership and in fact also in order to secure a good price in organic it requires a specific price methodology to secure a good price so partnership longer term differs where in conventional it is not always the case. In conventional you can survive and find a good price and good quality from a year to year type of contract and scheme.

In what way is your company driving and supporting the farmers?

Right now, the position is driving conversion when we need the volume so we will not drive conversion if there is no concrete need from our side. And there is one relevant need now is to find ways to secure raw material now and sell raw materials later. So, take a trading position. the motivation is coming from ourselves as today we are not sure what is the demand in three years. But if we don't act now we won't have it for sure. Maybe better convert farmers to secure say 2000 tons of carrots if we only need 1000 in the future we can sell 1000 tons to someone else in order to lower the financial risk.

In terms of how Danone is investing in the conversion with processors and producers is there differences?

Not so much meaning that in the price of the materials there is a difference with the processors who are fully organic and partly organic. Fully organic are without extra cleaning regime, of as partly organic processors there is an intensive cleaning prosses and documentation process in order to ensure organic grade. This means the lower the volume we are buying the higher the price of cleaning. Then in term of investments, the topic to discuss is how do we cover the cost during the conversion? Let's say that in the years of conversion the farmers already have to invest in the costs related to organic farming. In general we say the cost of organic is higher even they don't have to pay for pesticides in general but there is more labor cost. These cost needs to be made but they are not paid on an organic level. This is the topic that needs to be discussed and we are willing to invest in those cases where these topics are related. Its more relates to the region you buy from than the type of farmer. For example, in Germany they believe in it and they are sure they will always be able to sell their produce in three years' time. In France for example it is more difficult to convert farmers meaning that it requires higher investments to convince them to move to organic. And they will only move to organic specifically for us whereas in other countries in Europe they say if they can't sell to us they will sell to someone else.

Investment means money or more?

One of the things we are evaluating is how can we support farmers to gain efficiency in organic agriculture. There are many statistics but we know that overall organic yield is lower than conventional. Variability the crop is more than conventional meaning that it is less reliably one year you could have 80% and another year you have 100%. Which this difference we do not see in conventional. The other thing we are developing is how can we support farmers to have the right agriculture innovation to boost efficiency in organic cultivation.

Are we supporting them more technically than financially then?

In many case it is both I think company like Danone we need to play a role in the technical support also. So of course, there is financial investment and on top of that there is technical investment

And how do you evaluate this partnership in the end or now? How do you monitor this project is going the direction you want?

During the conversion the agronomist of Danone is following up the progress. Agronomist specialized in the specific crops, they are following up with the farmers making sure they are making the right action plans etc. and then the real performance will be evaluated at the first harvest. So, in the conversion we follow up technically and it is when the harvest we can really do the evaluation. One key element is in the end, those material you seed every year. You can decide with your supplier what to seed and how much to seed. So, let's say you can at the seeding area you can tell them what

amount of volume of what you need. Meaning you can control the volume every year as long as you have the land to grow. Also, this is needed because in order to maintain healthy soil the farmer need to do a rotation of crops meaning that in one year a field growing leek next year could be growing beans. With conventional there Is there is more farmers and more land available so it is less complex.

And apart from supporting conversion are there other ways to secure sourcing

Basically, we have 3 steps 1. Checking from our current approved suppliers if they have any volume from last crop this can be the case but very often not. If not, possible we can do the same check with the potential suppliers if there are volume from the last crop but this process is longer because we need to approve these suppliers. Step2 will basically be checking with current organic suppliers if they will have volume for the next crop meaning you already can have access in one or one and a half year because then they can control the seeding for example. Then the third step is the conversion and the conversion we will only do when the current offer is unavailable current offer meaning best case from the last crop or at the next crop. So today for example for cereals we have organic maize that we did not buy we are checking with our current approved supplier if they would have availability for the next crop. Now is the seeding period of maize and suppliers will access if they have enough certified land available to grow organic maize, if yes then we will have access. If no then we need to push them into conversion it takes few years.

And what are we looking for other than organic?

One is organic regulation, then it is local meaning supporting local farmers and the local environment, second is we are trying to find out what can we do to support our farmers to improve the health of the soil to improve employee living standards. So organic is already covering a lot of topics and what can we do on top.

Involving our partners in creating added values in the finished products

We are quite good at this in ELN as we already do this with our conventional line. If you look on workplace the sucralose project for sure you can find some movie with farmers. There are commercials, newsletters, videos where we make farmers and consumers. In France for example going organic is also pushing our farmer to the supplier which is why local is so important so the consumer can link to someone next to her and cultivation organic baby food. We are doing this with conventional but not in a structured way but with organic this is part of the concept, part of the consumer added value we are creating. If we are not going to tell our consumers how we are cultivation our crops where its sourced from etc., the concept is not strong enough. So, it is not only organic it's also the conversion story as well. In full transparency sourcing transparency is the key

What are the difficulties you are facing?

The main difficulty is convincing farmers to organic, meaning one say sustainability point of view it is the right thing to do and they can make money out of it. Depending on the way they are behaving, the way they rule their company and the way they treat their crops they prefer to keep on doing what they are doing than move on to something else which is more labor intensive. In one region France example convincing means investments. Whereas in other regions convincing is less difficult, meaning less investments and you will find more internal motivated farmers to convert to organic

Appendix IV

Data document 2_Transcript of interview_Sourcing manager2

Code for Data document: **CL**

In your point of view how do you see organic?

For Danone now to move to organic product and we want to move a sizable amount of the business for the dairy division. We are talking about 15-30% of the portfolio will eventually move to organic; probably around five years. So, it is putting pressure into raw material availability and supply. And it's not only putting question on the availability it's also the price. At what price and how much are we willing to invest and are the consumers, as an open topic willing to pay for it? For instance, today because of this supply demand issue the price of organic fruit is about two time as high as the price for conventional for the processing industry. In reality for cost it is estimated the extra cost to produce organic is 10-20% higher. So, 20% higher in reality but because of the demand is really high and the supply is still low, its actually 2 times the price if we want to buy fruit. It is mainly on the producer level. On the transformer point of view, to buy frozen fruit for example this is driven by normal fruit. The other thing is that the margin is higher in supermarket and retail area, so they can absorb easily. Indeed there is a challenge there. That being said looking at the volume we have and the future needs, we are going to need 100-1000 tons on the top fruit depending on this one. So, 1000 tons of fruit is a high number but it is achievable. When we look at our current supply base and we look at the suppliers who are converting or are already converted, we believe we are going to make it. Means that we need to commit in advance so we cannot buy two weeks earlier our crops. For example strawberry which is the biggest fruit, if we want large quantity next year, 1000 tons for example, we need to commit June this year.to be ready for march or April next year, because for fruits cycle. So, there is the conversion time and there is the crop time. So, they need to know what is the area we need, they have to not spray pesticide, and they have to work the entire year towards that goal, and that is where we get most of our fruit. I make commitment to the supplier of frozen fruit. The suppliers make whatever commitment they want with the producers. So, I'm not involved with the farmers. For dairy we don't buy fresh fruit we only buy the second transformation. With the converters so with the second transformation suppliers we will commit but might not pay but it is likely, and they do it very often with the conventional. They will pay before and the farmers pay them back in kind. So, the farmers very often they don't have the cash to buy the plant for instance. Someone, one of our suppliers or several of them will buy the plant and pay for them and then when the plant bear fruit the give the fruit to the transformers, and that's how they get their money back. And then once they get enough fruits back, they start paying the farmers money. There is some kind of a loan this way and that's already the case for conventional fruits and will probably be the case for organic. But it's not a specific investment or not what I know of but with what we say, we kind of have enough for what we need in the market. Organic regulation have a big difference as baby food as in organic regular we have more suppliers because historically we have larger volumes whereas on baby food, there are mainly in Europe so we have a larger supply base. Besides the fact that we have the pricing base pretty high, despite the fact that we need to tell them in advance and ask if we can get them or not; we do not have a big challenge on getting the volumes. And even some of the suppliers are already with Danone and some with our partner, so we believe that we can get the right quality as well. So of course, the question is the yield and the weather. Because you can book fruits now but if there is a humid weather next year and a lot of pests, then the crop can be

destroyed. If you are using conventional fruit you can spray pesticides to limit the damage. But on organic you cannot spray pesticides and you can lose a much higher part of your crop. That is the biggest risk of organic. You can book the fruits but you cannot guarantee that you will get it. So, I think that's a challenge with organic and this is also why you have a higher price because there is more risk for the suppliers. So usually what they do is they will either spray and lose a bit of yield, then it means a loss on profit or higher price. But sometimes if there is too big of a problem they will spray. So, it is no longer organic but they will not lose all their production.

What is the current way of contracting raw material suppliers?

Let's say we need a new fruit. The business tells the need. We want a strawberry that is crunchy when you eat it and it needs to be red. So, you have R&I who will design the specification saying that the strawberry should have this much sugar this color and this firmness and the supply chain team tells you this firmness. So, when you know what you want and in what quantity you can start finding the supplier to meet these needs. The buyers have a role but the quality team also has a big role because you need to find the right factory because it could be puree pasteurized or aseptic it could be pieces also pasteurized or aseptic usually frozen and a tiny bit of juice. I want pieces of 10x10 then I look into market where are these fruits produced. When they are produced are there factories that can actually process them? So, wash, sort, freeze, store them, so you look for candidates and go to then to ask if they are interested. Of course, there are interested and then you shortlist it to a few depending on the capabilities, the external audit they have received, the buyer and the quality team go over and audit them and decide if they are according to Danone standard and base on that you make the final decision. All of this needs to happen before or at the beginning of the crop before because you need to know if you can book and beginning because you need to know if you can use the machines and you need to see the machines running and people working just at the very beginning of the crop. And if the supplier is approved you start discussing the prices. There are different terms. How long do they have to stock and store it before we can use, because we use within a year and they store it in a cold chamber? There are the payment terms and the quality as well. The specifications need to be met. Danone pays a higher price than the normal fruits because we ask for a better quality than the other clients would ask for then you discuss the condition and the price. Then you discuss the quantity usually with a new supplier we use small quantities like 20 or 40 tons that's 2 trucks and they deliver during the year and we look carefully on the quality, their ability to deliver on time the overall relationship and if it is good the year after we will increase the volume. In dairy division we only audit the factory. And in the factory one of the question we ask is how they audit their farmers so we look at the reports on how they audit their farmers. So, we are not ignoring the far and we go and visit but we do not audit. We see how they manage their farmers but we do not audit.

Is there a difference in sourcing organic and conventional ingredients? If so what is it?

The way of sourcing organic is the same. The thing is that this is the first year. So, I haven't really booked yet. Within Danone in Europe, we have one brand that is organic and it's been organic for 10 years. The volume is limited and most of the volume is bought by our supplier and not by Dan trade except blueberry. Blueberry is very easy to get in organic because its wild fruits so you don't put pesticides and if the practice is good then the soil is good because it's wild. So, we were buying organic blueberry but it's basically the same with conventional blueberry because it's wild. So that is our experience until now and that was not a big deal. The other fruits were bought by our suppliers. Now, the business is changing and for regular business is moving to organic. So, this is the first time

we try. There is one launch in Spain called pure, and the volume is very limited, four/ five trucks. This we already find as today we have suppliers already suppling organic. So here there is no commitment. When we are going to start having the conversation is when we start to buy the large quantity. Like 1000 tons of strawberries. The thing is that the business is not committed yet and the discussion are not completely closed with suppliers for the simple reason that the business doesn't know what they want to do so I don't know. But I'm expecting that it will be a longer commitment. Currently the way of sourcing for organic is the same with conventional because we don't have that big of a need yet.

In what way is your company driving conversion and supporting the farmers?

We are not supporting conversion because we don't work directly with them we buy second transformation. I really think that already with what we have now we have enough to produce. At least for the next one year. Maybe in the future years we will need more but there are also the farmers who are under conversion so they don't need to wait for us. It is more than organic but also sustainability. We want to support farmers and we want to make sure that they have a sustainable way of growing, that's what we star to do in morocco and there are other initiatives in other countries. But we are not going to invest specifically on organic, we will invest on sustainable 360 degrees sustainable practices making sure that the pickers are 100% registered and legal they have social security they have insurance, helping also farms to have insurance for weather. That if there are storms and floods they also have insurance for those and not lose everything. We also want to improve yield make sure there is good soil health. These are linked to organic but they go beyond organic. So, on that we have already started investing and we will do more.

Can you explain what we have already done?

We are producing in morocco, in this project, this is a five year project with a budget overall of 2.2 mil euros we are co investing between Dan trade, ecosystem fund, two suppliers who are competitors but co investing this project to help farmers and a German NGO and we are paying 1,5 mil out of 2,2 we are going to test different agriculture practices that farmers are not used to in morocco we are going to test bio entrance, drones to test pesticides and irrigation on the field we train farmers on sustainability, hygiene practices, agricultural practices, and we also going to push them that 100% of their work force is registered and legal so that they have access to social security and so on also help on the pickers for example that when the pesticides are sprayed they have protection equipment and they wear it because sometimes the farm have it ND the people are using it. And then there is the financial aspects of it. If you improve the practice you improve the yield. If you improve the yield you improve the profitability and you make the farmer more resilient and you make the farmers stronger. Like an ecosystem. So that's really the pillars, pesticide reduction bio trans use different agriculture practice and social welfare. There is people. There is one fulltime project manager. And all the knowledge Danone has accumulated. Communication is done by Email and face to face.

So, it's as much the social practice why?

There are a few things. Baby food source in Europe, though Europe is not complete risk free but yet in Europe you have regulation and laws that are enforced by the government so they can focus less on the social aspect. Also, baby food is very different from conventional grade. The pesticide tolerance to tolerance with any kind of molecule Is different. So with baby food they always had ways to be very careful what the farmers are doing, what pesticides they are using whereas

conventional fruits where it is sourced everywhere in the world where there are regulations but are not enforced they can basically do what they want and on the other hand the fruits are conventional so the criteria are less high so it's easier to produce the fruit so for us it's everything is important as well as the sustainability part whereas in ELN really the business orientation is with the specification and really the agriculture part which was to make sure that the product is certified baby food and for the social aspect it's not the same timing and not the same request.

How do you ensure the return on investments?

There's a few things. One thing we do believe that in the future conventional and organic are going to be at the same price. And, conventional will just disappear and organic will be the new basic. And by that time everybody will be on the same standards, and everyone's buying organic. This is the future. Everyone will be buying organic. But this is in ten twenty years. So that's one thing to the questions is when it becomes mandatory you need to be ready and you need to be ready before. So, its investment to be ready. It's partly to answer to the business need now but it's also to be ready because this is coming no matter if you are ready or not. And if it is coming and your business is not set up your supply chain is not set up you will just lose all your business. So, it's an investment is really for the future. sustainability is the same thing, it's like smart phone and normal phone with a wire. If the company doesn't invest in the R&I, the technology, the different suppliers to invest in the production of smart phone, you can have the phone with the wire but nobody is going to buy it. So, you will lose all your business. So, the real investment if you do it well and if you do a partnership with the farmers and suppliers, we do the partnership with the farmers, they do the partnership with the supplier. The real extra cost we believe is 10-20% we believe not 100 percent so there are ways to limit this investment. And then the question is also the yield. And I think there is impact on yield when there is a weather crisis but in normal condition, I know there are research done in universities but it is not proven that the yield is different with organic verses conventional. So, the difference between 10-20% is really the impact on the weather that they lose a bit of crop we don't know exactly. I'm not sure consumer is willing to pay for organic. They want it but I'm not sure they want to pay for it. There are studies are being laid out now and the launch of our project pure is also a test. Are people willing to pay extra for this product because we will launch them with an extra test. And then the other part of the return on investment is really on the sustainability. It is what the company bring like Emmanuel Faber is really convinced. We have a duo project so it's not just business it's also social, environmental and it's not only to make profit we are able to do it sustainably meaning that we can do it on the long term. So, if you dig deep on the resources if you put pesticides and chemicals on the soil then at one point the soil id going to be depleted and not fertile anymore and you are not going to be able to grow anything. So, it's a little bit mirror on the consumer thing but on the other side of the chain. If you don't go to organic if you don't go to regenerative agriculture, if you don't go to sustainable practice regardless economic environment social at one point you just will not have it anymore. And if don't have fruits then you cannot put fruits in the yogurt and we cannot sell yogurt anymore. So, if don't answer to the consumer need the will not buy and if you do not have fruits you cannot sell. So, at one point the equation becomes simple. We need to be sustainable and that's the long-term vision. And you have the short-term point of view as well and personally speaking, it's also the image we have. Danone has never been so popular since Emmanuel Faber arrived and started talking about sustainability and making inspiring speaking everywhere. And the shareholders agree with it they are staying with us they are trusting us the fact that we do all that cost money but it also gives us the license to operate so it gives us the ground the good image of the business and if you have a good image people follow you. So, I think it's worth it the risk.

Sourcing manager of fruit upstream 2,5 years purchasing for 10 years, 100 mil euros 50-70 skus

Appendix V

Data document 3_Transcript of interview_Sourcing manager3

Code for Data document: **LU**

current way of sourcing

An important remark is to know that I'm learning now. Today the current relationship is done via what we call the first transformation company. The first transformation has the relationship with the field so we go to the first transformation which is clean cut frozen. And those guys are responsible to source. And usually you source near your factory, because you don't have a long time before you source and process. You have the quality you have the oxidation process and this is applicable for all kind of commodities. Which is important to have in the background because this also determines where you can source, because the land. The land you can expense is also very dependent on where the factory is because if you want to launch a land of strawberry field, I can do it on organic, but I don't have any factory to transform it. It's applicable for sugar cane, its applicable for palm oil it's applicable for everything. So, you have a ration when you source. it's the way we are working. We calculate our demand based on the fruit preparation demand, the first transformation guys they do the calculation on how much and which kind of fruits I need farmers back in to closing the loop. The specification for us that goes about the quality the pesticides and the traceability. That will be the way. the sourcing of raw materials. By organic is no different by essence because the pieces are the same but you need to have certification, the land must not be contaminated; the factory must have a way to split the line from organic and non-organic. The process is the same, the chain is different because this is the way to split both but by essence not supposed to different. You don't have any special process linked to organic. Organic is not a new agriculture. It is the newest old agriculture. The word organic does not exist until 1940 something. During the second war it's when we have chemical component and discovered that some of the component is killing insect but not the plant, so the whole chemical and pesticides can from the war and there was the so called green revolution to boost the productivity using chemicals and pesticides. So organic is not new and the price is not supposed to be different. It's different because there is a difference in demand.

The difference in yield debatable. Usually yes but I have plenty of example where it is not. For the biggest producer of cane sugar in north America, organic sugar cane had more yield than conventional because when you implement organic you have a better eco system to produce so it's the management. When you use the chemicals and pesticides you forget to evolve the roots. According to organic imagine that the whole agriculture practice, all the tractors and technology was developed in the framework of organic, today it's natural to see a better yield than the traditional way of agriculture because the traditional have 70 years of lag that you are not working. So, some guys can really evolve their framework based on organic, then you can really improve the yields. And when you ask the company, they say they don't want to reduce the price. They control 60% of the overall market worldwide why should I reduce the price? For me the question is more on the demand. We can say the there is no yield on organic but is it really because that it is organic or is it because there is a lag on soil health. So, you can see that the drop of yield is not forever. It is for one or two years and that is manageable. So, this is the invest that I'm doing. So, all in all organic should have the same price this is the way of working of organic and potentially this will be the normal way. That's my point of view here.

Today are you sourcing organic?

Today for the fruits category yes mainly strawberry.

And do you face this challenge that you don't have enough offer to meet demand?

I don't think so. In the beginning, yes because it's not just organic it's also the consortium I want the quality the price to be local etc. because when we place the word organic there is some more attributes that come together. So, when we combine the demand we have, we can find suppliers. we have suppliers and not just one single suppliers. We have suppliers but you need to pay the prices there. If we don't talk about price just availability then there are no constraints but if you are looking for more attributes then there is a constraint.

And today do you feel the need to approach your currently contracted farmers to ask if they want to convert to organic?

That is not a today issue but can be a tomorrow issue because we don't know what will be organic inside Danone soon. We don't know if it is local organic or organic with something else. So today I won't place it as a bid constrain if tomorrow we will need organic with something special in it and from a specific region then I will need to approach the farmers and ask them to have a different way of working. The decision need to be taken short term. And, and we already taking this discussion. For new farmers and farms, we can invest and bring fields etc. we are already starting the discussion and it's really a matter of time to start to push this . We are not really taking the action with the farmers because you have plenty of ways to enter your first needs so I don't need to work directly with the farm for my first needs. And when there is more volume then I see a value, then we can change from working with a broker to producer to have direct access to organic. So, the point is when we are transition our sourcing to not make it complicated. For example, If I have a small volume today then why should I work directly with the farmers? But as soon as it starts to grow bigger I move my sourcing direction, my sourcing channel from broker to something else. That's how we sort the picture. Not every time we go to the farmer. The organic today is in Europe, the sourcing for the EDP category global.

On top of organic in what other ways do you work with

They usually have some programs in term of genetics or the plants so to offer technical assistance The other aspect is quality, so that is also the technical and organic is kind of on top of that because organic it's just a way of producing food. The first transformation guys they have financial support, technical support and agricultural support related to the farmers they are sourcing because in that way they can guarantee a good raw material and traceability, financing etc. So, this is what they are doing.

And today do you involve your farmer

It's very limited, that's something that we need to do. The channel I don't know if its Facebook or email or face to face I don't know what I know is that there needs to be communication, there needs to be a way to valorize the farmers to our consumers the is fundamental the bottom line is that I need to have a longer and good relationship with our farmers.

What are we doing today?

On the fruit farmers, I don't see a lot. For the farmers sometimes, some visits but we need to differentiate the farmers and the first transformation. But if farmers then it's just some visits there is no regular touch point with the farmer.

What difficulties have you experienced with FT?

Over all without precising a case, we need to know that the first transformation guys they don't only supply Danone, they supply a number of customers which makes us more what we are requiring them in terms of quality and organic and sustainability, is different than their other clients. That the friction that's between all of us. sometimes we request more sometimes we are requesting less but if the facility is there we need to pay for it sometimes we have opposite interest than a different client, different customers that's their overall complication .to be precise this could be the number of audits we need can be related the level of quality we have, the process, the traceability usually complicated different relationship. Those are the elements usually complicating a bit the relationship with the first transformation guys. This is the we don't represent more than 50% of any of them. So, we already must deal with other interests.

Appendix VI

Data document 4_Transcript of interview_Sourcing manager4

Code for Data document: **PM**

What is the way that we source our raw material?

Firstly, we are already sourcing baby grade which is a bit different than conventional, which means with conventional baby food you already know a lot about the farmers, constraints on pesticides etc. this is the first point. For me there are three levels. Conventional baby food and then organic. You can also say that there is a forth one organic baby food and in our today business we are looking for conventional baby food and organic baby food. which are more restricted than conventional and organic? I would say the strategy for conventional and organic baby food would be to work with the same suppliers. Because we know that we know that it would take a long time to reach what we call baby food grade in terms of quality of the food quality of the vegetable, quality management of the supplier especially the factory. Which is why the priority would be to check with our current supplier and say ok guys are you producing also organic vegetables. I would say fortunately with our current suppliers are able to propose some organic baby food fruit and vegetable. Also with the projects the time line is very short which is why we are eager to work with our current supplier so which means that with the way of working today it is quite similar with the way we are working with the conventional material because it is the same people same supplier same factory. I would say now the biggest the biggest difference is the specification. We need to create new specification for organic raw material so create new specification and spend time with the quality people to check all the certification to ensure that the suppliers are complying to the European regulation. And from the contract point of view it is exactly the same with the conventional we are booking, negotiating volume and price the difference is we are buying very limited volume than conventional because it is a new business and a huge difference in terms of price. The price of organic fruit and veg is much higher than conventional I can say that in average we are paying 50-70%more expensive when you are buying organic baby food. This is a big difference for us and for the business. Let's say this is what we have done to secure the long term recopies there are additional constraints when sourcing organic. Today in France and Italy where our biggest market is they require local sourcing. And this is clearly different as the way we work today with conventional because with conventional our priority is quality and secondly competitivity. But without any country constraint meaning the most important is the quality and price. I can source from Germany, Poland, Italy etc. for organic there is a third priory of local sourcing. the French and Italy products want to be able to claim sourced in France or sourced in Italy. This is clearly changing our sourcing strategy. Now I would say that our sourcing strategy is a bit different because most of our supplier for France are not in France but they are processing in Belgium Spain or Italy, and now we need to find the same suppliers but in France and buying fruit and veg from France farmers. Then this it totally different and more complex which means now we need now to identify new suppliers in a limited geographic zone. Which is one country. And I would say what is tough is to maintain the same level of risk because we are moving from three suppliers to one supplier which means that for organic most of our local sourcing material are mono sourced meaning only one supplier so which means that there is clearly a risk for the service level because there is no backup solution supplier.so this is for me one of the biggest change and then the price. First because you are mono sourcing and to buy French organic fruit or veg I would say most of the French companies they want exactly the same. Which means the demand is 3-

5 times higher than it is offered. There is clearly an unbalance on the market and it is hard to find the volume and it is very very hard I would say almost impossible to get a competitive price. And the fact is that we don't know how long it would take to come back to a normal situation. Because clearly today the demand is higher than the offer and it could be the same for this year and next year but it can also be the case for the coming five years. If you ask what is the difference. This is one of the biggest reasons. Also, we learned we need to work differently with the suppliers because we used to work on the one-year contract with the suppliers but now we see for organic suppliers you need if you want to secure value, you need to commit for more than one year in terms of volume and price. Especially we used to work with farmers and now they say I will give you organic apples only with two conditions, you will support my conversion period and then you'll sign 3-6-year contract with me. This is more or less the non-negotiable conditions if you want to secure the business. It is clearly one of the key learnings we have for this organic business is that we have to be local. If you want to be local, organic and you want to have the volume you have to commit to a long-term contract. And for example, for some roles I don't have this local constraint for example I want to buy strawberry everywhere in the world I only need a one-year contract. It is clearly linked to local sourcing for me. We have quite a variety in terms of size of farms. With orchard we could have a guy with four to five hectors but we can also have guys with one hundred or two hundred hectors. For veg its usually big farms. Today there is no difference with working different size of the farms. I would say in terms of investments on fix cost it would be more needed with the smaller farmers. Big farms they are usually able to cover this cost.

With some cases where Danone is supporting financially and technically they are only linked to places where there is the need of local sourcing?

Yep also clearly today I am working on project if we take the biggest volume, which is apple. It is the biggest volume for conventional and biggest volume for organic, today if I am just looking to find organic French apple then I will have a very limited volume which would not be enough to cover my future needs. But if we are sure that in 2020 or in 2021 we have the volume of 2000 tons organic apples from France then I need to invest today in 2018 on farms to push our current conventional farmers to organic because the time of conversion is three years. Meaning that if they start now we will have the apples in 2021. And clearly this I would say there is two approach first I say to the guy you make the conversion by yourself and I will buy your apples in 2021 or you have the second option that we know the conversion time could be tough and risky for your farm because you can have a big impact in terms of yield, the yield of your farm is declining because you are not using any pesticide or different kind of pesticides but in the end the price is the same. The farmers will continue to sell the apples with conventional price but with this yield I would say cost for the farm is high. Most of the guys they say I'm afraid to move to organic because I will lose a lot of money for the coming three years and I'm not sure that after three years I will be competitive enough. And that's why a lot of farmers they want to move to organic but they can't. due to financial reason during conversion time. What we decide is that in order to push the suppliers to convert we propose them to support partially so not to pay already organic price for conventional apple but say today today for example the conventional baby food apple is 350 euros per ton you can say that organic price is 1000 euros per ton. What we decide is the during the conversion time we will pay not 350 but 650 to be in the middle of organic and conventional price. And this one is to compensate more or less 50% of the yield decrease. So, in that case we are investing in the farms for three years because we are paying higher than what is on the market, after three years, so if we originally make a contract for five years after three years they will continue deliver us organic apples to bledina with I

would say competitive price. This is the other option. I would say today most of our farmers this is what they want. Because they are afraid of this organic conversion period, and if you propose to support them financially they are ready to move. And not only do we plan to support them financially but also technically. Because moving to organic is not only question of finance but also question of agriculture practices. Because clearly this is what the organic experts say that it not only that don't put pesticides on the field and it will become organic if you only do like this you for sure will have a huge decrease on yield if technically you are supported by an expert you may still have a decrease on yield but instead have losing 50-60% it will only decline 20%. Which is very important for the farmers because the yield is more or less the yield.

Investments on the fix costs?

For the moment not really, we only invest in the material price. It is also for the farmers the level of investment is quite high. So I would say is the farmer able to pay alone? Or not? I would say now we are looking for solution. Two possibilities. One is with a bank. We can say we are Danone we are pretty big we have our own bank. Can we propose a lower rate loan like zero rate loan or use Danone as a caution for the farmers? I don't think we would invest in directly the farms. Say the guy needs 50k euro machine then we pay 50k euro to the guy I don't think so I think one we can propose is the bank loan. One example I heard in France is that the farmers create a project in a crowd funding platform that they need to buy this machine and everyone in the country can invest in this kind of project. From one euro to one thousand euros and the CBU Bledina would also be able to invest with this crowd funding platform. This is also one other way to finance indirectly equipment and all these stuffs.

How do you choose who to work with?

I would say the priority is to convert and support our historic farmers because these are farmers who we have worked with 20-25 years so we have a good relationship and level of trust. And of course, if we can move to organic with these farmers it would be the priority. Because it's always better to move with someone you know. But some of these farmers they don't want to convert or they want to make these conversions but alone in that case we need to look for now farmers or let's say younger farmers. This is more or less what we are doing. We already identified some of them and some are still missing at the moment so I would say to sum the conversion is clearly to convert our historical farmers. For us the most important thing our priority is quality. When we are searching for new farmers we need to check is the farmers able to reach the baby food quality. Today in France we lack strawberry who is able to provide organic strawberry of baby food grade. So, on this one what we say ok current farmers cannot source from France, we are sourcing from Spain and Poland but we have nothing from France so we need to source from the market. Identify some potential farmers who are producing conventional strawberry or are in conversion. But we never worked with them in that the first thing basically what we do with all new supplier for baby food we would send them our technical specifications and we would test their raw material to check what is their quality and visit them for an audit. This is quite long but this is the process to partner with a new business. And of course, I would not sign an eight-year contract when we have a new supplier and we have no clue on what is the quality standard. Mostly we identify the potential by the network.

How do you connect with the farmers?

There is three different case for some of the raw materials for apple pear and potatoes w have direct contact from farmers. We buy directly fresh from the farmers we contact or directly with the farmers

if they are individual farms or we contact corporative of farmers because some of the farmers are organized in a corporate then we are in contact with the technician of the corporative. So, this is the fresh case very limited to the apple, pear, carrot and potato for fruit and veg it is a big part of the portfolio. And for the other fruit and veg we work with a processor in that case we don't have the direct contact with the farmer, all of course with the sales manager of the processor but also with the I would say people with the processor who oversees the farmers relationship. Just the intention because we haven't start yet. I would say for this one the objective is to use experts. We have this partnership with an organization which have experts in organic fields in France. These guys they have been working in this field for 20-25 years in organic agriculture. First to make an assessment and diagnosis to the farm. So, the expert will come to assess how the farm is managed how is the mindset of the farmer. Technical and economical diagnosis. To know with this assessment, you need this kind of training and this kind of investments. So, this is just to have a first picture of the farmers and the feasibility to conversion. And then what would happen after this could be collective training you bring ten or 15 farmers in this pivot farm. So, a guy who has been doing this for 10-15 years. And then it could be in an orchard farmers to get together to learn the best practice to manage their orchard or to increase the yield. That is the collective training. Then for the individual training, experts or technical to increase farmers knowledge. Then there could be a technical sheet teach them the treatments for let's say the organic apples. With the frozen veg. in this case the technical knowledge will be provided by our supplier because they already have very good knowledge of agriculture in Benelux especially in Belgium and the Netherlands, and they have their own agronomist who can support the farmers. So, in that case I would say we support financially the farmers and our supplier will support technically the farmers

Today what is the biggest difficulty

I would say there is an uncertainty with the organic business because today we are doing conversion during three years but nobody knows what would be the price of raw material in three or four years. Because the market of organic now is booming so there is a very high price but I don't know if the price will still be high in four years or it will be higher that what it is now. So, we have a huge uncertainty in the raw material price which is not easy to convince the farmers and I would say hard to ensure the PNL for our CBU. I would say now this is the biggest uncertainty. And then for me there is also a huge uncertainty for the conversion time. How would the farmers react, what would be the yield, so it is difficult to predict the efficiency of conversion because it is not an easy thing to manage and one of the biggest thing is with the marketing French colleague because they want local sourcing one but with conversion I can only get it in three years. So, the we have this kind of discussion that we need local sourcing now but not in three years but today we cannot accelerate more . We have launched for bledina 30 different organic gars so it is possible to buy 40-45 different organic raw material for a product line without the geographic constraint but I think the current range the 40% if sourced in France but the marketing wants 80%. So today we are able to launch an organic range but then when you have local sourcing constraint it is much more difficult to make it now but in 2 or three years it should be fine. Clearly there are some farmers that are saying no for two reasons one I would say they are scared about the consequences I would say on the decrease of the yield and the prices would not be so competitive I would say they are afraid of the uncertainties. Even with the financial and technical support they say no but some of them organic is just trend and it will disappear in the coming years.

Added value

First thing is to secure the volume for Danone we want to secure the business on an eight-year basis secure French sourcing. I would say organic sourcing today is ok but French sourcing is much more critical. And this is the first thing second thing for us is to have better cost with this long-term agreement. One thing also very important for the CBU is that the possibility to work with the farmers to organize some sort of an event with the farmers. So, for the consumer to see the farm and link the farmers to the consumers. And this is particularly linked to the CBU in France because this is very trendy now. At the end what is important for the CBU is to have a better brand image to have the image to be a brand that is supporting farmers. The current market price is not helping the pricing. If you want so to secure the business for the guy you need to make your price according to the farm production cost. We say today producing the apple is 250 euro if you pay 300 then you know for sure that the farmers will make profit. What we need to identify is what is the cost of organic and, we need to make this assessment on a three to five-year basis. Because for every year you can have difference. What we want is also propose to the farmers to adapt the contract price to the production cost. Then we will decide together what is the margin we need to implement to implement with the farmers also for us to invest again. So, I would say we have done this exercise for apple. Today the production cost is 650. So, we can pay for example 900. For your information the market price is 1200. So today to be organic for the farmers it is very profitable. Either we pay the market price and it might mean a huge profit for them but maybe in three to five years the volume will be more available in that case they can lose money. Our goal is not to be more than 10-20 percent of their business so what we propose them is not to pay the market with our volumes but to pay the margin according to contract. This way we can ensure the revenue. Maybe it will not be double the price from the market today but it will be a sustainable revenue. So, this is our approach which take into account the production cost and market evolution. So I would say 50/50. For the moment it's like this. For us it is good to not to have a market effect in this model. Today the market is changing quite quickly. For a big company like Danone we don't like the prices to go up 20% one day and to fall 30% the next. for a financial company like Danone it is quite hard to manage.so that's why we move the model to production cost. Another good thing is that we can define the production cost and try to get a more competitive production cost. In Europe to have a productivity clause is the contract to say that today we will work with you to have better productivity to have better practice to have more competitive production cost and for us a more competitive price. But for this you need to have a long-term relationship. On a contract you cannot have such kind of discussion is you have a one-year contract the guy would say pay the market price that's it.

A big uncertainty from farmers is the security after conversion. Can you explain why this can be a risk for the farmers with the volume commitment we already have with them.

Of course, today we have commitment on volume but I would say in reality we have commitment on volume based on every year. Every year we have a contract. Which means that if I want to stop one day I can. And in fact, most of the farmers they say clearly that today if we move to conversion to organic, it will take a few years to convert and the transformation is done and we want to make sure that you don't only want to use our farm for one year after the conversion and that's it because you are going to end your organic business for example. What is very important is that moving to organic for farmers is a very important change to their farms. Meaning that you need to change your agricultural practice, to buy new equipment which is quite expensive, you need to change your mindset, before farmers can treat their plants with pesticides when there is this problem and now with organic the different is that you need to spend much more time on your farm because you need to work with anticipation that the disease will not come or if it comes you need to treat it with

natural solution which not as efficient as pesticides or chemicals. So, I would say of farmers it is a very important transition for their business and their farms of course most of them don't want to make this long and complex process without any certainty with their business and key is today of course organic price is very high. But if a farm turn to organic this year they would be paid organic in three years. So, the guy would say organic apple today I don't know what would be the organic price for apples in three years but he knows very well what would be the cost for his farm so tests why they are not only pushing for the volume commitment they are also pushing for the business commitment.

Appendix VII

Data document 5_Transcript of interview_Farmer1

Code for Data document: **LF**

What is your scope?

There is a variation. There are beans, peas, potatoes, corn for the cows, sugar beets then there are smaller crops.

How long have you been farming?

The farm has been owned by generations for 3,4 generations. 30-40 years for this generation.

75 hectors including all the cashers and things like that. There is current no organic farmland.

What is your yield?

230000L milk, potatoes 800 tons per year wheat 200tons per year

What are the distribution channels?

For different crops there are different ways. but generally, you can say we have the Industry, negotiation sellers, fresh market

How are the current partnership formed?

People usually come to the farmers and make appointments. Typical the buyers come to the farms and make regular appoints with the farmers. The partnership is established from previous generations already. In terms of sales, some customers having been working with for a long time. Different crops are different. For pees and bean, it's set at the beginning for sure they are going to take everything and courage the same. For potatoes sometimes, you sell them to the fresh market There are four main groups that we sell our crops.

What do you think about when I ask you about organic farming.

No yield. Less pesticides decrease the price. I question the validity of organic farming and is organic really organic? There is the cropping system special farming technique to be organic. To be organic you need to have the spirit of organic farming you cannot do it for money. Just to mention something else we question if we can feed the world with organic. Some industry does not like it at all organic. They push you to do treatments so on their side they don't have to do anything. The potatoes are good, no diseases, they just process it straight. They say pesticides are important for some industry because it guarantees pest free. And it means easier quality control and easier possessing. It prevents many problems. It's also security for the industry to have non- organic products because organic will have lower yield. If there is too much product on the market then the price is low but they can buy from this price. But if there nothing in the market in the market then it is hard. They want more product on the market not less. Because it is hard to increase the price in the customers side. We believe so far it is almost impossible that everybody will turn organic because the problem is that organic is more expensive even if you will produce with a higher price, the operation cannot sell in the cheaper market. The price is a problem otherwise in yes in 20 years there will be way more people turning organic and then the problem is that when you need more products then you need to

import. Then there will be organic in France, organic in Spain then maybe the rules will be different, then maybe you are going to have high competition with the other countries, this can be unfair

For your farm what another attribute can you offer other than organic?

You can't really provide much more attribute more attribute for the industry because they don't want to pay more. Working very hard the only way they can sell products in a higher price is to sell directly to the customers. The best way is to get rid of everybody. This means the professors the industrial people, and just sell directly, the only way to make money is to do that way. The best way is to sell the product fresh and to the local people. We are willing to promote our product if this can increase the sales. To promote the product

This is a hypothesis that if your customers come to you and tell you that they need for example organic beetroot and would like to invest in your farm to convert it into organic. How would you respond?

It's complicated to say also because of our conditions. We would try to consider it but the problem is that you have to think about it completely because one you have one guy telling me they need organic, but after one year on the same place you need to plant different plant so you need to change completely your produce. So that would change. Then I would say at least have some trainings. Because organic means less products. You need more people to remove the weed and you can't use the machine to help. I would need to have at least minimum price to make sure there is profit for long term at least five years then it would be more training and need investment in machineries or help finance for the equipment needed related to organic farming.

What is the biggest challenge for you to convert to organic farming

The fact that you need to change a lot at once. And this is completely out of the comfort zone. We are not going to be profitable from the beginning and we are going to lose money the problem is that a lot of farms today they have a lot of debt. When you are already on debt you cannot really take any risk, because it is very possible that you cannot pay your bank anymore. A lot of people who do organic farming is because they don't care anymore because they have so much debt and this is their last try. They are taking the last risk. Otherwise if you want to do this you need a farm that is financially healthy because there you will not be paid back. The farmers are more vulnerable to risk and they need security to avoid the risk of become in debt.

Answers to your challenge: the yield of organic

You would probably still have no yield. It is very possible that the reason why the yield is not good is because of the soil but I think it would be very hard to have the yield be the same. The problem is like if you leave in seed of weed in the field and you don't put things to kill it the next year it's going to be everywhere. And that would affect the yield absolutely. There are things to replace the pesticides, there are too expensive. We have 2 people working on 80 hectors not 10 and we will not have 10 so it will still be too expensive.

Answers to your question: Financial

Then the problem is like if half of your farm will be organic. You will have to support the price quite heavily. For sure it's going to be 100-150% more. Because you lose half of your production and you have to put more input because everything is more expensive as well.

Appendix VIII

Data document 6_Transcript of interview_Farmer6

Code for Data document: **PF**

500 hector beef and cereal since 2000 100 hector farmlands 400 hector cereal. Barley, wheat etc.,

We are from an area of France where the land is not the best I would say. our yield differs with each crop. Also, we have cattle farm as well so some of the produce we have is used to fatten the cattle. My yield really depends on the year because we are small scale farmer you cannot really say that I have this much yield this year and it depends on how much you seed and in the end not everything is sold some are given to the chattels.

The people come around every so often they are pretty good with working with us because they are an organization owned by the farmers. It's quite a French system. Traditionally in France each area will have their own crop tiff. Now they have expanded and got big. The one I am currently working with do most of the south west France. they have gotten quite big in volume. They come and they take everything we produce. The prices are agreed by them let us know how much they can sell for. They are a separate entity from the farmers but they own it

Perception to conversion

The thing is at the moment we are getting a lot of subsidies from the EU and France to become organic. We have thought about it quite a bit but have turned it down, because organic for me and my dad is a good marketing. It's a good way of differentiating your product. The consumers choose a product that's different with others. In the farm industry it is hard to differentiate your potato with the potato next door. Therefore, organic is a good marketing scheme. It is very good that some people do it but for me it is just marketing. The reason why organic is so popular is because it is so easy to explain whereas the other farming technique that not necessary is less environmental healthy than organic but is harder to explain to the customers. Like minimum tillage, the legume crops basically mean we are growing our won fertilizer. But spraying from time to time is still needed. I don't really believe it is good for the environment or anything so I would only approach this in a financial point of view so if it makes sense financially to do it and if it is worth the effort and so up until now it hasn't really seemed to be worth it. The price of the product will be a lot higher which is very tempting but you have got to consider you need will produce a lot less and the quality will not be up to standards and you will lose money on the impurity there would be a lot more impurity when you cannot spray the products we are using. The cost of organic fertilizer is very high. Since the French government has been support organic a lot of people are starting to convert and organic fertilizer is quite high price at the moment. Also, we just don't really believe in it. Organic has become a trend. what we produce today is, we spray as little as we can because spraying cost money.

So, it's not worth it for me to spray a lot in the beginning. And we don't have the resource to handle 300 hectors in organic. For organic the farming technique is not necessary so healthy for the soil. Plowing for example in a few years would kill a lot of the worms and lives in the soil. All in all, we don't feel the ethical need to use organic. Our farming techniques are already optimized.

Increase cost of seed increase cost of fertilizers increase cost of pesticides less yield loss of productivity. During conversion you would get subsidies from the government but after that it could be difficult. Some people have even thought about converting just for the subsidies and then converting back. I have seen a lot of neighbors who are farming organic and you can really see the difference in the ones who are doing it properly and the ones who are doing it

We have very bad experience with contracts because we once signed a contract just before the worst harvest year ever and could not meet the volumes. We had to buy product from the market in order to meet the contract. That was a very hard year for us and now we are hesitant toward this kind of contract. The thig is that our harvest is not consistent enough to sign a contract because with the scale we have And I don't believe there is a contract saying the we will just buy the about that you produce. We don't really need technical support and we need the financial incentive to do it.

Appendix IX

Coding analysis to theme

MH	CL	LU	PM
Higher question Trend? Uncertain future Feed the world? history organic on top need efficacy need innovation save the planet natural agriculture current regulation limited organic innovation conventional natural short term consumer added value guarantee natural demand exceed offer processor act convert farmers local sourcing not only organic centralized operation challenge centralized procurement consumer wants local conversion local French apple conversion demand will increase convincing farmers volume commitment challenge: long-term outlook 5 years conversion challenge future volume outlook need action now	Business direction organic Volume and timeline challenge price consumer uncertainty organic pricing organic raw material extra cost organic product price processer cost retailer competitiveness challenge present future volume achievable current supply sufficient commitment in advance strawberry example volume commitment organic practice relationship with processer no direct relationship with farmers commitment doesn't mean payment processers pay for plant, get fruit back could be the way for organic currently sufficient in the market different with baby food no volume constraint quality is also secured uncertainty of harvest constraint organic practice risk of organic challenge of organic risky decision from farmer spray	New to position Work with processer Processor relationship Processor source Processer near production Geographic constraint Field needs processer near Base of demand Supply chain Specification Same with organic Essentially same Organic certification Difference in chain No special process Organic is not new history	Known farmer first Good relationship trust new farmers second young farmers currently in action quality first baby food standard missing French strawberry spec requirement lab test audit long but necessary recognize by network different case different crop fresh material processor price uncertainty difficult business forecast uncertainty in conversion hard to be efficient business wants now conversion needs time enough without local constraints need to double French portfolio local is difficult now be solved in the future yield decrease profitability future uncertainty organic is trend eight-year commitment first transformation work with processor future uncertainty

MH	CL	LU	PM
same as current baby food	volume established feature of fruit	shouldn't have different price	Different traceability
food regulation merge future organic=baby food	quality depends on the specification	reason of different price	Sourcing baby food
organic on top	search for suppliers	difference in yield	Difference in consumer
possible portfolio cannibalization	quality personnel	example organic more yield	Baby food restriction
different contract term	geographic search on production	organic more yield	Known suppliers
contract during and after conversion	confirm processor	assumption organic agriculture	Already established standards
long term contract	shortlist	example organic more yield	Preference to work with known partners
conversion partnership	audit	pricing	Possible sourcing current suppliers
upfront pricing	timing	uncertainty	Time constraint
less negotiation rooms	pricing	organic yield/farming practice	Difference in specification
less supplier competition	quality terms	investment on organic	Specification carefully defined
partnership crucial	payment terms and quality terms	organic can bet he normal way	Contract is same
secure volume	pricing	organic sourcing	Limited organic volume
secure quality	volume allocation	sufficient supply	Huge price difference
secure pricing	test run	more than organic	Additional constraints
direct contract fresh	only audit processer	there are enough suppliers	Organic requires local
internal motivation	farmer relationship	price is higher	Quality first
from farmer	audited	constraints links to extra attribute	Conventional without local constraint
volume secure	same sourcing	no constraint today	Local changes strategy
future anticipation: volume growth	first year	future uncertainty	Lack of French suppliers
processor relationship: frozen	sourced by supplier	uncertainty more than organic	Geographic constraint
partnership volume secure	limited volume	future need maybe need action now	Local leads to mono sourcing
partnership volume secure	sourced inhouse: blueberry		Challenge is higher risk
processer drive conversion	no sourcing constraint		Strong competition
access farmer via processor	first organic product line		Unbalanced market
same priority price/quality	with current supplier		Limited volume and high price
same criteria	no upfront commitment		Future uncertainty
organic needs partnership	need more volume		Long term commitment
secure availability	business uncertainty		Support and commitment
pricing methodology	maybe longer commitment		requirement
conventional not the case	less volume no constraint		Non- negotiable
conventional simple	work with first transformation		Organic needs local
current supplier first	current is enough		Volume needs long term contract
difficult	individual in conversion farm for future		Constraint linked to local
potential supplier second			Variety in size
longer process			Big and small for fruit
check next year availability			Mostly big for veg
conversion last			
maize example			

MH	CL	LU	PM
higher cost of organic paid in conventional	more than organic ensure sustainability	discussion started	Main volume is apple
willing to invest	social security	not direct relationship	Limited French apple
region specific	different investment than organic	enough ways to meet needs	Need to invest today
example- German farmers	insurance weather	more volume	Three-year conversion
example- French farmers	soil health	possible direct relationship	Approach: convert alone
region specific	investment beyond organic	volume	Less yield
gain efficiency	budget	less suppliers	Sell with conventional price
organic yield is lower	co funder of project	more volume to have direct relationship	High farming cost
organic yield is variable	example improve practice	focus of organic is Europe	Future uncertainty
conventional is more stable	improve yield leads to improve financial	programs technical assistance	Afraid to lose money
agricultural innovation	people investment	quality	Financial constraint
convincing farmers	means of communication	organic is farming practice	Buy in-conversion
profitability	Europe less social risk	processer have direct relationship	higher price
remain the same way	different final consumer	limited	Apple example
invest in labor	more traceability with babyhood	need to do	Compensate lost yield
region specific difficulty	conventional is not as strict	channel not yet defined	Long contract
	easier to source fruit	relationship is needed	With support farmers con move
	different product orientation	no regular touch points	Not only financial also technical
	yield depends on weather	processors have more clients	Impact of different practice
	yield difference not proven	different requirements each client	No fixed cost investment
	yield difference depends on weather	challenge with processers	Farmer need to invest a lot
	consumer willingness to pay	different interest with other clients	Low rate loan
	sustainability investments	examples differences	No direct investments
		unavoidable challenge	Crowd funding platform
			For small farmers fresh is big part
			processor handle relationship
			planning phase
			communicate through experts
			professional organizations
			expert asses the farm technical and financial
			expert define action
			collective training
			understand best practice
			individual consultant
			technical sheet

MH	CL	LU	PM
volume need buy and sell trading position need to act now possibility to trade organic difference fully organic/ partly organic organic cleaning needed more volume less price agronomist follow-up performance evaluated at harvest seeding what to seed how much to seed seeding control rotation conventional more choice	organic will be the norm organic and conventional same price not near future ready before ready the business investment for future example smart phone partnership with processers limit the investment commitment from CEO business orientation sustainability of resources long term vision company image Branding Support from shareholder Company image		French sourcing French sourcing more critical better cost long term agreement events on the farm trendy in France brand image pricing according to production cost define production cost front average 3-5 years adaptable contract price mutual margin organic now is profitable apple example small part of each business pay contract margin sustainable revenue 50/50 Stable pricing Challenge production cost Productivity cost Partnership long-term needed

LF	PF
No yield Validity questionable Cropping way Real sprit Feed the world? Industry dont like Easier for industry Simple prosess Quality guarentee Easier prosess Prevents probles Securety for volume Moer product in market Hard to increase market price Not all turn organic expensive expensive market international trade different regulation uneven competition no extra attribute price constraint direct sale higher margin sell fresh and local willingness promotion complicate	Land less good Yield differs with crop Also cattle farm Small scale How much seed Shared with cattle Partner organization Owned by farmer French system Traditionally regional now big Take all produce Price agreed by partner subsidies Turned down Good marketing Product differenciation Difficult differenciation in agriculture Difference easily explained Not less environmental impact Hard to explain Farm techniques Need to sprey Dont believe Financial is only reason Is it wort hit? Not worth it Price will bw higher

LF	PF
big change needed less yield more labor longterm minimal price training investment in machine a lot of change new not profitable in debt cant take risk need healthy financial vulnuable to risk still no yield would not change difficult weed ocntrol expensive pesticide not enough labor need a lot of support	Less yield Less quality Loose money More impurity High fertilized cost High demand of fertilizer Dont believe it Organic is a trend Already little spray Not wort hit to spray Not enough resource Farming technique not good for soil No ethical need Already optimized Increse cost lost productivity During is ok after is problem Only for the subsidies Seen the difference Bad experience with contract Unable to fulfill contract No believe is contract Only need financial support