



The road to certainty is uncertain

Uncertainties and coping strategies in the development
process of food chains which act in a niche market for
agriculture nature products

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Management of Agro-ecological Knowledge and Social Change

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I Abstract

Niche markets are markets in which products are positively differentiated by consumers, consumers are therefore willing to pay extra for those products in comparison to the bulk product. A concept named 'Nature milk' is created by the animal science group of Wageningen university because the Netherlands faces the challenge of creating more nature areas on the one hand and citizens who prefer cows in the meadow while cows are increasingly kept inside on the other hand. When dairy cows are kept in nature areas those two problems will be addressed. A niche markets for this 'Nature milk' is needed to secure a price which is stable and covers the cost.

This thesis focus on uncertainties and coping strategies in the development process of food chains which act in a niche market for agriculture nature products. The aim of the research is to find relevant lessons for the concept 'Nature Milk'. To come to those lessons 7 cases of existing food chains which have an overlap with the characteristics of the concept 'Nature Milk' were analyzed.

From the research can be concluded that actors experienced uncertainties regarding competition and suppliers involving uniqueness and quality, this especially relevant for niche markets since consumers have to distinguish products from niche markets positively in comparison to the bulk products. Furthermore interactional uncertainties played a major role because innovations involved cooperation with others, as well as within the innovation network as with individuals and organization from outside the innovation network. A last uncertainty relates to knowledge and financial resources, since actors started something new knowledge was not available and credit was difficult to obtain because of the absence of an evaluation of the product.

In relation to those uncertainties a range of coping strategies were described which were used as lessons for the concept 'Nature Milk'. In the first place actors should incorporate knowledge from a wide multi level network, by being open to new knowledge and perform network skills. Elements should be brought into new combinations which are unique and constructed by thinking outside established structures. In the second place the availability and demand should be closely balanced in which one can better have surpluses than shortages because quality is a pre condition for niche markets. An open and fair cooperation is needed in which the suppliers are willing to invest in this quality because they underline the vision of the food chain. In the third place actors should use social skills to overcome interactional uncertainties. On an internal innovation network level this involves full filling the function of a mediator, by connecting people, make use of informal conversation and steering the social process. When relating the socio-technical regime structure outside

the innovation networks social skill relating to convincing and networking are important. Boundary spanners should be used to act as broker between the innovation network and the socio-technical regime structure. Furthermore godfathers of innovation or the media can be used to put pressure on the socio-technical regime structure. A final coping strategy relates to interventions such as subsidies or support of the government or organization in knowledge development and exchange, which can be used to overcome uncertainties relating to the absence of knowledge and finance.

II Abstract in Dutch

Niche markten zijn markten waarin producten positief gedifferentieerd worden door consumenten, consumenten zijn daardoor bereid meer te betalen in vergelijking tot het standaard product. Een concept genaamd ‘Natuur Melk’ is ontwikkeld door de Dierwetenschappen groep van de Wageningen Universiteit omdat Nederland geconfronteerd wordt met het creëren van meer natuur en burger die houden van koeien in de wei terwijl deze juist meer binnen worden gehouden. Wanneer melkkoeien kunnen worden gehouden in natuur gebieden is dat een oplossing voor beide uitdagingen. Een niche markt voor de ‘Natuur Melk’ is dan nodig om een zekere en stabiele melk prijs die de kosten dekt te garanderen.

Deze scriptie focust op de onzekerheden en strategieën in het ontwikkelingsproces van ketens die producten produceren voor een niche markt in agrarische natuur producten. Het doel van het onderzoek is om relevante lessen te vinden voor het concept ‘Natuur Melk’. Om deze lessen te vinden zijn er 7 cases van bestaande ketens die een overlap hebben met de karakteristieken van ‘Natuur Melk’ geanalyseerd.

Uit het onderzoek kan worden geconcludeerd dat actoren onzekerheden ervaren aangaande competitie en toeleveranciers in relatie tot kwaliteit en uniekheid. Dit is in het bijzonder belangrijk voor niche markten omdat consumenten het product positief moeten differentiëren van het bulk product. Verder speelde interactie onzekerheden een grootte rol omdat innoveren betekend dat je moet samenwerken zowel in het innovatie netwerk als tussen het innovatie netwerk en de bestaande socio-technische regime structuur,. Een laatste onzekerheid is gerelateerd aan kennis en financiële bronnen, omdat actoren iets nieuws beginnen is kennis niet aanwezig en is credit lastig te verkrijgen omdat er geen evaluatie van het product is.

In relatie tot deze onzekerheden zijn er strategieën om de onzekerheden te omzeilen of te reduceren beschreven deze dienen als lessen voor het concept ‘Natuur melk’. In de eerste plaats moeten actoren kennis integreren van een breed multi level netwerk, door open te staan voor nieuwe kennis en personen en door te netwerken. Elementen moeten samen gebracht worden in nieuwe combinaties welke uniek zijn en tot stand komen door buiten bestaande kaders te denken. In de tweede plaats moeten vraag en aanbod goed gebalanceerd worden, waarbij er beter een overschot kan zijn dan een te kort omdat kwaliteit een rand voorwaarde is voor niche markten. Een open en eerlijke samenwerking is nodig waarbij toeleveranciers bereid zijn om te investeren in kwaliteit omdat zij zich kunnen vinden in de visie van de keten. In de derde plaats moeten actoren hun sociale vaardigheden gebruiken om interactionele onzekerheden te overkomen. Op het niveau van het innovatie netwerk relateert dit aan het invullen

van de mediator functie, door mensen aan elkaar te koppelen, gebruik te maken van informele gesprekken, en het begeleiden van het sociale proces. Op het niveau van de socio-technische regime structuur sociale vaardigheden zoals het overtuigen van mensen en netwerken zijn belangrijk. Bruggen bouwers moeten worden gebruikt om contact te leggen tussen het innovatie netwerk en de bestaande socio-technische regime structuur. Verder kan een 'Peet vader van innovatie' of de media worden gebruikt om druk te zetten op de socio-technische regime structuur. Een laatste strategie is gerelateerd aan interventies zoals subsidies of assistentie van de overheid of andere organisaties in kennis ontwikkeling of uitwisseling, dit kan gebruikt worden om onzekerheden te reduceren of te om zeilen aangaande het ontbreken van kennis of credit.

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1 Introduction

This research, on the development process of niche markets, finds its origin in a new concept developed by the animal science group named ‘Nature milk’ (Galama et al., 2008). This innovation in dairy farming is still in its development process in which there is one element central; milk is produced and cows are kept in a nature conservation area unlike common dairy farming cows are kept on agriculture land and in cowsheds.

One of the main motives for this new concept relates to a tendency in the agriculture sector, which started after the late 1980s, in which product prices decreased and costs increased (LEI, 2000). As a result returns in agriculture decreased and farmers looked for ways to lower their cost price. One of the common ways to do so was by scaling up the farm so that the fixed costs could be divided over more product units. For dairy farmers this implied that more cows were kept per farm, subsequently herds became bigger. As a consequence a growing number of dairy cows were no longer kept outside because of environmental and management factors (Pol-Dasselaar, 2005). Citizens, on the contrary, gave preference to cows in the meadow, starting from ethical and landscape considerations. As a result of this the image of the dairy sector became more often a subject of discussion (Haskell et al., 2003).

A second reason for the development of ‘Nature milk’ relates to the development of new nature conservation policies called the Ecological Main Structure and Natura 2000. Those policies aim at creating a network of nature throughout respectively the Netherlands and Europe and were introduced by the ministry of agriculture, nature and food safety (Dutch acronym LNV). In order to realize this network of nature conservation areas more (agricultural) land had to be used for nature conservation. In nature conservation areas in the Netherlands open fields and cattle is qualified as typical in the landscape. Furthermore the cattle assists in keeping the field open and were considered a labor saving factor in this respect. This also relates to biodiversity, for example, open fields are very important for certain birds species. Thus extensive farming provides conditions and opportunities to maintain and increase biodiversity and has a positive effect on nature conservation (Brak et al., 2004).

Up until now beef cattle were mostly kept in nature conservation areas because beef cattle is suitable for extensive grazing. However, the profits on beef cattle are lower than the profits on dairy cows (Galama et al., 2008), thus it would be more profitable

to keep dairy cattle in nature conservation areas. Yet there was a major hindrance when keeping dairy cows in nature conservation areas: Nature areas ask for rather extensive grazing which would imply that a relatively extended area is needed. This is troublesome for dairy cows because dairy cows are milked every day and night in a cowshed. The distance to this cowshed would become too big to walk to it twice a day. The animal science group developed a solution for that problem by creating a mobile automatic milking system (Galama et al., 2008). This MAMS can travel along with the cattle. At this stage of the development process the MAMS is tested.

Now when it seemed technical achievable to milk cows in a nature conservation area another challenge had to be faced by the developers. This challenge related to the question if it were financial achievable to milk dairy cattle in a nature conservation area. Calculations by the animal science group showed that dairy cattle will be more profitable when kept in a nature area in comparison to beef cattle (Galama et al., 2008). This can be explained by the difference in revenues between dairy cattle and beef cattle in general. Nevertheless those calculations were very determined by the milk price which strongly effects the income of the farmer. The European agriculture is drastically changing, the quota which limited growth of dairy farmers and therefore limited over production will disappear in the near future. Prospects, regarding the reform of the European agriculture, showed a decrease of income for dairy farmers and more fluctuations in feed and milk prices (Daatselaar et al., 2007). To ensure a high and stable milk price a special label for milk produced in nature areas should be established. How and by whom this niche market should be created is not defined yet.

1.1 Problem Statement

In theory the new concept in which dairy farmers operate in nature conservation areas is technically and economically feasible. However, the concept can only become a success when the milk produced in those nature areas is sold for a price which is stable and covers the cost. A so called niche market could provide this price. In order to create a food chain which act in this niche market a network of chain partners should be established. However this road to certainty is uncertain. Former research on changing or establishing food chains showed that this innovation process brings along all kinds of challenges with which actors need to cope (Wiskerke and Roep, 2007; Klerkx et al., 2010). Therefore this research investigates the implications which were found within other related niche markets and connect them to the concept 'Nature Milk' so that relevant lessons can be learned and can be incorporated in the further development and realization of the concept.

1.2 Thesis Outline

This study aimed to find lessons learned within uncertainties and coping strategies of food chains acting in a niche market for agriculture nature products. In this first chapter an introduction to the subject matter and the problems statement have been described. In the next chapter the analytical framework is presented that allows to be organized in a way that it can be used to answer the research questions which are presented in chapter three. In chapter four the research design and methods are described. In the following chapter the results of case studies are given. In chapter 6 a discussion on the findings and the methods is presented. And the last chapter contains the conclusions, as well as the recommendations.

2 Theoretical Framework:

In this paragraph the theoretical framework, which functioned as a guide during the research, is described. The most important concepts in relation to food chains and niche markets are expound and connected to relevant theories by this a focus was found to study food chains which act in a niche markets for agriculture nature products.

2.1 The Concept of Niche Markets

Niche markets can be found in all types of markets, for example when one buys toothpaste one can choose besides just standard toothpaste, toothpaste with herbs, toothpaste especially made for children, toothpaste with certain health advantages and so forth. However, this thesis will focus on niche markets within the food market. As whole food markets are differentiated on the basis of quality criteria. Niche markets in the context of this research are defined as a part of a food market in which the production chain and the product produced are differentiated positively by consumers compared to the standard or bulk product. For example by the commoditization of local culture (Bessiere, 1998; Tregear, 1998; van der Ploeg and Long, 1994), in linking products to ‘cultural markers’ or local images such as landscape, cultural traditions and historic monuments their value can be enhanced because consumers come to identify certain products with specific places (Ilbery and Kneafsey, 1999).

According to Ilbery and Kneafsey (1999) actors influencing the niche markets are categorized as; producers, institutions and consumers. The different actors operate in different so called arenas (Lowe et al., 1993).

Producers in this respect not only relate to primary producers but also to the middle man, retailers and other producers who are involved in the production process. Producers operate within a market arena which is a complex business environment. This environment is influenced by the interplay of global process of the agro food industry, local institutions and consumers responses (Goodman and Watts, 1997; Marsden and Arce, 1995). For example Dutch dairy farmers produce for a price which is constructed on a global level and have to respond to institutional arrangements on food quality on a local level.

Institutions on the other hand operate within an arena of legislations. Institutions in the context of niche markets within the food market can be described as having the attempt to help producers to sell their products and at the same time give guarantees to consumers regarding product quality.

The third set of actors are consumers. Consumers decide how they spend their money every day. Consumers' behavior is established within the life style arena. This lifestyle arena is influenced by all kind of factors e.g. the media.

Because the conditions of the niche market influence the production process it is a necessity that the actors connect to each other and co-operate dynamically. These co-operations take place within the food chain which starts off with the production of a product and ends by the consumption of it. Therefore the food chain represents not only a technical process but also a social network including a social process.

2.2 The Multi level perspective on Transitions

Given the complex interaction within social networks and processes between many actors within food chains a comprehensive perspective to innovation is needed to understand innovation in those food chains. An approach which provides such a comprehensive perspective on how innovations and transition processes are established is **the multi level approach** (MLP). This approach does so by looking at the interaction between the innovation process and the established socio-technical regime which is situated in a broader environment. The key point of the multi-level perspective is that system innovations come about through the interplay between processes at different levels in different phases (Geels and Kemp, 2007). MLP is derived from evolutionary economics and sociology of technology (Rip and Kemp, 1998; Geels, 2002) and contains three levels; landscape, regime and niche.

The landscape represents the external environment of processes and factors that influence both regimes and niches (Markard and Truffel, 2008). It includes long term macro level events such as the effects of global warming on a certain innovation trajectory.

The socio-technical regime forms the regime level in MLP. It exists of a coherent, highly interrelated and stable structure characterized by established products and technologies, stocks of knowledge, user practices, expectations, norms, regulations, etc (Geels, 2005). This socio-technical regime in agriculture exists out of an intertwined productivist network of policies, scientific research, interest promotion, production and processing routines, artifacts and farming practices (van der Ploeg,

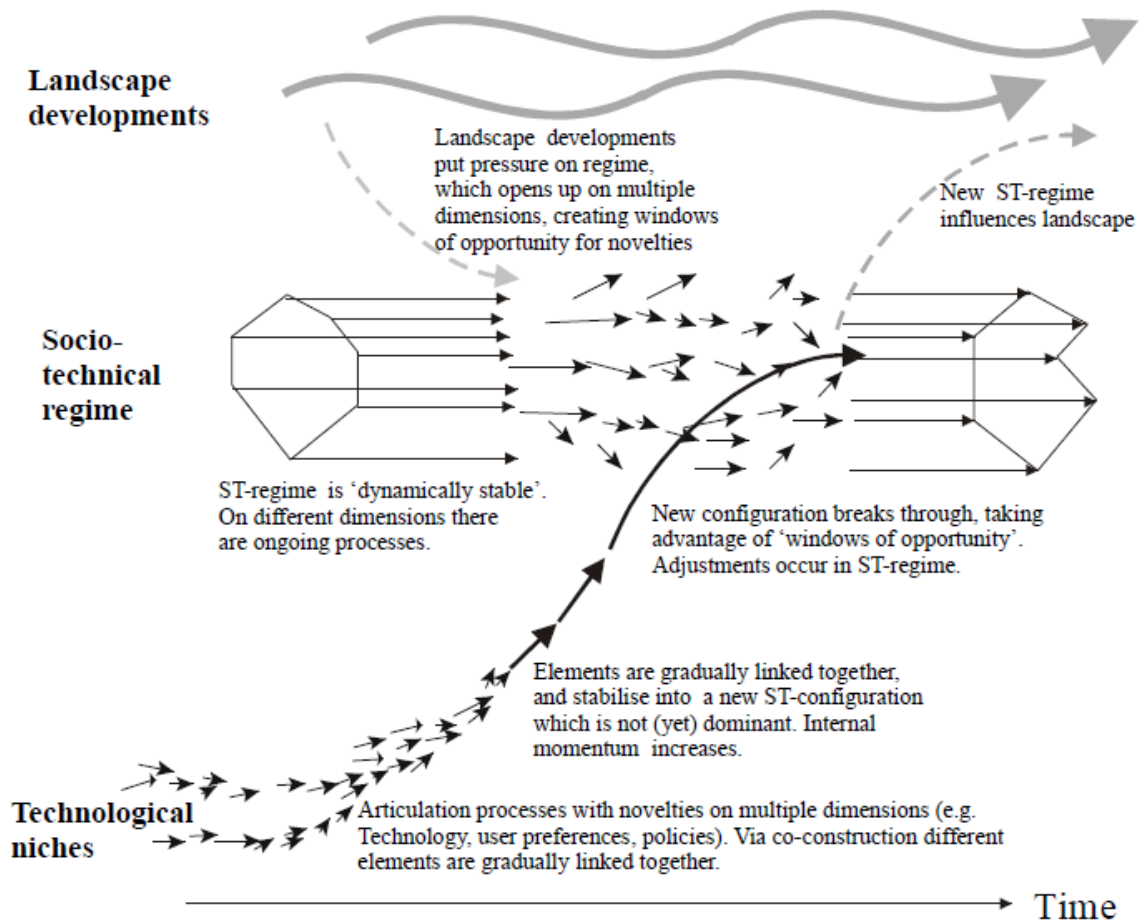
2003). This network is particular relevant for the agro-food sector because of the decades of modernization in which the capacity was built and institutionalized to make the whole agro-food system work. However, building the capacity to make the whole work specifically also implies a (latent) incapacity to have the whole work differently (Wiskerke and Roep, 2007).

The third level is the level of the niche. Niches represent the local level of the innovation process and is commonly referred to as protected spaces or incubation rooms, in which new technologies or socio-technical practices emerge and develop isolated from the selection pressures of 'normal' markets or socio-technical regimes (Kemp et al., 1998). Protection comes from small networks of actors who are willing to invest in the development of new technologies. There are two types of niches, market niches and technology niches. In the case of market niches, particular selection criteria have emerged, e.g. due to particular application contexts or consumer preferences that significantly deviate from 'usual' contexts or practices. Market niches, in other words, can be seen as some kind of 'natural anomalies' in socio-technical regimes. Technology niches on the other hand are deliberately created by actors and are supported by specific institutions (e.g. Geels, 2005b). This research focus on niche markets and will therefore relate to the market niche when referring to niche in the multi-level approach.

2.3 Moving towards a Micro level perspective within MLP

Although attention has been paid in MLP literature on interaction, it takes a rather global view and is often used for research which takes a more overall perspective to understand innovation by using a dominant analytical focus on regime and landscape level structures and processes (Geels and Schot, 2007; Geels and Verbong, 2006). This research focus on rather small scale local innovations with an emphasizes on actor behavior in market niches, which are illustrated in figure 1 as technological niches. Instead of focusing on the behavior of coherent technological niches, the focus is on separated niches and the actors behavior in those niches. A micro perspective is therefore used instead of perspective of MLP. Because of the micro perspective in this research an **actor oriented approach** is used. MLP will be used to grasp the complexity of innovation processes by providing structure in the different levels which are involved in innovation processes.

Figure 2A dynamic multi level perspective on innovation (adapted from Geels, 2002)



2.4 Characteristics of Innovators and Agency

In this thesis the focus is on bottom up change processes in which someone at some point needs to take initiative. Most of the time there is an entrepreneur who has the nerve and ambition to do something new (de Lauwere et al., 2006). In this chapter the characteristics and agency capacity in relation to innovation is described.

2.4.1 Characteristics of Innovators

Innovation actors need certain competences for innovation. A study which focused on the behavior of innovative entrepreneurs was done by van de Ham en Ypma (2000) who analyzed a group of 18 innovative entrepreneurs who started an innovative

multifunctional project on their farms. The research resulted in the following outcomes:

Innovative entrepreneurs:

- have good social and organizational competences
- are creative
- are able to motivate people
- are able to judge people
- are able to handle uncertainties
- are solution oriented
- approach new situations as an challenge
- are able to think critically, outside established structures

In literature on agriculture transition and innovation processes, authors also described competences and characteristics of innovative actors. Horlings (2008) for example explained the capability to switch between different roles and act on different levels which enables an innovator to involve wide range of people and organizations in the innovation process. Another issue described by Horlings (2008) is the ability to act and think outside established structures which will help actors to come up with new combinations of known elements. Another often mentioned characteristic or driving force is the vision and ambition of innovating actors (Horlings, 2008; Klerkx et al., 2010; Wiskerke and Roep, 2007). Those visions have a guiding, convincing, binding and an uncertainty mitigating function (Klerkx et al., 2010).

The above mentioned competences will support actors in mobilizing allies who will help and support the innovation project.

2.4.2 Agency in Innovation Processes

An important concept in relation to creating support is ‘agency’. Wiskerke and Roep (2007) describe agency as follows ‘Agency is understood as the capacity to anticipate opportunities (local as well as wider societal change) and create opportunities (by connecting different levels, mobilizing different resources, aligning, or creating space for experiments and learning), to create new interlinkages between a wide range of heterogeneous elements (human as well as no-human, social as well as material) into a configuration that works, considering that this enrolment needs to be carefully balanced and negotiated’. Thus agency relates to the restructuring of elements and the capacity of actors to do so. In the context of innovation, ‘innovation agency’ is

determined by the resources and competences that an actor of organization has at its disposal for innovation (Klerkx et al., 2010).

Actors need allies because innovation cannot be accomplished by individuals therefore actors operate in networks (Klerkx et al., 2010; de Lauwere et al., 2006; Horlings, 2008; Wiskerke and Roep, 2007). Those so-called innovation networks are established by actors who articulate visions and expectations to create a supporting network of (new) alliances willing to commit themselves to a particular and promising route in order to mobilize the necessary resources (technical, political, financial, institutional, ecological and symbolical) for constructing a novel configuration that works (Rip & Kemp, 1998).

In the context of connecting the innovation network with its environment networking plays a central role because it is important to include people and organizations who have essential knowledge or influence power. Innovative actors have often a 'multi level network' in which they can switch between practical, policy and scientific level and between, local, provincial and national level (Horlings, 2008).

The innovation networks and the networks outside those innovation networks are of great importance when innovation actors try to accomplish their innovation goals because innovation actors are confronted with all kinds of hindrances with which they have to cope by using their characteristics, innovation network and their external network.

2.5 Uncertainties and Coping Strategies

Starting something new indirectly means (partly) not knowing which outcomes it will have, not only for the developers themselves but also for their environment. Therefore innovation actors are confronted with all kind of uncertainties when innovating (Meijer et al., 2006). The challenge in innovation is therefore to avoid or overcome uncertainties by performing so called coping strategies.

2.5.1 Uncertainties

Meijer (2006) identifies six types of uncertainties regarding socio-technical transformations. They will shortly be introduced illustrated by examples which are distilled from literature in which agriculture innovation and transition processes are analyzed.

- Technological uncertainties

Uncertainties regarding technologies can be on the capacity of the technology which is developed. Because the technology is new and not used yet the experience with the new technology are limited and therefore a proper evaluation of the technology is difficult to make, newly introduced techniques therefore can arouse suspicion because they did not satisfy the users' expectations (de Lauwere et al., 2006). But uncertainties on technologies do not only exist about the technological which is internal to the development process, they can also involve technological interactions with external technological infrastructures. For example if developers introduce a new kind of lamp, the lamp itself can work perfectly fine. The uncertainty could be that most households have a different type of lamp holders, and they are uncertain if consumers are willing to switch over to this new lamp holder. A last type of technological uncertainty is the uncertainty about alternative technological options. Often there is a competition between old and new technologies but also between different kinds of new technologies.

- Resource uncertainty

Resource uncertainties contain uncertainties on the resources needed for the innovation. This includes different types of resources such as raw material, human or financial resources. The uncertainties are caused by the inability to make accurate forecasts. For example human resources relate to the availability of knowledge and skills to carry out the innovation project. It is important to ask questions such as if there is needed any external knowledge or coaching? And if it is needed, is there knowledge available on the issue? Financial resource uncertainty included questions such as how much money should be invested in the project? And who should finance it in the first place?

Different authors described also resource uncertainty regarding finance. Klerkx et al. (2010) described a financial resource uncertainty relating to bank institutions which had problems financing the project, because of the uncertainties on risks and returns.

- Competitive uncertainty

Competitive uncertainties can be found in the uncertainty about how possible competitors will act. Competitive uncertainty does include uncertainties about the strategy of competitors and uncertainties on the effect those strategies will have. The Lauwere et al. (2006) also found that competitors uncertainty is a major issue in agri-food innovations.

- Supplier uncertainty

Uncertainties relating to suppliers include the uncertainties of price and quality. For example in the case of a fruit store the quality of products delivered by the supplier is great importance. Examples in the food industry can be found in difficulties to keep up with demand or the willingness of suppliers to change their production process (Lauwere et al., 2006)

- Consumer uncertainty

In the first place uncertainty can arise from consumers preferences. What expectations regarding product characteristics such as price, quality etc. will consumers have? In the second place there is uncertainty about the consumer characteristics. A certain amount of knowledge of the characteristics of the consumers is needed to enable the innovators to estimate the usefulness of an innovation. For example if one want to innovate dairy products it is very important to know how often consumers consume dairy and what kind of dairy. In third place consumer uncertainty refers to the development of demand. This includes some macro developments such as population growth or the state of the trade.

Some consumers uncertainty in agri-food innovations are certification issues and also uncertainty about consumer preferences (Klerkx et al., 2010; de Lauwere et al., 2006).

- Political uncertainty

Political uncertainty relates to uncertainty about governmental behavior and policies. There are different types of political uncertainty.

As a start political uncertainty relates to current policy. For example if a new manure technology is invented it is important to acquaint oneself with policies on manure and what effect it has. A second political uncertainty can be an uncertainty about the clearness or inconsistency of policies. It is not clear then how the policy should be interpreted or different levels of authorities come up with contradicting policies. A third political uncertainty is on the lack of regulations. Especially if it comes to new developments, new regulations may be needed. The fourth political uncertainty is on the future changes of regulations and legislations. A last political uncertainty is about the governmental behavior. Politics in general have a climate which can be considered uncertain because they do not always act as they say they do.

Political uncertainties in relation to agri-food innovation relate to future changes such as official acknowledgement of certain housing systems (lack of regulation), that farmers loss trust because of ever changing legislation (governmental behavior) or on

how certain legislation frustrate the innovation process (current policies). (Wiskerke and Roep, 2007; de Lauwere et al., 2006; Klerkx et al., 2010).

2.5.2 Coping Strategies

The above described uncertainties need to be avoided or overcome in order to make the change process a success. In this section coping strategies which can help to reduce or overcome uncertainties will shortly be discussed.

2.5.2.1 Actor related coping strategies

Actor related coping strategies refer to coping strategies which are initiated by actors as opposite to interventions which are organized by outsiders of the innovation network. The characteristics of actors, to which attention is paid in section 2.4, play an enormous role in the actor related coping strategies since actors use their to characteristics to perform those coping strategies. Because characteristics are sometimes similar to coping strategies (e.g. good communicative skills, and the coping strategy of open communication) they can be considered the same in certain examples.

- Learning within innovation systems

From other research it is known that learning processes play an important role when coping with uncertainties (de Lauwere et al., 2006; Klerkx et al., 2010; Horlings 2008). Within innovation networks actors need to learn about the background, vision and ideas of other innovation actors to come within the reach of congruent and understanding of the situation. In the process of learning and negotiating keywords such as trust and power are essential (Vermunt et al., 2003)

Aarts and van Woerkom (2002) describe different strategies to deal with uncertainties relating to negotiation and learning. I selected the strategies which were applicable for this research.

Revaluing informal conversations for sustaining formal negotiations

In order to get a relationship in which trust, creativity and an open mind are present it is important to invest in informal conversations. Decisions are not made and nothing is written down. Oral conversations without engagement offer room and safety for experimenting, creativity and timing. By exchanging (personal) stories mutual trust can be developed which is an important factor in cooperation. Horlings (2008) as well as Klerkx et al. (2010) emphasized that informal conversation can play an important factor in creating stable innovation networks because informal conversation gives

space to a more free way of speaking in which risks and difficulties are easier discussed.

Selecting participants that are 'uncertain oriented'

Sorrentino and Roney (1999) made distinction between people who view uncertainty as a challenge (the uncertainty oriented) and people who avoid uncertainty (the certainty oriented). Research showed great differences between the two groups for example in situations of uncertainty, certainty oriented people make much more use of strategies such as stereotyping than uncertainty oriented people (Sorrentino and Roney 1999). It could be more interesting to invite a rather uncertainty oriented person into a change process because those people are more open minded to innovation.

- Knowledge exchange

Some uncertainties can be reduced or overcome by knowledge gathering and exchange. Horlings (2008) describes how actors try to cope with knowledge by incorporating a multilevel network of people. And de Lauwere et al. (2006) also describes the importance of networking because innovation is often the recombination of already existing elements which had to be discovered by knowledge exchange.

- Boundary spanners and Godfathers of innovation

The socio-technical regime structure can give cause to uncertainty (see section 2.5.1). Therefore the innovation needs to be pushed into the socio-technical regime structure. Actors use different types of coping strategies to accelerate this process. Horlings (2008) for example describes the inclusion of powerful people as a strategy which can help to open doors which otherwise would remain closed. Klerkx et al. (2010) explains this by the concepts of boundary spanners. An important outcome of the research done by Klerkx et al. (2010) is that innovation networks may support their efforts by using different types of boundary spanning actors to defend and advocate their interests, broke new contacts, and mediate in case of conflict. Another term, used by Smith (2007), is godfathers of innovation, which relate to the support of a highly respected, senior figure. When those godfathers of innovation show their support for the innovation their followers will diminish resistance. This can be of great importance for the success of the innovation when for example the support of the whole organization is needed. Another strategy to push the innovation described by Horlings (2008) relates to using the media to put pressure on the existing socio-technical regime structure.

- Connect the innovation to the socio-technical regime structure

Another coping strategy used by innovation actors is that they try to connect their innovation to the conditions imposed by the socio-technical regime structure (Klerkx et al., 2010; Horlings, 2008). Klerkx et al. (2010) for example describes a case in which a new hen housing system is introduced, for hen housing certain conditions are imposed, by making the new hen housing fit those conditions the permits were obtained..

2.5.2.2 Interventions

Actors can avoid or overcome uncertainties themselves but they can also be supported by intervention which they receive from institutions which act in the environment of the innovation network. De Lauwere et al. (2006) talks about three types of interventions which can help to reduce uncertainty.

- Financial support

Financial support can be found in for example subsidies. If entrepreneurs experience a great risk in financing the innovation project, support from the government or another organization can help to overcome this uncertainty.

- Knowledge development

A second type of intervention is knowledge development and exchange, the government or an organization can stimulate this (financial or organizational). Examples can be found in subsidizing research or organizing meetings in which knowledge can be shared. Wiskerke and Roep (2007) described the use of a foundation which stimulates knowledge development in innovation processes. And also Horlings (2008) described the importance of knowledge exchange and development by involving knowledge institutes such as Wageningen university.

- Legislation and regulations

Often legislations and regulations are seen as an obstacle instead of an intervention to support innovation (see section 2.5.1). But certain changes in legislation and regulations create space in which actors can move freely and change easier. Horlings (2008) described in one of her cases that the municipality was being supportive which she categorized as an aspect which was stimulating the innovation project.

- Investing in effective mediators

Because of the social process which comes along with learning and negotiating different authors stress the importance of a mediator (Klerkx et al., 2010; Aarts and van Woerkom 2002; de Lauwere et al., 2010). In relation to creating of situation where there is space for learning the mediator can assist and stimulate within the

dynamic process in which social processes are ever changing. The concept innovation brokers which Klerkx uses can be interpreted as fulfilling the mediator function by in vision formulation and reformulation, continuous network formation and adaptation, and facilitation of multi-stakeholder interaction by means of network coordination and mediation (Klerkx and Leeuwis, 2009). An independent mediator can help to recognize uncertainties and get them on the table. Professional mediators have different tasks such as (Aarts and van Woerkom 2002);

- Organizing, temporizing and synchronizing the process
- Facilitating negotiations
- Trying to make explicit the implicit assumptions

3 Research goal and Research questions

In this research the focus is on uncertainties and coping strategies in the development process of food chains which act in niche markets for agriculture nature products. The aim of research is to come up with recommendation for the further development of a food chain and a niche markets for the concept 'Nature Milk', the general research question is thus:

Which lessons regarding uncertainties and coping strategies can be learned from food chains which act in niche markets for agriculture nature products for the concept 'Nature Milk'

The specific research questions helped me in structuring the different knowledge elements within this thesis and are formulated as follows:

What are important elements of a food chain and a niche market for 'Nature Milk'?

- How is the food chain for 'Nature Milk' envisioned?
- What are the most important elements of the concept 'Nature Milk'?

Which experiences regarding uncertainties during the development process of the food chain did actors have?

- Which technological uncertainties?
- Which recourse uncertainties?
- Which competitive uncertainties?
- Which supplier uncertainties?
- Which consumer uncertainties?
- Which political uncertainties?

Which experience regarding coping strategies did actors have?

- Which experiences did actors have involving actor related coping strategies
 - How were learning processes used?
 - How was knowledge obtained?
 - How was the innovation pushed into the socio-technical regime structure?
 - How was the innovation connected to the socio-technical regime structure?

- Which experiences did actors have regarding interventions?
 - How did financial support play a role?
 - How did knowledge development play a role?
 - How did legislation and regulation play a role?
 - How did an objective mediator play a role?

Which recommendation can be made in regarding the further development the concept 'Nature Milk'?

- Which uncertainties will be applicable for a niche market for nature milk?
- Which coping strategies will be applicable for a niche market for nature milk?

4 Research design and Methods

In this chapter the research design is presented. Furthermore the methods which were used when the research was executed are described.

4.1 Research Design

The approach used for this research was a **case study approach**, through which I tried to get an in-depth insight in the different cases so that it became clear why certain uncertainties and coping strategies were experienced and used by actors.

The interviews were carried out in a **semi structured** manner. There was a focus on certain topics but the exact questions were not formulated. This provided a open basis so that all kind of issues, also ones which were not thought of in advance, were discussed. Semi-structured interviews are a suitable method for researching the motivations, attitudes and values about a given theme (Straus and Corbin 1998; Peter et al., 2000) and have been successfully used with farmers (Busck, 2002; Burton 2004).

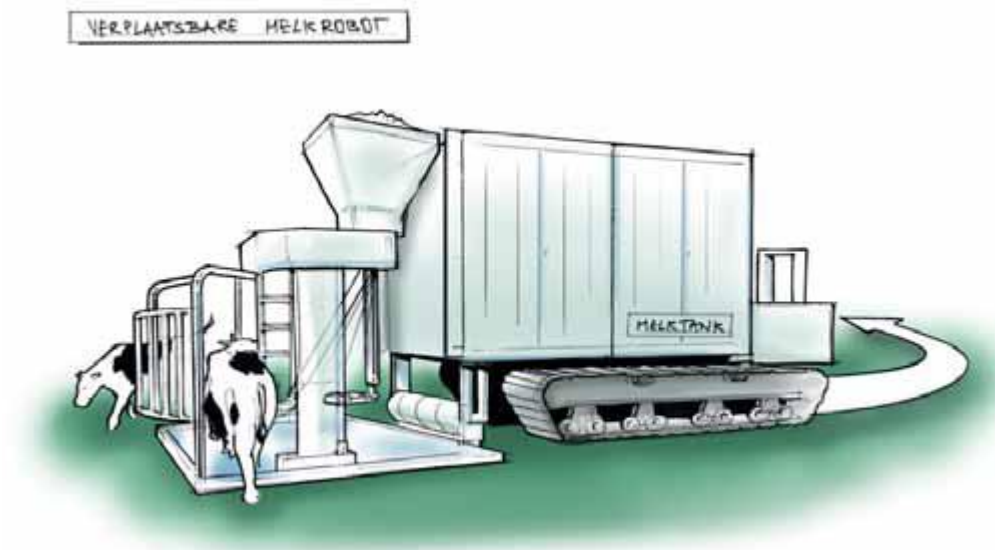
Another form of interviewing was used, called the **life history approach** in which informants explain their history in relation to a certain topic. The life history approach is based on narratives about one's life or relevant parts thereof (Bertaux, 1984). In this research the focus was on food chains which act in niche markets of agriculture nature products and their development process. The life history approach was therefore not used to ask about the lives of the food chain actors but to ask about the 'life history' of the food chain. By asking 'how it all started....' actors felt free to talk. The life history approach proved to be very useful for studying food chains because it gave the opportunity to ask about the development process of the food chain in time and it gave people a very open atmosphere in which emotions and personal issues were easily discussed.

4.2 Setting the Scene, the case 'Nature Milk'

Because this study aims to contribute to developing relevant insides for the further development for the concept 'Nature Milk', relevant cases needed to be selected to find insides with which a projection could be made. Therefore an explorative interview was done to define certain criteria. In this chapter some background on this concept is given and the main development criteria of the concept are presented.

In the introduction it is explained that, because of nature conservation policies, citizens preferences on keeping cows in the fields and the positives effects on biodiversity and labor saving issues, it is option to keep dairy cows in nature areas. Furthermore it was stated that it is profitable, under certain conditions, to keep dairy cows in nature areas (Galama et al., 2008). When dairy cows are kept in a nature area a mobile milk system is needed because of the big distances, caused by the fact that nature areas ask for rather extensive grazing which would imply a relatively extended areas in which dairy cows had to walk big distances to the cowshed in order to get milked. An mobile automatic milk system (MAMS), see illustration 1, could be an solution for this problem and is developed and tested by the animal science group, (Galama et al., 2008). Currently the MAMS is tested on a dairy farm owned by the Wageningen University. Although some further research is needed on specific technical factors such as the number of cows per day, and graze schemes, the MAMS seems to make it technical achievable to keep dairy cattle in nature conservation (Galema et al., 2008)

Illustration 1: Drawing of the automatic milk system (adapted from Galama et al., 2008)



Frank Lenssick was one of the first if not the first person who came up with the idea of milking cows in nature areas. As described in the introduction, milk from nature areas should be sold in a niche market to secure a relative stable price and a price which covers the costs. At this moment nature milk is not on the commercial market yet, but several initiatives are working on the concept.

A focus on particular products, markets and regions is required to gain a holistic understanding of the complex and contested network relationships through which niche markets are constructed (Ilbery and Kneafsey, 1999). Therefore Frank Lenssinck overall vision provides the starting point from which cases were selected and which will form the basis for recommendation regarding a food chain and niche market for 'Nature Milk'. The most important criteria for a food chain and niche market for nature milk were described by Frank Lenssinck the following:

- Cows should be milked in nature areas, preferably cows which originate from a typical Dutch breed and move around in a nature area.
- The whole chain should be very pure and real, because of the transparency nowadays, one cannot longer fool around with consumers.
- The chain partners should cooperate on the basis of equality in which profits, expenditures and responsibilities are shared amongst the chain partners.

The cases which were selected relate to the above mentioned criteria, and are described as agriculture nature products.

4.3 Method

After the pilot interview with Frank Lenssinck, 7 cases were selected. The intention was to do 4 or 5 cases but because of the possibility that some case were not willing or able to join the research, the decision was made to focus on 7 cases in the first place. Finally, all cases added useful information and are described and analyzed in this thesis. The actors of the food chains were interviewed about the uncertainties they experienced and coping strategies they used during the setup and development period of the food chains. Questions about the start up of the food chain and the implications which were faced while developing and improving it, formed the basis of the interviews. As a starting point the actor who had taken the initiative to development the food chain was interviewed. Subsequently one or two other actors were interviewed which provided another perspective on the situation so that the internal validity was strengthened.

Finally uncertainties and coping strategies were distilled from the cases by using coding. This resulted in an overview of uncertainties and coping strategies which were important for this type of food chain and niche markets. Subsequently the results discussed by making a reflection on relevant agri-food literature. By doing so I found differences and similarities which provided a basis to give recommendations for the development of a food chain for the concept 'Nature Milk'.

4.4 Unit of Analysis

Attention in this research is paid to uncertainties in innovation processes and how actors found strategies to realize their innovation goals. Thus not the interaction itself was analyzed as such but the uncertainties and strategies used by innovation actors in interaction in the innovation network or interaction between the innovation network and the socio-technical regime structure. In case studies designs one can make a distinction between the case as a whole and elements within the case (de Vause, 2001). Yin (1989) uses the terms ‘holistic’ and ‘embedded’ design to refer to this distinction. If a holistic design was used, the research would have focused on the food chains as a whole. However an embedded design was chosen and therefore the focus was on embedded elements of the food chain, the food chain actors.

4.5 Sample

Case studies are not the basis for statistical generalization to a wider sample, they are designed to help develop, refine and test theory. The need is to find cases that provide valid and challenging tests for theory (de Vaus, 2001). Hakim (1986) used the term ‘focussed sampling’ to describe the strategy of selecting cases that will provide illuminating examples of a type of case, or that will provide appropriate tests for theory. This strategic selection of cases involves selecting cases because they have particular characteristics. To define a valid definition of agriculture nature products Frank Lenssink was interviewed (see section 4,2). His interpretation of a food chain and a niche market for ‘Nature Milk’ led to the selection of cases in which an overlap was found with ‘Nature Milk’ as defined by Frank. Through the analyzes of uncertainties and coping strategies in food chains for agriculture nature products, theory on innovation and transitions processes was refined. Thus not the cases itself were used to generalize but the reflection on the results formed the basis for a theoretical generalization which was used to give the recommendations for the further development of the concept ‘Nature Milk’.

Because Frank Lenssink interpreted a food chain for ‘Nature Milk’ using different criteria (see section 4,2), a selection of cases was made in which at least one of those criteria was present.

The sample consisted of 7 cases. First the person who could be considered as the pathfinder of the food chain was interviewed. Besides this pathfinder one or two other actors who were involved in the food chain were interviewed.

In the next table an overview of the different cases is given.

Table 1: Overview of cases analyzed

Case	Number of interviews	Reason case selected
Ecoloar	2	<ul style="list-style-type: none">• Pure and transparent• Nature image
Puur Natuur	3	<ul style="list-style-type: none">• Nature image
Tupker	1	<ul style="list-style-type: none">• Nature image
Zuivel Natuur	1	<ul style="list-style-type: none">• Nature image• Pure and transparent
Waterlands Weelde	3	<ul style="list-style-type: none">• Cooperation actors food chain• Nature image• Pure and transparent
Scharrel varken	3	<ul style="list-style-type: none">• Pure and transparent• Nature image
Blaarkoppen merk	3	<ul style="list-style-type: none">• Cooperation actors food chain• Pure and transparent• Nature image

4.6 Internal and External validity

Case studies are known for internal validity (de Vaus, 2001) because case study designs are devised to yield a sensible, plausible account of events and in this way achieve internal validity. In this research the internal validity was increased by doing more interviews per case. This type of triangulation helps to check whether different actors within the same case interpret the situations similar, and by doing so a better understanding of the case can be reached.

As described in section 4.5, case studies are not used for statistical generalization but for theoretical generalization. The external validity of case studies is increased by the strategic selection of cases (de Vaus, 2001). In this research the selection of the cases is done through an investigation of the characteristics of the cases. This case screening of cases was done by using the internet and a small introduction given by the pathfinder by e-mail or telephone.

5 Results

5.1 Introduction

In this chapter the results of the interviews done during the fieldwork are presented. After a general description of the case, two or three main uncertainties which played an important role in that particular case are described. Some uncertainties are mainly applicable for the start up phase, others were an uncertainty then but are still point of discussion now. Subsequently the coping strategies actors have used to overcome or avoid those uncertainties and the characteristics which were needed to perform those coping strategies are described.

5.2 Case 1: Ecoloar

The Ecoloar is an ecological farm shop which is located close to Zwolle and is owned by Andre and Tonny Mulder. The family also owns a dairy farm which is located at the same farmyard as the shop. Both Andre and tonny were interviewed.

Andres ideas of practicing a more sustainable way of farming originate from a workshop of the church about subjects relating to world peace and sustainability. At those workshops Andre got inspired about world problems and possible answers to those world problems. Ecological farming was not as common as it is now but the family Mulder were convinced that the ecological farming was far more sustainable and decided therefore to switch over.

Changing the whole farming system from a conventional way of farming to an ecological way of farming was an enormous change. The family is known for their innovativeness and inspired way of working. They were entitled as most inspiring biological farm by 'Biologica'; a platform for organic agriculture.

Table 2: Summary of Ecoloar case

Uncertainties regarding:	Coping strategies	Characteristics of Actors
<p>-Recourse/supplier/consumer uncertainty: the development of the shop (capacities, consumer preferences, finding suppliers) -Supplier uncertainty: The SKAL certification; whether the butcher and feed company could be convinced to switch over -Supplier uncertainty Wholesaler only purchases big amount of products</p>	<p>-Subsidy for modernization farm -Knowledge development by workshops -Financial support butcher and feed company -Taking small steps and calculate risks -Not only take but also doing something without getting anything in return -Staying financial independent</p>	<p>-Actively looking for and being open to new knowledge -Having faith in own practices. -Think outside established structures. -Make deliberated choices about which activities fit their lifestyle (in time, and in preferences) -Being open to contact with people in general such as, colleagues or the press -Being optimistic</p>

5.2.1 Uncertainties

Although the family Mulder were very convinced about the ecological way of farming, it still entailed all kind of uncertainties. Both Andre en Tonny had no experiences with owning a shop or practicing ecological farming and were uncertainties about technical issues regarding the shop and consumer preferences in relation to the ecological food they provided.

Another major uncertainty which the family Mulder experienced when starting their ecological farm related to the SKAL certification. Although the farm itself had no problems in receiving this certificate, it appeared hard to find suppliers which were SKAL certified. The ecological hallmark can only be used when all chain partners have this SKAL certification. The slaughterer was not SKAL certificated and was not that convinced about it that he wanted to switch directly.

5.2.2 Coping Strategy

The first strategy which helped to overcome this uncertainty relates to a step by step approach. Family Mulder emphasized that the changes of their farm and the shop were reached by taking small steps. This made that they could stay financial independent and had the chance to try out new things and refine when needed. The shop for example started rather small, just some freezers in a small side room of the house and grew gradually to a professional shop with a rather broad assortment of ecological products.

The second strategy relates to the way chances are found and used. Andre visited a lot of meetings and congresses about innovative sustainable farming methods, practices and approaches. During those meetings Andre met all kinds of people who brought

him new ideas and knowledge. It also brought him into contact with new people and organizations which could be used for new forms of cooperation.

A third strategy can be attributed to a fund the family Mulder got from 'Stimulants'; an organization which acts between farmers and the government. This fund included workshops on customers treatments, and it partly financed a redecoration of the farm yard. For example they created a cow, made of roof tiles on the roof of a stable, this is now a very known eye catcher and a singularity of the farm.

Because the family Mulder believed that the ecological way of farming was the only right and sustainable way, they decided to give the butcher a financial support which convinced him switch to ecological practices..

Another strategy in this matter is that if one works together with people one sometimes has to give instead of take. Tonny said:

“If you are always niggardly, in the end you'll be the one to pay’

By this Tonny meant that when working together being loyal is very important. By being loyal family Mulder showed that they also wanted others to earn something, this helped in creating trust which was considered an important element when doing business. For family Mulder this was not a considered a strategy as such but more their view on doing business although it works as a strategy to cope with uncertainties regarding cooperation.

Several characteristics of Andere and Tonny came to the fore during the interview. Andre and Tonny were very inspired by their work and this helped in getting other people enthusiastic as well. Tonny described her husband as an everlasting optimist who has fun in trying new things. Enjoyment was also pointed out as an important factor, family Mulder liked what they do and communicate this to their environment.

Another characteristic is the willingness and the openness to learn new things. Family Mulder visited all kinds of congresses, and Andre was active in different workshops. They indicated that it is important to come in contact with new ideas and new people. Through this they found new opportunities and got to know new people who were able to help them further. It also provided knowledge, which helped to stand strong against people and organizations who think in a different way.

5.3 Case 2: Case 2: Puur Zuivel

Puur Zuivel is a family company owned by the family Hoogenboom which produces yogurt, desserts and other dairy specialties. The milk used for the products originates from their own cows which are kept on a dairy farm they managed themselves.

Puur zuivel supplied supermarkets, smaller dairy shops and Turkish wholesale traders. For those Turkish wholesalers Hoogenboom produced special Turkish dairy products. For supermarkets and smaller dairy shops different desserts and yogurts were produced. Occasionally, depending on contract with supermarkets, Hoogenboom produced for private labels of supermarkets such as ‘crème fraise’ or other dairy specialties.

Jan Hoogenboom who was the pathfinder of Puur zuivel was interviewed, and two of his employees; Bastian and Cor. Bastiaan was responsible for the dairy farm, and Cor was responsible for the technical parts of the dairy processing.

Table 3: Summary Puur zuivel case

Uncertainties regarding:	Coping strategies	Characteristics of Actors
<p>- Recourse uncertainty: The knowledge on dairy machines, there was no established structure which provides this knowledge</p> <p>-Competitive uncertainty: the power of supermarkets, how to deal with the power of supermarkets which control consumers and suppliers</p> <p>-Consumer uncertainty No power to influence or reach consumers because of being a rather small player on the market.</p>	<p>-Take small steps</p> <p>-Networking for developing knowledge</p>	<p>-Having perseverance</p> <p>-Having the nerve to take action</p> <p>-Look ahead</p> <p>-Being open for new idea's</p> <p>-Understanding other cultures</p>

5.3.1 Uncertainties

The Hoogenboom family started as a dairy farm which delivered its milk to a dairy company. When Jan could not grow in quantity because of the quota legislation he decided to grow in value and started to process his own milk. When Jan started with processing dairy, the family did not had any experiences in the dairy industry. They were used to exchange knowledge with other colleague dairy farmers, however, with colleague dairy companies this is a bit more complicated because of the differences between dairy companies (in sizes, products types and so forth) and because of competitiveness between dairy companies, which made other dairy companies not

always want to share knowledge. This resulted in uncertainty regarding knowledge recourses.

The second uncertainty relates to power relations in the sales structure. Because roughly 95% of all consumers are reached in supermarkets, Jan was therefore very dependent of those supermarket, especially regarding the production of the private labels of those supermarkets. Private labels have the advantage that they are purchased in large orders so that Jan could produce large amounts, for example all crème fraise sold by a certain supermarkets in six month. Supermarkets in general are big firms who ask a couple of dairy companies to come up with a price and then pick the cheapest offer. This made it hard for Jan to create extra value which is a great disadvantage. The alternative was to produce products for his own label but those were difficult to promote; and supermarkets were only willing to place it in their shops if there is enough demand. Puur zuivel did not have the capacity to do big advertisements on television and was not able to create actively demand by consumers, whereas supermarkets were able to do so. This situation in which supermarkets have a lot of power in sales, resulted in an uncertainty regarding suppliers and consumer preferences.

5.3.2 Coping Strategy

One way to overcome the uncertainty relating to the absence of knowledge on dairy machines was by pioneering. Jan tried new things even though he was not always 100% sure whether it would work out, since certain things had to be found out by trial and error. Puur zuivel had a special technical employee, Cor, which took care of all technical process. Through this he developed knowledge which helped him to overcome and reduce uncertainties regarding technical dairy processing issues.

Another important strategy used involves networking. If Jan did not have the knowledge himself he asked around if people could bring him into contact with people, products or information whom or which he needed. For example Jan did not have knowledge on dairy processing machines, but he did knew someone who knew a company which delivered suitable machines for dairy processing. By networking Jan found knowledge to overcome his uncertainty on the absence of knowledge on dairy machines.

The uncertainty caused by the power struggles with supermarkets was not easy to reduced nor to overcome. Jan spread his risk by spreading his sales; he did not only delivered to supermarkets but also to the small dairy shops and the Turkish wholesalers. Especially the sales to Turkish wholesalers was actively chosen to get around supermarkets. The dairy company was rather small and therefore was able to

make specialties for small orders. This suited the Turkish shops very well, because Turkish shops usually have a very strong relation with the customers coming in the shop. Jan was able to bind the Turkish shops to his dairy company by making special dairy products for the shops such as yogurt with the name of the shop on the packing.

An characteristic which was mentioned by Jan in relation to cope with uncertainties in innovation processes, relates to having ‘a long breath’, meaning that you need to be able to keep hold of your ideas although they are not easy and fast to be realized.

Another characteristic which is important is having the nerve to actually do something. Jan gave the example of the inability to speak English but he tried to do so despite this might mean he blundered sometimes.

5.4 Case 3: Tupker

Tupker is a family farm which keep beef cattle in nature conservations areas. The meat of this beef cattle is sold in a shop which is located on the farm. The family started 25 years ago without having any land, but bit by bit they rented pieces of land which were mostly owned by nature conservation organizations. The meat is sold to consumers directly and to restaurants, and is known for its taste and the animal friendly way the animals are kept. For this research Gerda Tupker was interviewed who together with her husband started the farm.

Table 4: Summary Tupker case

Uncertainties regarding:	Coping strategies	Characteristics of Actors
<ul style="list-style-type: none"> -Interactional uncertainty The outcome of the negation process with LNV -Technological uncertainty The practical consequence of consumers who like to have personal contact 	<ul style="list-style-type: none"> -A new computer system -Using knowledge from others -Pioneer, try new things out -Knowledge development by doing a enquiry -Do not use expensive advertisement instead make use of free positive publicity 	<ul style="list-style-type: none"> -Open and transparent communicating -Having perseverance -Being open for new knowledge and information

5.4.1 Uncertainties

First of all, Gerda experienced uncertainty relating to a technical issue caused by consumers preference. Customers preferred personal contact by phone. Therefore Gerda called their customers when meat was available. In the beginning when Gerda had a relative small group of customers this was not a problem, however, when the number of customers grew, the complexness of calling costumers (when, who, what time, where about) grew as well. Gerda had to find a solution which controlled this complexness which caused uncertainty because no knowledge on this issue was available.

Another type of uncertainty was an uncertainty on the level of interaction. Gerda wanted to rent a farm from the ministry of agriculture nature and food safety of the Netherlands (Dutch acronym: LNV). This farm was located in the middle of a nature conservation area and it was a great opportunity for Gerda to build a new and bigger shed and have land around the farm instead of small plots spread over the area. It was also a suitable option for LNV because the land would be maintained in a sustainable nature friendly way; which is important for a ministry which stands for a more sustainable agriculture in the Netherlands. The uncertainty was found in the negotiation between the family and LNV. Because LNV is such a big organization it was difficult to find the person who wanted or could make a decision. Which resulted in a situation in which the family was sent from one person to the other, but nobody wanted to make a final decision which caused uncertainty regarding the interaction process with LNV.

5.4.2 Coping Strategies

When trying to overcome the uncertainty on the complexity of personal contact with customers Gerda pioneered by trying different systems. A major input for this pioneering was their daughter, who did her studies in retail and trade. Thus by knowledge development from outside, the study of the daughter, and trial and error a new system was found. The new system exists out of a computer system in which all data can be ordered and which has an agenda function which gives a sign when a certain customer needs to be called.

In relating to the uncertainty regarding the decision process of LNV, Gerda indicated her tenacity as the most important reason why in the end they got the contract and the permissions to rent the farm. They kept negotiating for 4 years and did not give up although they were sent from one person to the other over and over.

When asking about important characteristics in innovation processes the Tupker family blamed their success mainly on their way of communicating with their consumers which is always truthful and open. The family has always been active in involving their customers in what they do and were always willing to explain about their practices. For example Gerda organized a bicycle tour along the cows in the field.

Another important characteristic is the step by step approach which is taken. Gerda emphasized that one should not grow too fast because then the control over the different activities will be lost.

5.5 Case 4: Zuivel Natuur

Zuivel natuur is a project in which a group of chain partners which include consumers try to define a concept in which the idea of keeping dairy cows in nature areas is central. This rather new way of constructing a concept was started by dairy farmer Nico Verduin, and is still in the development process. Nico saw a lot of opportunities in integrating nature and agriculture on the one hand and integrating consumers and agriculture on the other hand. Zuivel Natuur is a project in which chain partners together decide how those integrations can be shaped and they are actively involved in the construction of the preconditions.

Table 5: Summary Zuivel Natuur case

Uncertainties regarding:	Coping strategies	Characteristics of Actors
<ul style="list-style-type: none"> -Interactional uncertainty Nature organization which are scared of traditional thinking when cooperating with farmers -Interactional uncertainty Decision power and involvement within cooperating organizations -Political uncertainty Legislation regarding ammoniac emission -Interactional uncertainty Colleague farmers who do not support the project because they are not convinced or scared about it -Competitors uncertainty Competitors give resistance because they are afraid to be pushed out of the market 	<ul style="list-style-type: none"> -Experiences in history gave trust in future -Trust building by being open and no hidden agendas, being open -Try to interact on a high level of the organization in which people have decision power -Take people serious and do not waste their time -Good preparation when contacting people, show that you know where you are talking about. -Networking, by talking to other people about ones deas, you will come in contact with people who are also interested. 	<ul style="list-style-type: none"> -Putting energy in challenges and things you like rather than putting energy in things that will happen and are frustrating? -Mindset twist, think outside established structures -Like to do new things and not being disappointed when something does not work out, only being this disappointed when you have not tried -Having the nerve to take action -Being open and transparent -Having perseverance -Being convinced of own ideas -Being able to judge and link signals from your environment -Driven by vision and internal drive -Being aware of own capabilities

5.5.1 Uncertainties

The first major uncertainty related to the involvement of different actors. Nico asked people from different potential chain partners to join his project. The uncertainty related to the question whether people were willing and able to advocate the project within their own organization. If people did not have decision power within their own organization it was hard to make decision on the project because they always had to report back to their backing first.

The second major uncertainties referred to ‘old thinking’ as Nico called it. Nature organization and colleague farmers have a history of failing cooperation. Nature organization for example experienced situations in which farmers only wanted to rent

nature land to use it for manure deposit on paper, but did not maintained the land properly. Farmers on the other hand were distrustful because a lot of cooperation forms which related to nature were only on a short term which resulted in an inability to trust nature organization. Furthermore farmers were frustrated because farmers are forced to sell land because the government wants to extent the nature areas.

Although Nico was often confronted with farmers who said ‘you are being friends with our enemy’ this was not experienced as an uncertainty for the innovation process. In the project two dairy farmers were involved, which is enough for the moment and when it becomes a success other farmers might be interested as well because the project then has shown to be successful. The frustrations on the nature organization side caused more uncertainty because they were needed in the project in order to make it a success.

5.5.2 Coping Strategies

The uncertainty regarding decision power of individuals within their own organization could partly be solved by asking people which were representing a high position within their organization such as manager or someone from the board of directors. These people do not need or less need to explain to the rest of the organization why they wanted to get involved in the project and were able to make decisions within the organization themselves. Only this raised another uncertainty, people in high positions were often not easy to reach due to tight time schedules and other priorities. When people with a high function in the organization were difficult to reach, Nico kept on trying until he got to speak to them. Subsequently Nico approached those people in a professional way, because Nico has a lot of experiences with business people he was able to interact with them in a professional way.

The uncertainty which related to the distrust of nature organizations was overcome by two coping strategies. The first and most important factor which helped to partly take away distrust at the side of the nature organization was the fact that Nico already rented land from ‘Staatbosbeheer’, which is a nature organization, for six to seven years. This gave him the opportunity to show that he had good intentions and was trustworthy.

Furthermore Nico tried to convince the people of the nature conservation area by giving a presentation in which he emphasized that he is very open for their ideas as well. The preconditions were about to be made by the different chain partners after all. Due to this presentation Nico hoped to get clear that he does not want to take over control and that he was open for new ideas. In trying so he uses the following example:

‘if you want a cow which is printed in army colors we can arrange that, everything is possible’

When looking at characteristics Nico pointed out that it is important to have an open mind set. Nico explained that solutions in the future do not fit the structures of today, so one needs to think outside those structures if one wants to come up with new ideas.

Another important aspect can be found in the way Nico approached new situations. Nico does not see uncertainties or problems; he only saw challenges. During the interview he explained that the only risk he really experienced is the one of not giving this project a chance.

5.6 Case 5: Waterlands Weelde

Waterlands Weelde is a concept which connects to a group of beef farmers, a butcher and a region just above Amsterdam. The meat produced by those farmers and sold by the butcher is positively differentiated to standard bulk meat because it is produced in a more animal friendly and environmentally friendly way. Furthermore the animals are only kept in nature areas in the certain region, and the meat is known as excellent quality, as well as by consumers as by restaurant owners. The farmers were organized in a cooperative which had made rules in cooperation with the butcher about the way the cows and calves are kept.

10 years ago the butcher changed from a ‘top slager’, which is a kind of high quality butchery but is not very exclusive, to the Waterlands Weelde butchery. The butcher Jan Spinter, one of his employees Lorenzo, and two farmers, Mister van Elten and Mister Rep, were interviewed about their experiences.

Table 6: Summary Waterlands Weelde case

Uncertainties regarding:	Coping strategies	Characteristics of Actors
<ul style="list-style-type: none"> -Consumer uncertainty Consumer preferences for the web shop -Consumer uncertainty Consumer preferences in general -Supplier/interactional uncertainty Balancing demand and sales, subsequently, uncertainty on quality and relation between farmers and butcher on purchase possibilities -Competitor uncertainty Competitors who copy the concept 	<ul style="list-style-type: none"> -Knowledge development by doing a enquiry -Being very open to consumers -Searching active for new information -Financial support, better quality better price -Building trust by having informal conversations and keeping close contact with farmers -Being strict in following up agreements 	<ul style="list-style-type: none"> -Being open and transparent -Approach new situations as challenge

5.6.1 Uncertainties

When the butcher wanted to change his butchery to a the Waterlands Weelde butchery, one of his main uncertainties was whether consumers were ready for this new approach to meat. This can be categorized as a consumers uncertainty relating to the preference of consumers.

A second uncertainty or rather a chain of uncertainties was found in the availability of the calves. Calves were not available during the times cows were kept outside, which was during late spring, summer and early fall. The cause of this uncertainty was connected to the nature areas which were only reachable by boat, when cows and their calves were outside in the summer it was hard to go into those nature areas and catch the calves. As a result of this uncertainty, another uncertainty arose: there was no surplus of calves which had its influences on the quality of the meat. The butcher was not able to choose between calves and only then he is able to guarantee the best quality. On the other hand, during winter this situation brought along uncertainties as well. The quantity and the quality were not causing any uncertainties then since in this period there was a surplus of calves. But because of this surplus farmers faced some troubles; not all farmers could sell their calves to the butcher. Some of the farmers who could not always sell their calves to the butcher got insecure about the motives of the butcher and his way of selecting the calves.

Finally an uncertainty was found which related to competitors. Other butchers and restaurants started using similar names for their meat as well. Waterlands Weelde, used the name ‘moerkalf’ which consists out of two words, moer, moeder which means mother, and kalf which means calf. This name was chosen because the calves

of Waterlands Weelde can grow up with their mother, which is the uniqueness of this 'moercalf' concept, while often calves and cows are separated when growing up. Competitors used similar names and descriptions such as 'calf which stayed by its mother', which resulted in difficulties for the Waterlands Weelde concept to distinguish themselves.

5.6.2 Coping Strategies

One of the strategies used by Waterlands Weelde to deal with the uncertainty on consumer preference was to research the preference of consumers. This was done by a company which was hired by Waterlands Weelde to do the research. By this more knowledge was obtained about the type of consumers which were interested in Waterlands Weelde. Also, it was investigated where Waterlands Weelde could enlarge their sales.

Another important input to reduce the uncertainty of consumer preferences were the contacts with consumers, in the shop, via e-mail and via telephone. The butcher and his employees tried to keep in close contact with their customers and reflect on the experience they had with them, in order to remain up to date about the preferences and ideas of their consumers.

In relation to the uncertainty on the unbalance in supply of calves, more knowledge was gained by creating a computer system which gave the butcher more openness about which farmers had calves or cows for sale. This system allowed the butcher to see when a calf was born at a farm, by knowing this he could estimate when calves were available for slaughter which gives him the opportunity to plan the sales better and think ahead.

To reduce uncertainty in relation to quality, a financial incentive is given. The highest incentive is given for the highest quality. Farmers do also visits other farms to obtain knowledge although this does not happen very often. Another coping strategy which is less conscious is that farmers derive some sort of social status when deliver good quality calves and cows. Farmers entitled colleague farmers who are known for good quality meat as 'good farmers' and talked about 'good craftsmanship' when referring to the quality of calves and cows. It was clear that not only the butcher but also the farmers were striving for high quality and were sharing the vision related to it.

The uncertainty, which is more on the interaction level is on the selection process of the butcher. The farmers I interviewed were both very positive about the way the butcher selected the calves. They were totally convinced that the butcher choose just

on rational reasons and trusted him in his selection process. The farmers knew the butcher personally and mentioned his open and fair way of handling.

The uncertainties regarding competitors was experienced as difficult to reduce directly. Indirectly the actors of Waterlands Weelde tried to create a very exclusive concept which could not be easily copied. An important element for this is the region to which the concept is connected, although the concept of calves which stay with their mother can be copied, the region in which the calves grow up cannot.

When describing those coping strategies it came to the fore that it is important that the farmers and the butcher trust each other. An important characteristic which is related to this is the openness and transparency of the butcher. The farmers pointed out that the butcher took into account his agreements very strictly and was open and transparent about his motives and decisions.

Another characteristic which was described is the drive and the ambition to produce good quality meat, for the farmers as well as the butchers. Mister van Elten (one of the farmers) said:

“It is a precondition for niche markets to be ambitious about quality because if one tries to differentiate from the bulk product one should make sure that this differentiation is positively”

This shows that the belief was shared amongst chain partners that each link in the chain was responsible for excellent quality, and that they all have their own responsibility to contribute to this quality.

5.7 Case 6: Free range Pigs

In the early eighties the first farmers and butchers started with the Free range pig concept. Keeping the pigs outside gave several health advantages and therefore also cost reductions, on for example medicines. When common pigs farming became more supported by all kinds of cheap medicine and other preparations, the advantages for Free range pig farming in comparison to common pig farming decreased. As a consequence a hallmark for Free range pigs was developed so that meat from Free range pigs could be sold for a higher price. This hallmark showed consumers that these pigs grew up in the Free range pig concept, and therefore were a bit more expensive. Lei Gelen who was the first Free range pig farmer was interviewed. Furthermore Gerard Zwetsloot and Sjek Floor who were the first butchers selling Free range pork were interviewed.

Table 7: Summary Free range Pig case

Uncertainties regarding:	Coping strategies	Characteristics of Actors
<p>-Competitor uncertainty The overflow of Free range pig which resulted in a decrease in the price</p> <p>-No credit from bank because of ignorance of the innovation</p> <p>-Political uncertainty No legislation on Free range pig and therefore no certification, which made it hard to invest in the concept by farmers</p> <p>-Interactional/consumer uncertainty No control on what the press writes, because it was very new everybody wanted to write about it, so not everything which was written might have been true.</p> <p>-Consumer uncertainty Will the consumer trust the new concept, and pay for it</p> <p>-Technical uncertainty Meat was not sold in separated wrapping which made that you need special butchers which did not existed at that time yet.</p> <p>-Competitor uncertainty Competitors also want to be on the front page and therefore try to put Free range pig on a disadvantage</p> <p>-Consumer uncertainty People like one stop shopping and thus do not want to visit a special Free range pork butcher</p> <p>-Competitor uncertainty Everybody is claiming to be 'green' which gives uncertainty regarding competition</p> <p>-Competitor uncertainty Supermarkets can decrease prices easily because of purchasing other products which gives uncertainty regarding competition</p>	<p>-Being open about the new concept</p> <p>-Making sure you have something unique which differentiates you from other 'green' concepts, sometimes you can arrange this by working together with others</p> <p>-Having knowledge which helps in giving resistance to groups who try to put you at a disadvantage</p> <p>-Trust building through inviting consumers to the farm</p> <p>-Stay independent by keeping own Free range pigs</p> <p>-Make use of objective knowledge by asking an ethnologist about animal friendly pig housing</p> <p>-Knowledge exchange by butchers who grade each other's products</p> <p>-Take small steps, building a pig house in years instead of</p> <p>-Building on trust within the production chain</p> <p>-Knowledge exchange and networking</p> <p>-Make sure you get attention from the media by organizing a special open day or keep own pigs or sponsor collective activities.</p> <p>-Cooperate with other butchers which enables one to create power against a monopolistic Free range pork organization</p>	<p>-Self-willed</p> <p>-Truly believe in the concept, otherwise you cannot pass it through</p> <p>-Making a well considered choice to be an entrepreneur, knowing it is not always easy</p> <p>-Be inspired by things around you which give you new idea's</p> <p>-Be able to think outside established structures</p> <p>-Not being disconnected from the outside world, but aware of what happens in your environment</p> <p>-Having perseverance</p> <p>-Seeing challenges instead of hindrance</p> <p>-Being certain about own practices</p>

5.7.1 Uncertainties

The Free range pig production chain faced different uncertainties regarding competitors. In the beginning the Free range pork was quite a success. Welfare organizations and the government stimulated farmers to switch over to Free range pig farming. A surplus of Free range pork was the result which made that some farmers had to switch back to common pig farming. Also the butchers experienced an overflow of Free range pork butcheries. For example an ex-employee of Sjek started after seeing the success of Sjek, his own shop in the same city. Furthermore there was an uncertainty relating to other production chains which also claimed to be 'green' which made it harder for the Free range pigs to distinguish themselves. And as third uncertainty relating to competitors, the power of supermarkets grew because of their low prices; supermarkets are able to sell very cheap meat because they can make profit on a whole range of products next to meat. Because of the low prices and the advantage for consumers to do 'one stop shopping' Free range pork butchers were confronted with uncertainty regarding competition of supermarkets

Another type of uncertainty was described referring to resistance from the common pig production chain. For example prominent people connected to the common pig chain tried to put Lei at a disadvantage by publishing negative information about his farm in a newspaper

5.7.2 Coping Strategies

The uncertainty regarding competitors was very hard to deal with because it is part of the interactions of the market and the 'entrepreneurial game' as Sjek called it. Nevertheless all three persons interviewed emphasized that actively distinguishing yourself is very important. Next to this one has to be open and transparent to his customers. Sjek for example had besides his butchery, a farm and owns a special type of pigs. This makes his formula very unique. It also gave Sjek the opportunity to show his costumers how his animals are kept. By this he distinguished himself from all other 'being green' competitors on the market.

Another strategy which is also connected to distinguishing yourself related to the media. When a farmer or a butcher distinguishes himself from common pig farming or pork and even distinguishes himself from other Free range pig farmers or butchers one can make use of the media. All three persons interviewed got a lot of attention from the media because they had something special, something different. Sjek had his own special pigs. Lei had the first Free range pig farm ever and Gerard had his own pigs in the garden of his butchery. All three have been approached by media several times and have been in news papers, on the radio and on television. Also the

uncertainty relating to the resistance of the common pig chain was overcome by using the media. Lei wrote a letter to the minister because of the wrong information which was spread and the politician had to take back his words. This coping strategies shows how the innovation is pushed into the regime (dominant common pig farming).

A third strategy relates to objective knowledge. For example Sjek wanted to build an animal friendly stable for his pigs. He asked an ethnologist to design his stable, as a consequence he could kind of prove that his stable was indeed animal friendly, after all it was designed by an ethnologist.

In all three interviews it came to the fore that it is important to have enough trust in own ideas which helped to continue although goals were not always fast realized. Subsequently it was emphasized to one should be able to see chances instead of risks.

Another important characteristic can be found in being open en transparent and the willingness to act so to costumers.

Lei said in this respect:

“You cannot say: I am doing better than others but you cannot come over and see it yourself. You have to be open”

Finally Lei described his ability of observing his animals and nature which brought him ideas of keeping animals in a more natural way. For example he observed that pigs who have the opportunity to built a breeding ground give easier birth. Later on he learned that this can be explained by hormones which stimulate the delivery, and which are only produced when the breeding ground is finished. This relates to the ability to think outside established structures, farming practices are a part of those established structures, Lei was able to think outside of it and found new knowledge.

5.8 Case 7: Blaarkop merk

The Blaarkop or white headed cow is a cow race which distinguishes itself by having a white head with black circles around the eyes and takes in a central place within the Blaarkop merk initiative. The Blaarkop merk initiative started by the ministry of public housing, public space and conservancy (Dutch acronym: VROM) which wanted to stimulate compensation for biodiversity loses in the Dutch businesses. Therefore it started a project called Biodiversiteitscompensatie, in which different companies were asked to join a series of meetings which were organized to discuss possible improvements regarding compensation of biodiversity loses. The outcomes

of those meetings were used to find answers on questions relating to the compensation of biodiversity losses by companies. The Kruidenier Groep, which is the supplier of foodstuffs for many cafeterias of the government, was asked to join those meetings. During those meetings a focus had to be chosen within the different companies to do a research on improvements options. For the Kruidenier Groep beef was chosen, which was until then imported from Austria. One of the members who guided the meetings knew about a proposal relating to the Blaarkop cows and proposed this proposal in the meeting.

This proposal implies that the Blaarkop cow graze at wetlands and was written by Ben. Wetlands is a rising topic in the Netherlands because the Netherlands faces all kinds of challenges relating to climate change and the rising water level. In connection to the rising water level the government wants to make space for the water and therefore turned agriculture land into wetlands. The Blaarkop is suitable for grazing at those wetlands because of its capability to survive on wet grounds. The Blaarkop could then produce milk and meat nearby the main cities of the Netherlands where the wetlands were located which is also more sustainable than the import of meat from other regions or countries such as Austria.

Ben who is the pathfinder of the idea of keeping the Blaarkop cow in wetlands was interviewed. Besides Ben, Christy Kool was interviewed who is the quality manager of the Kruidenier Groep and navigates the project within the Kruidenier Groep.

Table 8: Summary Blaarkop merk case

Uncertainties regarding:	Coping strategies	Characteristics of Actors
<ul style="list-style-type: none"> -Interactional uncertainty Keeping balance between chain partners regarding power and input -Interactional uncertainty No interest in the Blaarkop cow because of its image of being something from the past -Political uncertainty Resistance of institutions which benefit from old practices -Technical uncertainty No proper registration of the Blaarkop breed -Interactional uncertainty Blaarkoppen do not have a high status amongst dairy farmers -Interactional uncertainty Receive time/money within the organization to pilot the project -Competitor uncertainty Big companies who give resistance because of competitive position 	<ul style="list-style-type: none"> -Gather knowledge, Ben did research on the Blaarkop breed because there was little knowledge available -Make use of the media to give the Blaarkop cow and the initiative more acquaintance -Open contact between chain partners -Give space to learning processes -Make use of the role of a mediator so that communication between different chain partners stimulated -Make use of more open minded people -Make sure you have good data and a professional occurrence -Make use of reliable organizations or persons with a high status to spread the word -Make use of informal conversations when networking -Open communication with followers of the project (such as consumers and wholesalers) -Not only take but also doing something without getting anything in return 	<ul style="list-style-type: none"> -Good social skills; -The ability to motivate people -The ability to convince people to be open to others -The ability to judge people -The ability switch between different roles during the process. -Being open minded -Being transparent and open, no hidden agenda's -Willing to invest without getting incentives on the short term

5.8.1 Uncertainty

Before the second world war the Blaarkop was a popular cow breed in the Netherlands. But after the second world war, when farmers were stimulated to produce more and to scale up, farmers were pushed to use the Holstein Friesian because of its ability to produce a higher amount of liters milk compared to the Blaarkop. The Blaarkop almost disappeared. Ben saw potential in the Blaarkop and started to promote it. The uncertainty Ben faced relates to the collective perception on Blaarkoppen, a lot of farmers saw the Blaarkop as something from the past and getting people enthusiastic was difficult.

A second uncertainty was the notion that the Blaarkop merk is a rather unique concept because the business world is pushing the project and the research which is connected to it. While mostly governments or research institutes are involved in those kind of projects. The uncertainty can be found in that the Blaarkop merk faced resistance from those institutions in getting funds and support.

A third uncertainty was described in the time when the different chain partners were brought together because of the Biodiversiteitscompensatieproject and a start was made to set up the Blaarkop merk. The different actors in the innovation network started to work on the new concept, however, there were no agreements made on how much everyone should invest in time and money. Initially this went very well because all chain partners were convinced this project had potential which made that they all wanted to invest without having a concrete incentive. The uncertainty can be found in the process of keeping balance within the group. Although it went very well, it was a dynamic process in which power, influences, direction and input were established between partners.

5.8.2 Coping Strategy

In relation to the uncertainty regarding the image of the Blaarkop, Ben used different strategies. First of all Ben started a research on the performance of the Blaarkop cow on his own farm. Ben was supported in this by a subsidy from the European Union. This helped to convince people because before there was just no data available on the performance of the Blaarkop breed. Secondly, Ben tried to be often in the media so that the Blaarkop breed became known again. He pointed out that it is important to have a professional occurrence when doing so. Thus no amateurish pictures but a picture made by a professional photographer.

Sometimes coincidence can help in performing a coping strategy. When Ben noticed that people within ministry of agriculture, nature and food safety were not very interested in his proposal on keeping the Blaarkop cow in wetlands, he coincidentally met people from VROM. Those people were not influenced by the overall discourse and research methods on agriculture. Ben experienced that those people were a lot more open for his ideas. Another important strategy in this respect is that you have to be convincing. Ben always made sure he had good data available which made his story convincing. A second strategy mentioned regarding convincing the ministry for giving funds can be found in making use of reliable organizations or people with a high status which tell your stories. For example, the institute for agriculture and economics (Dutch acronym: LEI), a research organization in the Netherlands which is known for its reliable way of doing research, made a booklet on the Blaarkop cow which helped to obtain funding from the ministry.

The uncertainty about the balance between different innovation actors asked for a coping strategy focused on the interaction between the different actors. First of all it is very important to keep open contact between partners. If someone had worries about certain topics, such as the financial distribution or the direction of the concept,

one should speak up so that those worries were discussed and taken away. Another important factor is that someone steers the interaction process within the innovation network. Christy explained that she tried to monitor those processes so that she can help to overcome uncertainties relating to interaction, by for example connecting the people to each other when the communication between those people becomes troublesome. Christy emphasized that in those kind of processes, in which different visions on how the concept should be developed clash, it is important to give people the chance to learn from each other.

In the case of the Blaarkop merk it came to the fore that one has to have good social skills, such as the ability to motivate people, convince people to be open to others, judge people, and switch between different roles during the process. Christy has a background in education and takes care of employees related issues within the Kruideniergroep, those experiences helped her to fill a kind of mediator role. While Ben had a job with a nature organization and was a farmer as well, this helped him in switching between identities which is an advantage when standing between farmers and nature organizations.

Another important characteristic which was mentioned was that people who are involved in the project must be open minded, be open for innovativeness and open for the visions of others. Being open and transparent were mentioned as important factors to make this project succeed.

Finally it was emphasized that one should be willing to invest without getting any incentive on the short term.

6 Discussion

From the results a number of uncertainties and coping strategies were distilled. In this chapter those findings are linked to literature in which differences, similarities and mechanisms within the results are discovered.

The results are summarized in a table which is placed in appendix 2. In appendix 3 a similar table is placed in which literature on agriculture innovation and transition process is summarized. Those tables were used to make a proper analysis of the cases.

6.1 Uncertainties

In this section the patterns found in uncertainties in developing a food chain for agriculture nature products are discussed. The categorization of Mijer et al., (2006) was used to categorize the different types of uncertainties. Meijer et al., (2006) made a distinction between technical, resource, political, competitive, supplier and consumer uncertainties.

6.1.1 Absence of Technological and Political Uncertainties

In the cases there were only a few examples of technical and political uncertainties mentioned. Uncertainties regarding technological uncertainty involved the absence of knowledge on technologies and uncertainties relating to the technical infrastructure which did not suit the innovation. Political uncertainties were almost not described or were experienced as minor issues which were easily overcome.

In former research on this issue political and technological uncertainties came to fore more evidently (Wiskerke and Roep, 2007; Klerkx et al., 2010; De Lauwere et al., 2006; Horlings, 2008). Technological uncertainties, for example, which involved distrust in the internal technology and political uncertainties regarding the existing structure of legislations. While in the cases described in this research just a few examples of technological and political uncertainty were described and were not experienced as major hindrances.

This might be explained by the notion that the changes in the food chain in this research can be considered innovative on a regional scale rather than on a national or even global scale. The dairy company for example was not the first dairy processor of

the Netherlands, but for the pathfinder, who had no experiences with dairy processing, it was totally new and thus innovative in his context. As a result technical as well as political uncertainties were experienced but were rather easily overcome because others already knew how to handle them. While in former research actors actively tried to make their innovation fit the constraints of the socio-technical regime structure (Klerkx et al., 2010) this was not needed in the cases analyzed in this research because innovation were already fitting the political and technical parts of the socio-technical regime structure.

On the other hand the Free range pig case involved an innovation which took place on a rather national level since the Free range pig concept was a totally new concept then. In this case political uncertainties did play a role because legislation did not fit the Free range pig conditions yet.

6.1.2 Supplier Uncertainties

Supplier uncertainties described in the cases related to quality (supply shortages and surpluses) and to the willingness of suppliers to change practice in order to become certified, this was also found by de Lauwere et al. (2006).

Both types of uncertainties seem relevant for food chains acting in niche markets since niche markets are based on positively differentiation by consumers compared to bulk products (see section 2.1). This differentiation can be based on more technical quality criteria such as taste or color. But the differentiation can also relate to the production process and thus to the practices of chain partners. The food chains described in this thesis all focus on niche markets which differentiate themselves by the production process, and sometimes by both the production process and technical quality factors (such as meat which is produced differently but also has an excellent taste).

6.1.3 Resource Uncertainty

Since actors started doing something totally different than their initial profession, such as starting a shop or a dairy company, human resource uncertainty uncertainties relating to knowledge and skills were mentioned in several cases. However the actors did not experience those uncertainty as such, they rather called it a challenge trying out something new than an uncertainty of not knowing how.

Another resource uncertainty which was mentioned very often is financial resource uncertainty. Actors did not receive credit from the bank because the new concept was not trusted yet. Ben who is involved in the Blaarkop merk said:

“Even though you are very idealistic, even though you can have the greatest plan, without money you do not start anything”

In agri-food literature uncertainties regarding resources were also mainly on financial resources. Organizations and actors found difficulties in investing in innovations because there is no certainty on the outcomes in practices (Klerkx et al., 2010; de Lauwere et al., 2006).

6.1.4 Competitors Uncertainty

Competitive uncertainties were described in several cases of this research and was considered the most important uncertainty by almost all actors. In the case of the Free range pigs case which exists for a long time it was described as an uncertainty which is present during the whole period of maintaining the niche market. In particular, the group of competitors who also claimed the image of ‘being green’ were experienced as a major uncertainty. Staying unique, so that consumers differentiate the product from all other products, seems extremely relevant for agriculture nature products because actors experienced a tendency of competitors who also associate themselves with nature. This was also found by Wiskerke and Roep (2007) who studied the establishment of a alternative pig food chain in which competition was experienced from organic pork .

Furthermore the power of supermarkets caused uncertainty, because supermarkets sell products for lower prices because they have advantages in scale and diversity in products.

In other research, competitor uncertainties were also described (Klerkx et al., 2010; de Lauwere et al., 2006). Although those competitor uncertainties relate mainly to competitors who compete with the innovation rather than copy the image.

6.1.5 Consumer Uncertainties

In almost all cases consumer uncertainty were mentioned. Actors were uncertain about if and how robust consumers would give preference to their products. De Lauwere et al. (2006) underlines those finding in relation to uncertainty on the judgment of consumers. Although it was mentioned in all cases it was not

experienced as a major uncertainty because actors were convinced of their product and experienced the uncertainties regarding consumers as a challenge to convince those consumers of their vision and belief in the product.

6.1.6 Interactional Uncertainty

Interactional uncertainty is a type of uncertainty which was not categorized by Mijer et al. (2006) but which came to fore in almost all cases. Interactional uncertainties include uncertainties which relate to the negotiation and the communication process. Although Meijer et al. (2006) categorization was very use full to categorize interactions on a more social technical level, it was not applicable for uncertainties which took place on a rather socio-psychological level in which individual innovation actors were confronted with uncertainty regarding communicating and negotiating, as well as within the innovation network as between individuals from the innovation networks and individuals from outside the innovation network. Although in some cases those two levels were very interlinked with each other. This might be explained by the more abstract perspective Meijer et al. (2006) uses on innovation while this research has a more actor oriented approach on innovation process.

An example in which an uncertainty on a more soci-psychological actor level and an uncertainty on a more social-technical level were interlinked was found in the Waterlands Weelde case. Because of a surplus of calves in the summer farmers could not always sell their calves to the butcher which resulted in disturbance in the relation between the farmer and the butcher.

Another example in which interactional uncertainty occurred refers to how decision making was influenced by events from the past. In the case of Zuivel Natuur for example nature organization questioned the motives of farmers to rent land which was caused by experiences of the past. And in the case of the Blaarkop merk uncertainty regarding the background and motives of other actors were described in relation to the balance of different innovation actors in time, money and input. Whereas in the case of Tupker, negotiating with the Ministry of Agriculture Nature and Food Safety about renting a farm gave cause to interactional uncertainty. In this negotiating process nobody wanted to take responsibility because of uncertainty regarding the consequences of the outcome of the innovation process.

6.2 Coping Strategies

Actors in the cases used all kinds of coping strategies to reduce or overcome the uncertainties described in the cases. In this paragraph those coping strategies will be discussed.

6.2.1 Actor related Coping Strategies and Characteristics of Actors

Actors in innovation networks use a range of coping strategies which can only be carried out if those actors have certain characteristics at their disposal. In the cases often similar characteristics and coping strategies were illustrated by the people interviewed. In the table beneath a list is presented which gives an overview of the coping strategies and characteristics of actors over the different cases. The coping strategies and characteristics represent a summary of the coping strategies and characteristics described in the cases.

Table 9: Summary of Coping Strategies and Characteristics of actors

Coping strategy	Characteristic of actor
Being knowledgeable when convincing people	<ul style="list-style-type: none"> - Driven by vision and internal drive, truly believe in it, otherwise you cannot pass it through - Having perseverance - Self-willed
Take small steps, Pioneer	<ul style="list-style-type: none"> - Seeing challenges instead of hindrance - Look ahead - Believing in and having faith in, own practices. - Make deliberated choices about which activities fit their lives (in time, and in preferences) - Making a well considered choice to be entrepreneur, knowing it is not always easy
Being actively open and transparent	<ul style="list-style-type: none"> - Being transparent and open, no hidden agenda's - Being open to contact in general
Make use reliable individuals, organizations or the media to spread the word	<ul style="list-style-type: none"> - The ability to motivate people - The ability to convince people - The ability to judge people - The ability switch between different roles during the process
- Give space to learning processes	<ul style="list-style-type: none"> - The ability to motivate people - The ability to convince people - The ability to judge people - The ability switch between different roles during the process.
-Use different types of knowledge to incorporate in the innovation	<ul style="list-style-type: none"> - Being open minded - Understanding other cultures - Not being unworldliness, but aware of what happens in your environment - Be inspired by things around you which give you new ideas - Be able to think outside established structures - Actively looking for and being open to new knowledge - Being open to contact with
-Vision and believe as basis for the food chain which is shared amongst all chain partners	<ul style="list-style-type: none"> - - Driven by vision and internal drive, truly believe in it, otherwise you cannot pass it through - Be able to convince people - Willing to invest without getting incentives - Being loyal

6.2.1.1 Internal innovation network dynamics

Such as described in section 6.1.5 the social process within innovation networks are dynamically. Good social skills were helpful in the learning and negotiation process which took place in those innovation networks. The function of someone who steers this process was referred to, especially in the Blaarkop merk case, as a function in which someone monitors the social process of the innovation networks. It was emphasized that by monitoring the social process one can intervene when communication becomes troublesome. Actions which were taken in those situations exist out of linking people to each other, mostly informal and create space for learning process. The function of external mediators in innovation networks was discussed by van Aarts and Woekom (2002) and Klerkx et al. (2010). Van Aarts explained about 'getting thing on the table' this also came to the fore in the case, by linking people to each other a moment was created in which actors could talk about topics which up till then were not discussed because of the sensitivity of the subject. And also the use of informal conversations was discussed by several authors (Klerkx et al., 2010; Horlings, 2008), in the cases it came to fore that informal conversation give space to more free way of talking. A major differences is that the actors who act as a mediator were not objective external professional mediators but were actors from within the innovation network who toke in the role of a mediator. While in other researches on agri-food mediators were people who mediate as a profession and were hired to be a mediator in the innovation process. Innovation actors were aware of the social process happening around them, in several cases it was emphasized that social processes were an import element relating to the success of the innovation. Innovation actors therefore emphasized that being able to judge, motivate and stimulate people are important characteristics for innovation actors because besides being able to create a food chain technically one should also be able to create a food chain socially. Van den Ham and Ypma (2000), also mention judging and motivating people as characteristics of innovative entrepreneurs.

Another aspect which also was mentioned several times during the interviews and also relates to internal network dynamics was the importance of a being totally open to the other actors in the innovation network. Actors called it a pre-condition when it comes to cooperation, no hidden agendas but everyone should speak their mind. While in trading it is normal to keep the conversation more distant and strategic, in the innovation networks described in this research trust could only arise when actors had the feeling they could estimate one another and were sure they would not be confronted with unsuspected issues. Learning processes were strongly connected to this aspect. Misunderstanding between actors can result in distrust. This happened in the Blaarkop merk case in which one innovation actor interpreted the ideas of another innovation actor wrongly, this resulted in a disturbance in trust. Supported by an actor

who took the role of mediator the two parties were connected which resulted in a learning process in which the intentions of the parties were reconfirmed and openness and trust was recovered.

A final aspect which relates to coping with internal innovation network dynamics relates to being loyal. In the Ecoloar case for example it was emphasized that in cooperation one should sometimes be able to give without getting anything in return directly because this strengthens the connection between different actors and also inspire others to agitate for the innovation project.

6.2.1.2 Boundary spanners and strategic cooperation to put pressure on the existing institutional environment

Cooperation with individuals or organizations outside the innovation network is needed to overcome uncertainties relating to knowledge, finance or publicity which can push the innovation further. Actors tried to include individuals and organizations by networking, an important element in this were informal conversations. In several cases actors found support by individuals or organizations through informal contacts they already had. Those individuals who were external to the innovation networks but played key roles in advocating interests of the innovation network, by helping in finding new contacts and mediate in case of conflict with the socio-technical regime structure can be seen as boundary spanners (Klerkx et al., 2010). Innovative actors emphasized their wide network on different levels. In the Free range pig case for example Sjek emphasized that you should stay 'seen'. By being 'seen' Sjek meant that it is important to stay in touch with a network of people who some how are connected to your innovation or field of practice. This is also described by Horlings (2008), who found that innovative entrepreneurs have often a multi level network of people.

Furthermore outsiders were used to put pressure on the socio-technical regime structure by using the media or influential people to spread the word. In the Blaarkop merk case a farmer which was well known amongst other farmers started to use the special Blaarkop breed this made others farmers take the Blaarkop merk more seriously. Smith (2007) used the concept 'godfather of innovation' in this respect. The well known farmer could be considered such a godfather.

An important characteristic in this respect is the openness of innovation actors. Innovation actors were open about their ideas and talked about it during congresses and other moments in which relevant individuals or organizations were present, as a result allies were easily found. In the case on Zuivel natuur Nico said in this respect:

‘When people are aware of your ideas, people who are interested will connect to it and make it grow. Being open increases your connecting changes and is therefore very important’

Another characteristic which came to fore relates to the ability to switch between different roles, because groups act differently.

6.2.1.3 Thinking outside established structures and the use of knowledge

Because an innovation represents the construction of something new, actors emphasized that the ability to think outside established structures is important in innovation processes. Aarts and Woerkon (2002) describes the importance of selecting uncertainty oriented people, this refers to people who have the characteristic to be open to new things, which contains elements as being open to; new knowledge, different world views, other cultures etc. One should be able to construct something new out of old elements. In niche markets being unique showed to be a central element see section 6.1.4. The incorporation of knowledge from other sectors was used in different cases to establish this uniqueness.

6.2.1.4 The role of vision and belief

A last major point which was described in the case can be summarized as having vision and belief as basis for your innovation. In the Free range pig case it was emphasized that because you act in a niche market and you thus want people to differentiate your product positively in comparison to the bulk product it is extremely important that your story is real and robust. Another characteristic which follows-up in this is that actors described them as self-willed and having perseverance, they had strongly chosen their own course and had the custom to look far ahead. In the case of Puur Natuur it was also emphasized that starting something new does not happen in a day but that you must have the nerve to try things out and have patient to take small steps at a time.

Vision and believe also play a role in the way different chain partners work together. As described in section 6.2.1.1 it is important that chain partners work closely together. Vision and believe should be shared because the quality of the product is embedded in this vision, all chain partners have to strive for the same quality since quality depends upon the weakest link in a chain. This is especially so for niche

markets because quality is a pre condition when consumers need to differentiate a product positively from the bulk product.

6.2.2 Interventions related Coping Strategies

Interventions are seen as influences from the environment on the innovation networks which stimulate the innovation process. In the cases different intervention were described.

6.2.2.1 Financial and Knowledge development and exchange

Interventions were often actively brought in by innovation actors who use their networking skills to create opportunities regarding subsidies or knowledge development. Furthermore innovation networks made use of innovation brokers such as the organization Stimulant in the Ecoloar case, who provided besides financial support also knowledge development on shops practices.

The actors emphasized that those intervention had a major influence and gave an enormous bust to the innovation process. De Lauwere et al. (2006) also described that financial support and support in knowledge development and exchange are important elements which stimulate innovation, because those innovation involve bottom change processes, the interventions should be in a stimulative matter rather than compulsive.

6.2.2.2 Absence of Legislation and regulation and mediators

As explained in section 6.1.1 actor did not experienced political uncertainties regarding legislation and regulation. Legislation and regulations which stimulated the innovation were also not mentioned during the interviews. Although agri-food literature on this issue is also not flooded with statements on supportive legislation and regulation, it is considered as stimulative aspect to innovation (Horlings, 2008). It seems that innovation on a more local scale, involving a group of actors rather than a whole sector or region relating to innovations which were new in the context of the innovators but not new in general, the involvement, positive or negative, of the authorities such as city counselors of policy makers is less than with rather big scale innovations such as described by Horlings (2008).

The importance of a external mediator was stressed by several authors (Aarts and van Woerkom, 2002; Klerkx et al., 2010). In the cases described in this research it came to the fore that actors within the innovation networks acted as (partly) mediators and

were consciously involved in steering the social process. Those more informal mediators were not external, hired and objective but were actors who used skills which are determined to mediators (Aarts and Woerkom 2002) to reduce interactional uncertainties (see also section 6.2.1.1)

6.3 Lessons for the Concept 'Nature Milk'

When looking back to the characteristics of the concept 'Nature Milk' as defined by Frank Lenssink, a range of uncertainties and coping strategies will contain lessons for a future food chain and niche market for 'Nature Milk'. In this section those lessons will be discussed.

6.3.1 Uniqueness and Quality

As in all cases described in this research uncertainties regarding competitors will be of importance for the 'Nature Milk' concept as well. In this research already two cases in which actors try to link dairy to nature are described. The challenge here is to be unique and to communicate this uniqueness to consumers.

Important coping strategies relating to uncertainty of competitors actors involve the strategy to make a unique combination of old elements which is established through actors who are able to think outside their own world view and incorporate knowledge elements from different levels and sectors into a new combination.

Furthermore actors should be open to consumers about their product and production chain which is build out of a vision which is strong and robust and shared among all chain partners which are striving for the same quality. The media and godfathers of innovation should be used to spread the word so that other (consumers and other factors within the socio-technical regime structure) are more likely to be convinced.

6.3.2 Interactional Uncertainty

Another major uncertainty which will also play a role regarding 'Nature Milk' is interactional uncertainty. Because innovations in food chains cannot be established by one person alone and innovations have to be pushed in to the socio-technical regime structure, uncertainties on the interactional level are always present because cooperation is a dynamic process (see section 5.2.1.1). Actors within the innovation network of 'Nature Milk' should be aware of the role of a mediator. The cases showed that often not an external person fulfilled this role but that different innovation actors monitored the social process and tried to steer it in such a way that

internal innovation network uncertainties were overcome. If the actors within the innovation process are not acting as a mediator, an external mediator can be asked to steer the project.

Interactional uncertainties which took place between the innovation network and the institutional environment were often resolved by including the right person or so called boundary spanners who were able to broke contact when needed. Again the social skills of innovation actors, especially social skills which relate to being able to network, are of great importance when including those individuals.

6.3.3 Knowledge and Financial interventions

In the cases interventions played an important role in overcoming resource uncertainties relating to knowledge and finance. As described by de Lauwere et al. (2006) those intervention should be in a simulative manner rather than compulsive.

6.4 Remarks on the Method used

Although the variety between the cases gave a enough insight regarding differences between cases, weaknesses can found in the number of individuals interviewed per case. This was due to the fact that time was limited and not every case provided options to interview more actors. More actors per case would have provided a fuller picture of the cases.

Another weakness in the method was the usage of triangulation. Although per case 2 or 3 people were interviewed, which is a form of triangulation, there was no other data used besides doing interviews. Initially folders or other promotion data was used to get idea of the initiative beforehand but minutes or other more objective data was not used.

7 Conclusion and Recommendations

In this chapter the conclusions which are distilled from the discussion are presented. Further recommendations for the concept 'Nature Milked' are given.

7.1 Conclusion

In this section the conclusions are described. First the most important uncertainties from the cases are given. Subsequently the coping strategies which contributed strongly to overcome or reduce uncertainties will be presented.

7.1.1 Uncertainties

From the categorization of Meijer et al. (2006) the uncertainty relating to competition came to the fore very strongly. Because niche markets indirectly refers to being different in the eyes of consumers it is important to be unique and different in a positive manner.

A more underlying uncertainty was uncertainty on the interactional level. Because innovators cannot innovate on their own they need cooperate within innovation networks and the innovation network has to interact with the existing socio-technical regime structure in order to realize its innovation goals. Those interactions bring along all kinds of uncertainties as discussed in section 5.2.1.1.

Also suppliers uncertainties regarding quality were important for niche markets because excellent quality is a pre condition to be positively differentiated and thus to act in a niche market. The balance between availability and demand and the willingness of chain partners to change practice are important elements in this respect.

Furthermore uncertainties relating to recourses as knowledge and financial uncertainty came to the fore in the cases. Because actors started something new outside their own profession, skills, knowledge and investments were needed.

7.1.2 Coping Strategies

First of all, the importance of knowledge development and exchange came to fore in this research as an important coping strategy. Uniqueness in relation to competition was pointed out as one of the major uncertainty for food chains in niche markets of agriculture nature products, actors therefore tried to use knowledge from a wide multi level network to include different elements which are in its self not unique but the combination is. Social skills relating to networking were important to obtain this knowledge from different sources. Furthermore the ability to think outside established structure is an extremely important characteristics in this respect because in order to use the knowledge and recombine it one has to be able to think outside the old combinations.

Secondly coping strategies regarding interactional uncertainties involve mainly good social skills to steer the internal social process and to convince people who are needed to give support to the innovation network. Social skills are a broad term which is built out of different elements such as communication skills and skills relating to dealing with people (such as motivating people, judging people etc.).

Good social skills were used in relation to the dynamics of the social processes of the innovation network. Actors fulfill the role of a mediator and create space for learning and negotiation by using strategies as informal conversations, connecting the right people, motivating people and try to create an situation of trust and openness.

Another example in which good social skills were important in reducing interactional uncertainty relates to networking. Because innovation means doing something new it is important to pass through the message to a wide range of people, consumers as well as other people and organizations whose knowledge or support is needed. Those social skills proved useful when including boundary spanners who broke contact or defend and advocate interests. Another option is to put pressure on the existing socio-technical regime structure by using a ‘godfather of innovation’ who creates support by its followers or by using the media to influence socio-technical regime structures such as consumers preferences or diminish resistances of certain groups.

A third important coping strategy was found in the vision and belief of actors who formed the basis for innovation in several cases. Innovation actors used their vision to convince people outside the innovation network. Furthermore a shared vision among chain partners resulted in shared definition on quality and the willingness to change practice to secure this quality. This especially relevant for niche markets because niche markets exists of products which are positively differentiated by consumers on the basis of quality criteria.

As a fourth coping strategy taking into account the interventions which were used to stimulate the innovative initiatives one can conclude that financial and knowledge development were used interventions to overcome recourse uncertainties.

7.2 Recommendations for the Concept 'Nature Milk'

The developers of a food chain and niche market for 'Nature Milk' should be aware of the following uncertainties.

- Uncertainties on uniqueness and competition
- Uncertainties on quality and balancing supply and demand
- Uncertainties on interaction, internal innovation network dynamics and including and pushing the socio-technical regime structure
- Uncertainty on knowledge and financial resources

To overcome or reduce those uncertainties a range of coping strategies should be taken into account, summarized as:

- Incorporate knowledge from a wide multi level network, by being open to new knowledge and perform network skills. Elements should be brought into new combinations which are unique and constructed by an approach which think outside established structures
- Interactional uncertainties have to be overcome by using social skills. On an internal innovation network level this involves full filling the function of a mediator, by connecting people; make use of informal conversation and steering the social process. When relating to interaction between the socio-technical regime structure and the innovation networks social skills such as convincing and networking are important. Boundary spanners should be used to act as broker between the innovation network and the institutional environment. Furthermore godfathers of innovation or the media can be used to put pressure on the socio-technical regime structure.
- Availability and demand should be closely balanced in which one can better have surpluses than shortages because quality is a pre condition for niche markets. An open and fair cooperation is needed in which the suppliers are willing to invest in this quality as well because they underline the vision of the food chain.

- Coping strategies involving interventions should be used when knowledge development and exchange is needed. External organization can take care of more professional knowledge or can assist in knowledge exchange and development by starting a professional research or organizing knowledge exchange conferences. Furthermore interventions relating to subsidies can be helpful when financial support is necessary.

However, this research showed that the road to this certainty can be uncertain, the recommendation can help the developers of 'Nature Milk' constructing a food chain and niche market which provides a price which is stable and covers the costs.

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Appendix 1 The Interview (in Dutch)

Datum:

Locatie:

Naam geïnterviewde:

1^{ste} thema: De visie achter de keten

1. Met welk idee is de keten begonnen?
2. Wat zijn de meest belangrijke speerpunten van het concept?

2^{de} thema: Opstarten niche markt (niche niveau)

Niche niveau

3. Wie heeft het initiatief genomen om de niche markt te starten?
4. Welke stappen zijn er in het verleden gezet met betrekking tot het opzetten van de keten?
5. Welke groepen hebben in de begin fase intensief samen gewerkt om de niche markt van de grond te krijgen?
6. Denkt u dat er een bepaalde rolverdeling is ontstaan?
7. Hoe heeft u ervoor gezorgd dat bepaalde groepen betrokken waren in de keten?
8. Welke groepen of personen hebben verantwoordelijkheid genomen?
9. Welke groepen of personen hadden veel macht binnen het proces?
10. Welke rol heeft vertrouwen binnen het proces?
11. Welke rol heeft loyaliteit binnen het proces?
12. Hoe heeft netwerken een rol gespeeld in het proces?
13. Waar komt de inspiratie vandaan?
14. Waar haalt u kennis vandaan?
15. Wat zijn belangrijke eigenschappen?

3^{de} thema: Externe Samenwerking (regime niveau)

Institutioneel

16. Is er een certificaat of keurmerk voor het product nodig is?
17. Welke organisatie verzorgd dit certificaat of keurmerk?
18. Heeft het verkrijgen van dit keurmerk voor problemen gezorgd?.
19. Heeft u gebruik gemaakt van een belangengroep zoals LTO?
20. Werkt u samen of wisselt u kennis uit met bepaalde groepen (andere zuivelaars?)?
21. Zijn er (nog andere) organisaties die een rol spelen binnen u keten?
22. Welke rol spelen deze organisatie?
23. Waren deze organisaties makkelijk te betrekken in u keten?

24. Hoe heeft u deze organisatie betrokken in u keten?
25. Zal er een nieuw 'soort' groep of institutie ontstaan (zoals bijv. biologische boeren dat hebben)?

Bedrijfsleven

26. Met welke bedrijven werkt u samen binnen deze keten?
27. Zijn of waren er problemen of knelpunten met betrekking tot die samenwerking?
28. Welke factoren vormen een punt van discussie als u samenwerkt met andere bedrijven?
29. Welke risico's of nadelen denk u dat deze groep zal ervaren aangaande natuurvlees?

Consument

30. Welke consumenten zijn denkt u geïnteresseerd in het product?
31. Welke onderscheidende voordelen zal deze consument aanwijzen aangaande natuurvlees
32. Welke zaken zullen consumenten weerhouden van het kopen van het product?
De prijs
33. Hoe houdt u contact met u consument?

Algemeen

34. Heeft de keten veel weerstand ontvangen van haar omgeving?
35. Waarom gaven bepaalde groepen weerstand tegen deze innovatie?
36. Tegen welke gevestigde ideeën of waarde druist de zuivel keten in?
37. Zijn er bepaalde normen die niet gehanteerd worden binnen de zuivel keten?
38. Hoe denkt heeft u deze omzeilt?
39. Heeft een bepaald persoon of groep invloed gehad waardoor een bepaalde gevestigde mening werd beïnvloed?

4^{de} thema: Terug blik

40. Welke punt is achter af gezien het meest een knelpunt geweest in het hele opzet proces?
41. Hoe heeft u dit knelpunt toen geprobeerd te omzeilen?
42. Zou u er nu anders mee om zijn gegaan?
43. Welke punt is achter af gezien het grootste risico geweest?
44. Hoe heeft u geprobeerd dit risico af te dekken?

5^{de} thema: Opinie natuur melk

45. Welk knelpunt voorziet u aangaande natuurmilk?
46. Welke kansen biedt natuurmilk?

Appendix 2 Summary of the cases

Appendix 3 Summary of the Literature