

Planning for (local) food systems

Understanding the development of local
food chains in the Dutch context

Wouter Holtslag



Wageningen, 2010

Planning for (local) food systems

Understanding the development of local
food chains in the Dutch context

LUP-80436 Master Thesis for the study program Landscape Architecture and
Planning: Specialisation Planning

Wouter Holtslag
March, 2010
Wageningen University, Wageningen

Supervisor: Dr. Gerrit-Jan Carsjens
Examiners: Dr. Gerrit-Jan Carsjens and Prof. Dr. Arnold van der Valk

Cover photo taken by Sanne Broekhof

Summary

This explorative research focuses on the spatial aspects that influence the development of local food systems in the Netherlands. The research is done from a planning perspective. Planning research is seldom focussed on the food system. Only recently have planning scientists begun to analyse the impact of food systems on the landscape. Because this topic is relatively new, more information is needed to come to a clear picture on the development of local food systems. This research adds information by studying and describing the Dutch situation of local food systems. The main focus and starting point of this research are the spatial aspects that influence the development of local food systems. However, as the research progresses, also other aspects that influence the development of local food systems are reviewed.

Three strategies for acquiring data are used. First, a literature review on the development of alternative food systems is conducted based on scientific literature from several fields of study, in order to show the broader international context of local food systems. Secondly, four cases are chosen to research how local food systems develop in the Netherlands. Semi-structured interviews with respondents in each of these cases give insight in the aspects that influence local food systems. This part of the research also shows that non-spatial aspects play an important role in the development. In order to verify the results, two interviews are held with researchers in the field of local and sustainable food production in the Netherlands. These interviews give more in depth information on the specific spatial and non-spatial aspects that influence local food systems.

Several conclusions are drawn from the data acquired in this research. First of all, there seems to be one essential spatial aspect that does influence the development of local food production: presence of urban activities. The influence urban activities have is both negative and positive. On one hand, local food systems are dependant on finding a market for their products. In order to find enough consumers presence of a town is preferred. On the other hand, the presence of urban activities leads to pressure on agricultural production. Land prices rise, making it harder for farmers to expand their activities near a town.

Several other aspects that are not directly spatial in origin play an important role in the development of local food systems in the Netherlands. The first is the current trend in planning to focus on compact cities. New neighbourhoods are often faced towards the city centre. Urban development is strictly separated from the rural landscape, often by physical barriers. This has led to a strict division between urban and rural activities. In order to come to a more successful local food system, urban and rural activities should be mixed.

Secondly, the research shows that a blind focus on local food may not lead to preferred results. Local food is often interpreted in a narrow sense by policy makers. The scientists interviewed for the research argue that the focus should shift towards sustainable food production. The key elements of sustainable food production are:

production of food that is sustainable in economical, ecological and social-cultural sense; transparent in food production and distribution. It is essential that all actors in the food chain have insight in the production process, and all actors bear responsibility for a sustainable production of food. Transparency in the food chain can be reached by reducing the number of steps in the food chain, which is in itself also an element of local food production. Local food production can help to reach a sustainable food chain, but it is essential that policy makers and planners see local food in the broadest possible way. It is essential that the choice the consumer makes is changed. This can be done by: increasing choice of local food in supermarkets, working with labels to show which products are grown most sustainable. However, these measures will have limited effect as long as consumers focus on buying the cheapest products. In order to really make a change, the taxing system on food has to change.

There is another important issue that can explain the relative slow development of local food systems in the Netherlands. As agriculture in the Netherlands is among the most specialised and industrialised in the world, a switch to extensive local food production is often difficult for farmers. The researchers consulted for this research suggest that local food can also be grown in an efficient and even an industrial way.

This research shows that local food can be seen in many different ways. While currently local food is mostly present on a small scale, it may be worthwhile to look for possibilities for local food on a larger scale. Current local food initiatives help to open the eyes of consumers and policy makers, and help to come to a better (local) food system.

Samenvatting

Dit exploratieve onderzoek is gericht op de ruimtelijke aspecten die van invloed zijn op de ontwikkeling van lokale voedselketens in Nederland. Het onderzoek is gedaan vanuit een planningsachtergrond. Ruimtelijke planning en voedsel wordt zelden gecombineerd in onderzoek. Pas sinds kort is er aandacht binnen de planningwetenschap voor de invloed van voedselketens op ons landschap. Omdat het onderwerp relatief nieuw is, is er behoefte aan praktijkgerelateerde informatie over voedselsystemen. Dit afstudeervak draagt bij aan het onderzoek door praktijkvoorbeelden uit Nederland te analyseren en vergelijken met internationale literatuur. Het hoofddoel van het onderzoek is inzicht krijgen in de ruimtelijke aspecten die een rol spelen in de ontwikkeling van lokale voedselsystemen. Tijdens het onderzoek is echter duidelijk geworden dat ook andere aspecten een belangrijke rol spelen in de ontwikkeling van lokale voedselketens.

Op drie verschillende manieren is informatie verzameld voor dit onderzoek. Allereerst is een literatuurstudie gedaan waarin op basis van internationale literatuur over alternatieve voedselsystemen een beeld wordt gevormd van de bredere context waarin de ontwikkeling van lokale voedselsystemen zich afspeelt. Daarnaast zijn vier cases in Nederland geselecteerd en bestudeerd om inzicht te geven in de Nederlandse ontwikkeling van lokale voedselsystemen. Uit dit deel van het onderzoek blijkt duidelijk dat meer dan alleen ruimtelijke aspecten een rol spelen bij de ontwikkeling van lokale voedselketens. De resultaten uit de literatuurstudie en de case studie zijn vervolgens in perspectief geplaatst en gecontroleerd door een tweetal interviews met onderzoekers op het gebied van lokale en duurzame landbouw in Nederland.

Het onderzoek heeft verscheidene resultaten opgeleverd. Er blijkt één belangrijk ruimtelijk aspect mee te spelen in de ontwikkeling van lokale voedselketens: aanwezigheid van stedelijke activiteiten. De invloed van stedelijke activiteiten kan zowel een positieve als negatieve uitwerking hebben. Waar lokale voedselketens de stad nodig hebben als afzetmarkt voor producten, brengt stedelijke druk een hogere grondprijs met zich mee, die het lastig maakt voor boeren om uit te breiden of hun bedrijf voort te zetten. Lokale voedselproductie kan niet zonder een afzetmarkt. Aanwezigheid van stedelijke activiteiten is dus essentieel.

Tijdens het onderzoek zijn ook verscheidene andere aspecten die van invloed zijn op de ontwikkeling van lokale voedselketens aan bod gekomen. Allereerst heeft het streven naar compacte steden vanuit planning een negatieve invloed. Nieuwe stadsuitbreidingen worden vaak op het centrum van de stad gericht. Ze zijn afgescheiden van het omringende land, meestal door een fysieke barrière. Dit zorgt voor een strikte scheiding tussen stedelijke en landelijke activiteiten, terwijl lokale voedselproductie juist een mix van beide nodig heeft om zich te kunnen ontwikkelen.

Uit het onderzoek blijkt verder dat een focus op lokaal als geografisch principe, zoals vaak door beleidsmakers wordt gedaan, niet tot de gewenste resultaten hoeft te

leiden. De geïnterviewde onderzoekers geven aan dat het belangrijker is voor de samenleving om zich op duurzame voedselproductie te richten. De belangrijkste elementen van duurzame voedselproductie zijn: duurzame productie in economische, ecologische sociaal-culturele zin en transparantie in de voedselketen. Het is essentieel dat alle betrokkenen, van producent tot consument inzicht krijgen in en verantwoordelijkheid dragen voor het productieproces. Een reductie van het aantal stappen in de voedselketens kan helpen die transparantie te bereiken. Lokale voedselproductie kan hier aan bijdragen, maar alleen als beleidsmakers lokale ketens in de breedste zin van het woord zien. Daarnaast is het essentieel dat de keuze die consument maakt verandert. Nu koopt de consument vooral het goedkoopste product. Door voorlichting en uitbreiding van het assortiment in supermarkten kan die keuze enigszins veranderen. Een grootschalige verandering is alleen te verwachten wanneer duurzame producten vergelijkbaar in prijs zijn aan niet duurzame producten. Hiervoor zal een verandering in de prijsbepaling van producten, bijvoorbeeld door belastingen, moeten plaatsvinden.

Tenslotte blijkt uit het onderzoek dat de relatief intensieve en industriële landbouw in Nederland het moeilijker maakt voor boeren om over te stappen op extensieve vormen van lokale landbouw. De vele investeringen die in het boerenbedrijf zijn gedaan worden niet zomaar terzijde geschoven. De geraadpleegde onderzoekers geven echter aan dat het ook mogelijk en zelfs wenselijk kan zijn om op zoek te gaan naar intensieve en industriële vormen van lokale voedselproductie vanuit het oogpunt van duurzaamheid. Efficiëntie speelt ook een rol bij het bepalen van duurzaamheid.

Het onderzoek heeft aangetoond dat lokale voedselproductie op verschillende manieren kan worden gezien. Hoewel de huidige initiatieven vooral op kleine schaal ontstaan, is het niet ondenkbaar dat op een groter schaalniveau, op een intensieve manier, mogelijkheden bestaan om tot een duurzaam voedselsysteem te komen. Huidige initiatieven zijn wel een voorbeeld voor consumenten en beleidsmakers en kunnen helpen om uiteindelijk tot een beter, duurzaam voedselsysteem te komen.

Preface

I started work on my thesis quite some time ago. It proved to be difficult to decide on a research topic. That the topic had something to do with food production was clear from the start. However, many topics can be dealt with when considering food production as a topic. I started out exploring agroclusters, moved to a comparison between agroclusters and local food production, which I worked with during the Atelier Landscape Architecture and Planning, and ended up researching local food systems specifically. Switching topics took quite some time, but the time was not wasted. As with all projects, many lessons were learned: about the research process, the content and about myself.

Until recently, the topic of food production was only marginally addressed in planning literature. I think this is strange, as food is such an important aspect of life and its production affects more than half of the Dutch landscape. This thesis is partly meant to show the relevance of a connection between food production and planning. I have chosen to focus specifically on local food. The main reason for this choice was my assumption that local food could make a difference in our current unsustainable food system.

When a final choice for the topic was made things accelerated, interviews were planned and carried out. This part of the research I enjoyed most. Talking to enthusiastic experts helps you to understand the practical world. It teaches you to look beyond your own field of study. Through the interviews, it became clear that local food production has very interesting effects. However, I also came to realize that local food production alone is not the solution. A focus on sustainable food production is preferred, for local food *as well as* conventional food. I hope this research shows the importance of working towards a sustainable food system, as well as the role planners have in the development of food systems.

Writing this thesis would not have been possible without the help of several people. First of all I would like to thank the different respondents of the interviews: A. and M. Visser, K. Nijhof, J.E. Jansma, P. Brandsma, dr. J.W. van der Schans and dr.ir. M. Wagemans. The conversations we had made it possible for me to compare the international and Dutch situation, and enabled me to reflect on the research topic. Secondly, I would like to thank Gerrit-Jan Carsjens for his supervision and Arnold van der Valk for taking time to read and grade this thesis. Without the guidance of Gerrit-Jan Carsjens, I would probably still be working on my research proposal. The choice for the current research topic proved to be very interesting, although I myself had some doubts in the beginning.

I would like to thank my parents and Sanne for reading and correcting part of the report and their continuous support. Lastly, I would like to thank various people who were there to discuss the report or just to drink coffee or have lunch: Jasper, Stijn, Marlies, Maarten and Bram.

Content

Summary.....	V
Samenvatting.....	VII
Preface.....	IX
1 Introduction.....	1
1.1 From local to global food chains and back.....	1
1.2 Spatial planning and food.....	2
1.3 Research focus.....	3
1.4 What is local food?.....	3
1.5 Research Questions.....	4
1.6 Methodology.....	5
2 Understanding local food chains.....	9
2.1 Local food production in a broader perspective.....	9
2.1.1 The rise of conventional agriculture.....	9
2.1.2 Economical change.....	9
2.1.3 A change in society.....	11
2.1.4 Farming in metropolitan areas.....	12
2.2 A definition of local food production.....	16
2.2.1 Alternative Food Networks.....	16
2.2.2 A definition of local food.....	19
2.3 Organisation of Alternative Food Networks.....	23
2.3.1 Distribution methods for AFNs.....	23
2.3.2 Aspects that influence local food chains.....	26
2.3.3 The successful local food system: problems and possibilities.....	28
2.4 Conclusions.....	30
3 Dutch local food production.....	33
3.1 Finding examples of local food in practice.....	33
3.2 Local food chains, descriptions and results.....	35
3.2.1 Case 1 'Landwinkel': Speciality shops in the urban fringe.....	35
3.2.2 Case 2 'Agromere': building a local food neighbourhood.....	38
3.2.3 Case 3 'Landzicht': Organizing a box-scheme in a metropolitan area.....	42
3.2.4 Case 4 'De Nieuwe Ronde' a CSA and pluck-your-own farm.....	45
3.3 Differences and similarities in the cases.....	47
3.3.1 The scale of local (food).....	48
3.3.2 Spatial aspects that influence local food chains.....	49
3.3.3 Making a change in consumer behaviour.....	50
3.3.4 The role of planners and the government in local food development.....	51
3.3.5 Other aspects that influence the development of local food.....	52
3.4 Conclusions.....	53

4	An scientific view on Dutch local food chains	55
4.1	Explaining the development of Dutch (local) food production	55
4.1.1	Historical development of Dutch food chains	55
4.1.2	The failure of the current system	56
4.2	A focus on local or sustainable food production?	57
4.3	Developing local food systems	59
4.3.1	Importance of location	59
4.3.2	Non-spatial problems in local food systems.....	60
4.3.3	Solutions for Dutch (local) food production.....	63
4.4	Concluding remarks.....	66
5	Planning for (local) food systems	69
5.1	Changing to a sustainable (local) food system	69
5.1.1	Stimulating local food by integrating rural and urban activities	69
5.1.2	Defining local food production.....	71
5.1.3	Intensive sustainable food production as alternative	72
5.1.4	A necessary change in society?	73
5.2	Recommendations for further research.....	74
	References.....	77
	Appendix A: Interview questions case-study (Dutch)	i
	Landwinkel.....	i
	Agromere.....	i
	Groenten Abonnement	ii
	De Nieuwe Ronde.....	iii
	Appendix B: Interview questions researchers (Dutch).....	v

1 Introduction

In this explorative research, the influence of spatial aspects in the landscape on the development of local food production will be studied. In this introduction, the different elements of the research topic will be explained. In section 1.1, a short description of recent developments in agriculture is shown. The surprising absence of food as a topic in planning is discussed in section 1.2, as are the recent efforts of planning science to incorporate food in planning research. The research focus will be sharpened in section 1.3 and a preliminary definition of local food will be given in section 1.4. Finally, in section 1.5 the research questions will be stated, followed by a description of the methods used in the research in section 1.6.

1.1 From local to global food chains and back

Since the Second World War agriculture in the Western world has developed from local small scale farming to a global food complex (Maas, 1994). Food is shipped to Europe from all over the world. To remain competitive in the growing world market, farmers in Europe intensified their production. Farms became increasingly large-scale businesses. Technology replaced a large part of the labour force. In the Netherlands yields improved even further due to improving technologies. This has led to consumers in western countries being able to choose all kinds of food from all over the world for a reasonable price (Pfeifer et al, 2009). However, the scaling up of agriculture also brought new problems.

In recent years, people increasingly question the way agriculture affects the environment. Food safety, animal health and well being, and environmental impact each became a problem at one time or another (Morgan et al, 2006). The anonymity of the world food makes it hard to control. Due to different outbreaks of *Listeria*, *Salmonella*, *E. Coli*, BSE and Foot and Mouth Disease, consumers are no longer sure if large-scale food production leads to safe and honest food. This has led to a counter movement (Morris & Buller, 2003); consumers are now willing to pay more for food that seems to be safe, where more attention is paid to animal well-being and in which the environmental impact is controlled (Seyfang, 2006; Saunders et al, 2006; Pretty et al, 2005). Besides the shifting consumer preference, also other developments in current agriculture in the Netherlands influence the agricultural landscape. Although agriculture is still the biggest land-use in the Netherlands, it is often replaced by both city and nature development (Hidding & van der Brink, 2006).

In reaction to these developments, biological and local food initiatives have emerged. Their aim is to provide honest food as described above. These foods are often better traceable which is thought to lead to farmers being more careful in the production process. In addition, local and biological foods take care for the environment and maintain landscape qualities. The shift towards more sustainable farming can also be recognised in recent European legislation. The production stimulation will largely be dropped in favour of subsidies for blue and green services (Europees parlement bureau Nederland & Parlementair documentatie centrum, 2009; Pfeifer et al, 2009). Dutch policy on agriculture has two approaches: one

focussing on agribusiness and export, the second focussing on sustainable agriculture (LNV, 2005).

In this research local food will be looked at from a spatial planning perspective. While planning has always been an interdisciplinary field of study, interested in all kinds of developments in the landscape, the next section shows that looking at food systems is not as obvious as thought.

1.2 Spatial planning and food

Spatial planning is a discipline that connects various other disciplines to understand and influence the spatial layout of the landscape. Planning could be seen as a discipline concerned with the living environment of people. All necessities for modern living have a place in the planning. Although many disciplines, such as water (quality and quantity), clean air, housing, jobs etc., have indeed been incorporated in planning, food production has seldom been an issue dealt with in spatial plans. Food is generally seen as something that is always present in the western world and as such is often forgotten in the planning process.

The previous section showed that since the 1990s, several developments in agriculture have occurred. These developments can no longer be explained by traditional economic planning models (Kaufman in Jongman, 2004). While economic models predicted an ongoing industrialisation and an increasing scale of agriculture in Western countries, in some places the opposite occurred: farmers went back to using less chemicals and fertilizer. There seems to be an increasing group of consumers that focuses on the provenance of food. This movement occurs throughout the western countries, but is not equally present in all areas. The development of alternative food systems affects the spatial layout. Therefore, it is important that planning science works towards a better understanding of the role food plays in planning.

Various fields of study have conducted research on alternative food systems. Consumer behaviour, political and social motives of farmers, environmental effects of local food production and the emergence of organic food production have all been explained (Zeithaml, 1988; Grundert, 2005; Morgan et al, 2006). Surprisingly local food is only marginally addressed in planning literature. Pothukuchi and Kaufman (2000) describe the strange position of food in planning. While food is essential for everyday life and agriculture and its respective food system largely influence the landscape, planning rarely concerns itself with the food system. Several authors of other scientific disciplines call for governmental stimulation of the development of local food chains, but it is unclear how such a development could be stimulated. Without planning research on the development and effect of local food systems, it is difficult to regulate and/or stimulate the local food system.

In planning science the need to understand food systems has slowly been acknowledged in the last decade (Almere Food Conference, 2009). The Almere Food Conference (2009), at which planning scientists and practitioners from several countries where gathered, showed that additional research is needed to understand

food systems. In a later stadium, this knowledge can be used to guide the development of these systems by incorporating them in the planning process.

1.3 Research focus

The aim of this research is to contribute to the recent scientific debate on food and planning. Studying the relation between food and planning in general is far too broad for a thesis. Therefore, several choices have been made.

First of all, it is important to understand that various types of alternative food networks exist as is shown in Figure 1.1. This research will focus specifically, as the title suggests, on local food. A definition of what is considered to be local food will be given in the next section. Because little is known about this type of alternative food systems, literature about other alternative food systems such as organic agriculture is used as a starting point for the research, both in this chapter as in chapter 2.

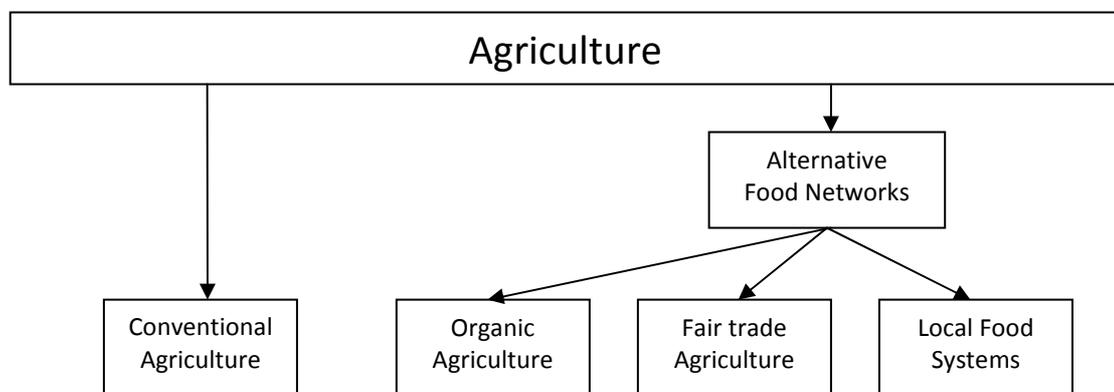


Figure 1.1 The different forms of Food Networks as discerned for this research (based on: Holt (2005, 2007))

Secondly, the research is written from a spatial planning perspective. This means that especially the spatial aspects that influence these systems are of importance. However, also the organisation and history of local food systems are essential in order to understand the developments within the local food sector. Furthermore, the aim of the research is to come to recommendations for the government (specifically planners) on how to deal with local food chains.

Lastly, the research has its focus on understanding local food systems in the Dutch context. Although literature about organic and local food can be found based on case-studies in various countries, information about the Dutch context is limited. The aim of this research is to give insight in this Dutch context of local food production.

1.4 What is local food?

The concept of local food will be further explained in the theoretical framework. To understand the implications for the research for now a definition will be used as given by the English Soil Association (Holt, 2005: section 7). The local food system is:

"A system of producing, processing, and trading, primarily of organic and sustainable forms of food production, where the physical and economic activity is

largely contained and controlled within the locality or region where it was produced, which delivers health, economic, environmental and social benefits to the communities in those areas."

This definition will be used as a starting point for chapter 2, where a final definition will be given based on several articles.

Furthermore, it is important to give a first overview on the rationale behind local food production. According to Jones (2001; in Seyfang, 2006: page 386):

"The principal environmental rationale for localising food supply chains is to reduce the impacts of 'food miles'—the distance food travels between being produced and being consumed —and so cutting the energy and pollution associated with transporting food around the world."

Local food chains produce and sell food in one region mainly in order to reduce food kilometres. Although this is the main reason, food safety is as described before an important motive for consumers to choose for local food. The range that is seen as local varies greatly throughout the world. Jones et al (2004) have found great differences in the distance that is counted as local: Whereas the National Association of Farmers' Markets in the U.K. suggests 30 miles as ideal distance, the London Association of Farmers' Markets suggest 100 miles as acceptable distance. In addition, the place where local food is sold differs as Morgan et al (2006) show. Local food can be sold by farmers themselves at home or at farmers markets but can also be found in special food shops and even some supermarkets.

The definition of 'local' in the term local food will be further explored in chapter 2. For now, it is important to note that many different opinions exist and various forms of local food production can be discerned in practice.

1.5 Research Questions

In the previous sections, the topic of this research, and the choices made to make it a manageable research, have been explained. In this section, the problem statement and the research questions are explained. The previous sections show that although much is written about alternative food networks, little is known about local food chains and no literature is available on the specific Dutch context. This leads to the problem statement:

Although much has been written about local food, its organisation, and its effects in scientific literature, little is known about the spatial aspects that influence the development of local food chains, especially for the Dutch context.

The objective for this research is to give a better insight in the development of Dutch local food chains by researching which spatial aspects influence this development. This will enable other researchers to better compare and explain the development of local food chains in different parts of the world. Furthermore, the research aims to advise the government and spatial planning in the Netherlands on actions that need to be taken in order to stimulate local food production in the Netherlands.

Research questions

To be able to reach this purpose the research has the following question at its core:

What spatial aspects affect the development of local food systems in the Netherlands, and how should spatial planning and the government deal with this development?

To tackle the research question different sub questions have to be answered. The main question can be split into two sub questions, which are further split into guiding questions. First, scientific knowledge will be acquired in order to understand the research topic. This includes general information about the food system, related to the development of local food systems. The question posed for the first part of the research is:

How is the development of local food chains described in scientific literature?

This question can be divided in the following sub-questions, which will be answered throughout the research:

- What should be considered as local food?
- What causes local food chains to be developed?
- What different types of local food chains exist?
- Where are local food chains to be found?
- What spatial aspects affect the development of local food chains?
- What other aspects influence the development of local food chains?

The second part of the research will be focussed on the Dutch context. Two important questions will be answered based on the information found in the Netherlands.

How are local food chains developing in the Netherlands?

How should spatial planning and the Dutch government deal with the development of local food systems?

This research question is divided in the following sub questions:

- What should be considered as local food in the Netherlands?
- What spatial aspects do stakeholders mention to be of importance for the development of local food?
- What other aspects influence the development of local food in the Netherlands?
- What could spatial planning and the government do to stimulate the local food sector?

1.6 Methodology

Several steps are taken to gather information in order to answer the research questions. First, a literature study will be conducted on local food chains in general. As the development of local food chains is an almost unexplored planning theme,

there is little planning literature to be found on the subject. Therefore, literature from other scientific domains is used in chapter 2 to describe this development. Furthermore, the topic is broadened to involve research done on other types of alternative food networks. Based on these sources the different types of local food chains are explained, as are the different spatial aspects that play a role in the development of local food chains.

In the third and fourth chapter, the second set of research questions will be answered that deal with the Dutch context of local food production. For chapter 3, four cases were selected to serve as an example of Dutch local food production. Each case is different in its scale and its type of distribution in order to come to a representative overview of Dutch practice. This choice is further elaborated in the third chapter. For this part of the research, it was chosen to conduct semi-structured interviews with the respondents in the four selected cases. Chapter 3 already makes a connection between the theoretical knowledge from chapter 2 and the results from the interviews.

Because little literature is available on local food systems in the Dutch context, two scientists that work with local food chains in the Netherlands were consulted. These researchers were asked to give their vision on Dutch local food production. They were also confronted with the results from the case study and the international literature. As both have been working in this field for quite some time, their opinion on Dutch local food chains is very relevant to place the theoretical and case information in perspective.

The results from chapter 2, 3 and 4 are combined in the discussion. The central question will be answered and the various themes as uncovered in the chapters are discussed: differences in results between theory and practice will be clarified if possible. This leads to several conclusions regarding local food in general and, more important, on the Dutch context of local food. Several recommendations for planners and the government how to deal with local food systems will be given. Furthermore, new (research) questions are given that need to be answered to understand the development of local food systems. Figure 1.2 shows the setup of the research as it has been carried out.

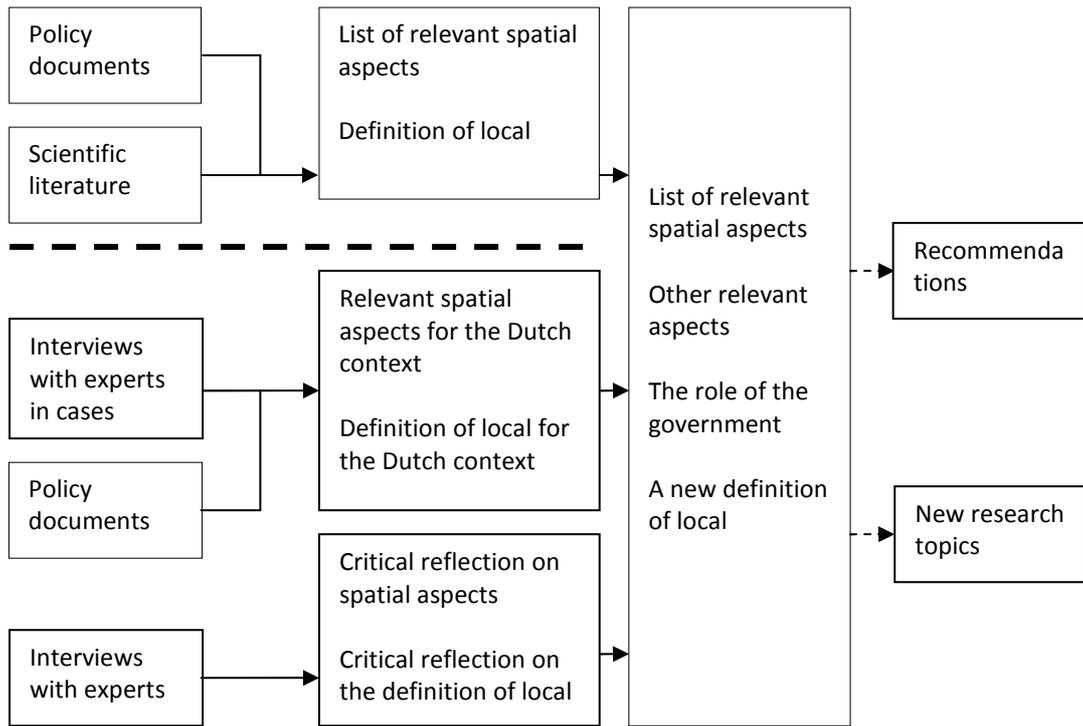


Figure 1.2 Schematic representation of the research

2 Understanding local food chains

In this chapter, the existing body of knowledge on local food production, with respect to organisation and development of local food systems, will be explored. The central question that is answered in this part of the research is: *How do local food chains develop according to scientific literature?* This is done by first explaining the broader context of local food production. Several trends, developments in the way consumers think about food will be shown.

To be able to research local food chains it is necessary to give a definition of local food production. This will be done in section 2.2, based on various definitions of alternative and local food systems. Because of the limited literature on local food chains, also literature about organic food systems and alternative food systems in general is used. Section 2.3 will deal with the organisation of local food chains; how are the networks functioning and what aspects influence these networks. Section 2.4 will highlight the most important conclusions from this chapter.

2.1 Local food production in a broader perspective

Local food production did not just suddenly come to exist. Several societal and economical developments in society and conventional agriculture have led to the growth of alternative food networks of which local food is one part.

2.1.1 The rise of conventional agriculture

Up to the 1990's, conventional agriculture was the dominant and almost only form of food production. Product chains and farming methods became increasingly efficient. Labour force was often replaced by machinery. Pesticides and fertiliser led to more and higher quality crops. The European Union and other western countries had production support, such as the Common Agricultural Policy (CAP), available to stimulate mass production for the world market.

The conventional food chain is focussed on mass-production where a strict spatial link between producers and the urban markets no longer existed (Heimlich, 1989). Moreover, all steps in the food chain are decoupled which makes it difficult for consumers to have a direct control over product quality. This makes it necessary to have institutionalised food quality guarantees (Renting et al, 2003). Although the conventional system at first seemed to be stable, several changes took place, both economical and social, that called for changes in the food system. These changes are the reason new food systems emerge. In order to explain the rise of local food systems, the changes in the economic system and in society are shown in the next two sections. Section 2.1.4 will discuss the role that presence of a city, or urban activities in general, play in this development.

2.1.2 Economical change

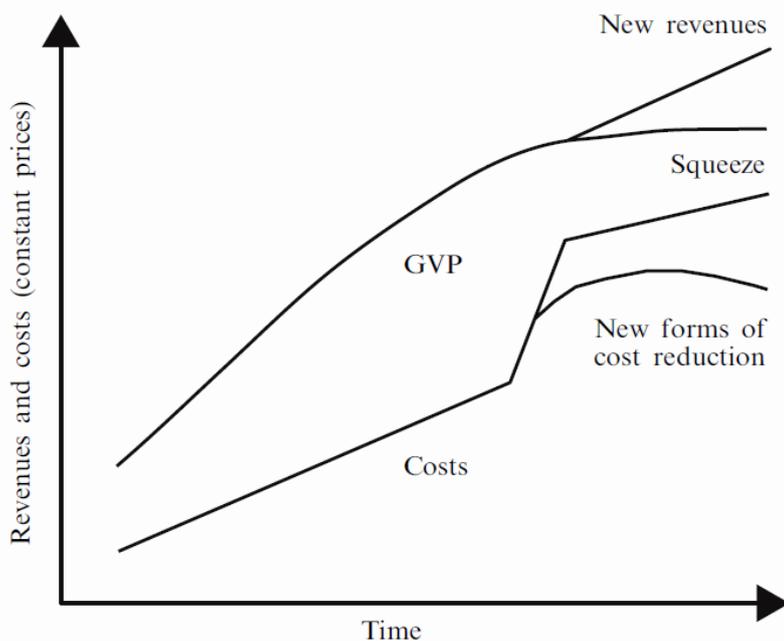
From a producer perspective, the pursuit for higher production led to several problems. Farmer incomes were under pressure. In conventional agriculture, sustaining farm incomes is done by increasing the total production volume and simultaneously enhancing the technical efficiency of this production (van der Ploeg

et al, 2000 in Renting et al, 2003). For several reasons this method of production led to overproduction. The world food market became saturated. The food industry tends to buy the cheapest product, without regard of the location it is produced. It became difficult for farmers to sell their products. To be able to sell they had to lower prices, which in turn led to new pressure on their income (Renting et al, 2003). Western countries started to subsidise production to help farmers gain a sustainable income. This was done by guaranteeing minimum prices for products. The governments bought excess products and dumped it on the world market for very low prices, making it impossible for third world country farmers to compete (Renting et al, 2003).

Towards the end of the 20th century total production volume could no longer be expanded because of the saturation of markets, increased possibilities for sourcing food industries with non-agricultural primary materials, and growing opposition to the 'dumping' of surpluses on world markets. Unfortunately, farm incomes were still under pressure (Renting et al, 2003). At the same time, production costs increased dramatically. Farmers were trapped in a 'technological treadmill', pressing farms to invest continuously in new technologies so as not to lose out in the race for the lowest production costs. In addition, farms were confronted with several obligatory investments springing from new environmental regulations, animal-welfare standards, and sanitary measures (Renting et al, 2003). Now that the Common Agricultural Policy (CAP) subsidies are removed, exporting products has become even less attractive (Holt, 2005). In the UK:

"The loss of guaranteed markets under the CAP reform created problems for many farmers, often managing small traditional family farms, that were unable to compete against agribusiness in the free market economy and were prompted to reconsider production and marketing strategy." (Holt, 2005: section 2)

Because of these developments, conventional farmers have to deal with higher costs, while the price of products stays the same, or is even lowered. The profits are as such structurally decreasing (Renting et al, 2003). According to Holt (2005: section 5), the traditional agriculture market is destabilised due to *"rising farmer dissent at contractual inequalities offered by multiple retailers"*. The old solutions are often no longer possible, as farm production is increasingly limited through quota systems and environmental regulations. The farmers are trapped in a technological treadmill and have to deal with a 'price squeeze'. Figure 2.1 shows the price squeeze that farmers experience. The figure shows that farmers on one hand have to deal with stagnating prices in order to remain competitive with farmers all over the world. On the other hand, they have to deal with increasing production costs because of stricter regulations. In order to remain profitable farmers have to keep innovating in order to produce more on the same amount of land. This innovation brings more costs. This leads to the so called treadmill. Both Renting et al (2003) and Holt (2005) see the old market as a problem that causes farmers to either search for new ways to produce or considering stopping their business.



Note: GVP—gross value of production.

Figure 2.1 The price squeeze for farmers (Renting et al, 2003)

Solutions can be found in two ways. The farmer can search for ways to earn new revenues: new ways of increasing their income such as diversifying into new activities (nature and landscape management, agritourism etc), or by increasing value added on farm products (quality production, on-farm processing, direct selling, etc). Another solution would be to find (new) ways of reducing costs of maintaining the current production. Renting et al (2003) mentions the possibility of reducing costs of legislation and administrative work as an option to reduce costs. Especially when done in a collective effort by farmers and processing companies, this can be seen as a new form of cost reduction. The sudden growth of alternative food networks as can be observed throughout the world is directly related to these developments:

"A growing number of farmers are now prepared to try their luck with alternative forms of production and new ways of marketing, in the conviction that mass food production for their farm no longer provides continuity and sufficient income." (Renting et al, 2003: page. 397-398)

2.1.3 A change in society

In recent years not only the economic position of farmers has changed. As shown in the previous section the consumers lost the direct relationship with producers. Although national institutions guarded food quality, several animal diseases and food contaminations such as *BSE*, *Ecoli*, foot & mouth disease, and dioxins residues in milk, corroded the trust of consumers both in the institutions and the industrial food sector at large (Holt, 2005; Renting et al, 2003). According to Holt (2005: section 5):

"Food lobbyists are increasingly concerned about the lack of institutional transparency in agribusiness governance structures that dominate food availability."

The food sector has grown to a chaotic system in the eyes of consumers (Holt, 2005; 2007), they no longer believe or trust unconditionally in the expert control system that is in place (Renting et al, 2003). As a reaction, product chains try to improve traceability of products.

Next to a safety issue, several other concerns affected the conventional food chains. Increased environmental awareness prompted questions about conventional farming, especially animal welfare, the use of chemicals, and the use of fertiliser, became issues addressed by consumers, sometimes through pressure groups. Because of this awareness a potential market for food products that are distinguished in credible ways on one or more of the contested quality aspects of food emerged (Renting et al, 2003; Clancy, 1986 in Heimlich, 1989). As Marsden (1998 in Renting et al, 2003: page 393) states:

"Food markets are becoming more differentiated on the basis of a range of socially constructed food quality criteria".

This results in the emergence of new quality-food markets in addition to (and superimposed on) existing anonymous mass food markets. Food consumption is increasingly connected to lifestyle of people. Being able to buy 'quality' products is a sign of wealth. Due to this changing perception on food consumption, all kinds of images and expectations are projected on food products. Food as such is increasingly 'designed' and 'socially constructed' (Renting et al, 2003).

For producers this means that there is a changing demand for differentiated food products:

"Access to markets is increasingly conditioned by the capacity to meet specific criteria concerning the variety and appearance of products, membership of good-practice labels, and the capacity for flexible delivery." (Renting et al, 2003: page 397).

Although the conventional food chain is adapting to the new situation, it does so by forcing farmers to meet these criteria, often without additional financial reward for the involved farmers.

The social and economical changes made it possible for farmers to step out of the conventional food chains and try to cater to the new demands in the market. Alternative food networks (AFNs) are being constructed. While a lot of theory is available on alternative food systems, most researchers assumed alternative food systems to be mainly a solution for peripheral regions. It was seen as a key measure to develop peripheral regions. The development of AFNs however also took place in metropolitan areas. According to Renting et al (2003), these new food chains could not be predicted with the existing theories on conventional food chains. To be able to understand the development of AFNs in near cities, the development of farming in metropolitan areas will be discussed in the next section.

2.1.4 Farming in metropolitan areas

An important aspect mentioned in literature has to do with change of agriculture systems with regard to their relative position to the city. Several studies show that

innovation, including local food initiatives, is more likely to happen near cities in what we can call the metropolitan areas. Heimlich (1989) specifically researched the development of what he calls metropolitan agriculture: Agriculture in metropolitan areas, under pressure from urban development.

According to Heimlich (1989), several differences exist between metropolitan agriculture and rural agriculture. Metropolitan farms use one-third more fertilizer and twice as much farming chemicals per acre. Furthermore, these farms hire three times the labour rural farms do and have to pay more interest for the land. In the US, metropolitan farms tend to be: smaller, farmed more intensively, raise a higher value per acre, are better in adapting to pressure, sell high value fruit, dairy products and speciality livestock and generally don't make use of funding, compared to rural farms. Ten percent of the metropolitan farms sell locally. Metropolitan agriculture has adapted to survive in a highly competitive environment. It has adapted to changing social and demographic trends (Heimlich, 1989). This is specifically important to note for the Dutch situation. The Netherlands can be seen as one big metropolitan area, where the land-use is directly influenced by the nearby cities.

Jarosz (2008) describes how rural areas surrounding cities are restructured as the city expands. Agro-industry moves out of the area in search for cheaper land, water and labour. Small-scale farms take their place in the metropolitan area. The urban fringe is thus characterised as a dynamic and changing landscape. For conventional agriculture this can be problematic. Research by Heimlich (1989) and Beauchesne & Bryant (1999) show several negative effects of urbanisation on agriculture. First of all there is an obvious reduction of available land for agriculture, as the city expands and claims land for urban and recreational land-uses. A reduction of available land results in higher land prices and higher interest farmers have to pay for land. Heimlich (1989) concludes that farms in metropolitan areas generally generate higher net returns from the land in order to be able to compete with urban land uses.

Secondly, there are several problems in combining city functions with agriculture (Beauchesne & Bryant, 1999). Agriculture is not always compatible with the other land-uses in the urban fringe. Inhabitants of the urban fringe for instance can experience the smell of manure as a problem. Furthermore farm traffic can pose a problem in living areas. Heimlich mentions increased vandalism and restrictions in the use of fertilizers and chemicals as problems of agriculture in the urban fringe.

Urbanisation is not necessarily a negative development. Although research in the 1990's primarily focussed on the negative impact and finding solutions to preserve and protect agricultural areas (Beauchesne & Bryant 1999), in recent studies the possibilities of agriculture in metropolitan areas becomes a central theme in research. Recently there was a conference on the theme food and planning that dealt with food in metropolitan landscapes held in the city of Almere in the Netherlands (AESOP Sustainable Food Planning Conference, 2009). Several researchers with various scientific backgrounds showed that the combination of food

and planning, of city and country, is a new and growing theme. Urban development and agriculture are no longer solely seen as opposites.

The main positive element is the closeness of the market. The distance to potential consumers is smaller. As such, farmers can find more direct consumers near their farms and experience an increased demand for fresh and locally produced products (Jarosz, 2008; Heimlich, 1989). Essentially a reduced distance leads to less transportation costs for farmers or retailers and fresher products for consumers.

Next to a decreased distance between consumer and producer, Heimlich (1989) noted a change in consumer habits and settlement patterns. When more people moved into the urban fringe, he saw increased environmental awareness, a change of lifestyle and consumer preferences in the urban fringe population. Beauchesne & Bryant (1999) also argue that the population of the urban fringe includes segments that are more environmentally conscious. Not only do consumers demand other types of food, they are also interested in other modes of food provisioning, such as farmers' markets and box schemes (Jarosz, 2008).

Urban pressure on fringe areas may also trigger farmland preservation activities, zoning regulations and urban growth management policies as inhabitants of that fringe gather to protect the landscape they live in and enjoy (Jarosz, 2008).

Based on the above elements it seems there are still opportunities for agriculture in the urban fringe. Beauchesne & Bryant (1999) see stress as a positive element to the development of agriculture in the urban fringe. Moreover, the study of Heimlich showed urban farmers to be less dependent on governmental support schemes and more resistant to economic crises. It could be said that agriculture is a valuable asset to the urban fringe, and the urban fringe is the area where agriculture is strongly innovative. Based on the aforementioned studies it could be assumed that many alternative networks exist or are being developed in the Netherlands.

Different developments in the Urban Fringe

Farmers deal in different ways with urban pressure, which leads to change. Three options can be discerned based on Beauchesne & Bryant (1999). The first option is for farmers to move out of the area, which leads to *degradation* of the urban fringe. The Dutch term 'verrommeling' is used to describe the development of the fringe area into a fragmented landscape. Farmers move away because they are no longer competitive to other land uses in the fringe. They are not able to raise profits to sustain a living.

The other two options are ways for farmers to improve their income and remain competitive to other land uses. Farmers can *intensify* production trying to get higher benefit from the same land and labour. Glasshouses such as in the Dutch Westland area are an example of this development glasshouses dominate the area that is under urban pressure from Rotterdam. However, intensification is not the only option for farmers in a metropolitan area. Intensification often asks for a big investment from the farmers as it heavily depends on technology. Intensification is

not always an option, especially for livestock intensification leads to extra trouble for the surroundings. Increased smell and pollution can cause serious problems when near to urban areas.

A different solution for farmers is to *innovate* or *adapt*, trying new products, production methods and marketing schemes. It is these last areas where alternative food networks can be found. Farmers try to either grow more specialised products, to take care of animals for city dwellers, or to try to profit from side activities such as recreation. In addition, different marketing schemes are explored such as box-schemes or pluck-your-own-farms. These activities depend on finding interested local consumers.

Figure 2.2 shows these possible developments: a city with a broad urban fringe surrounded by a rural area. The urban centre has no agriculture. The old urban fringe is most developed with respect to alternative food networks whereas the new urban fringe is only starting to adapt to the pressure of urban activities. The rural area is home to the traditional large-scale agriculture (Heimlich 1989). In the figure, the three development options: intensification, adaptation and degradation, are all represented for the city. Which of these different developments occurs in a given area depends on a many factors.

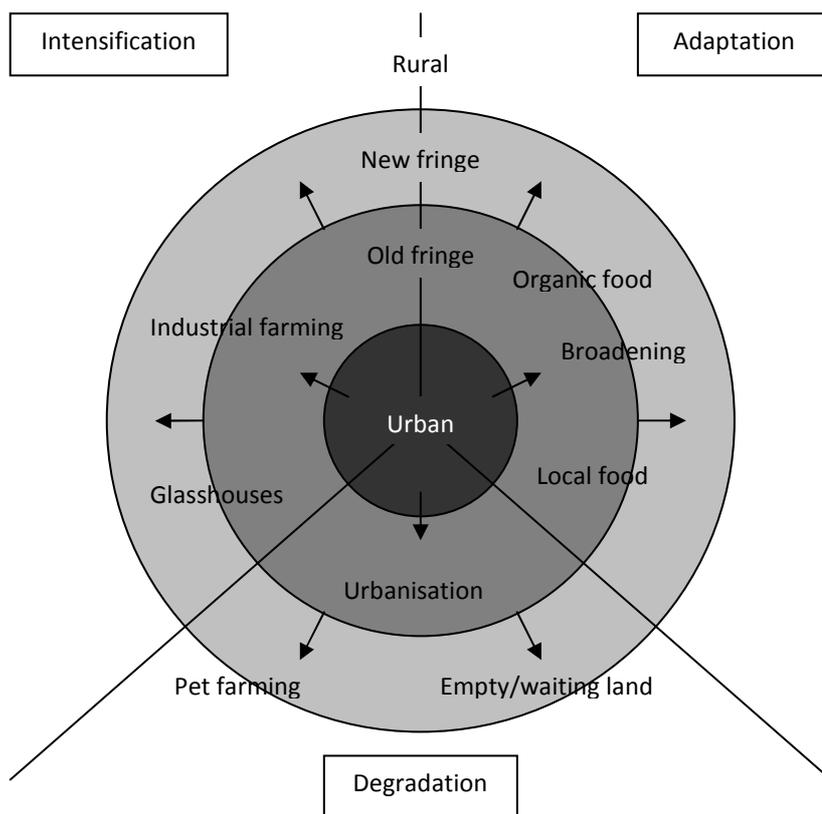


Figure 2.2 Three options for agriculture in the urban fringe, based on Heimlich (1989) and Beauchesne & Bryant (1999)

"These forces of change can be either positive or negative for agriculture, the outcome depending upon the interplay between the local and regional, positive and negative, forces of change. The urban fringe mosaic is thus socially constructed by local, and regional, actors operating within the economic, socio-

cultural, political and biophysical contexts at all scales.” (Marsden et al., 1993 & Bryant, 1995 in Beauchesne & Bryant, 1999: page 321)

In the research, degradation and intensification will not be explored. Adaptation will be the focus of the study with the metropolitan area (especially the urban fringes) as its case area. Existence of both urbanisation and rural restructuring in the urban fringe leads to a dynamic system, where, according to Jarosz (2008), Alternative food networks (AFNs) develop. AFNs themselves are fragile systems also because they exist in such a dynamic surrounding.

2.2 A definition of local food production

Section 2.1 explained the different developments in agriculture in the past two decades. Especially in the urban fringe, quite some changes took place, forcing farmers to adapt. In this section, Alternative Food Networks and the different types of alternative food that exist will shortly be described. Afterwards the focus will shift towards local food systems. The section will end with a definition of local food chains that is used for this research.

2.2.1 Alternative Food Networks

No clear definition exists for Alternative Food Networks (AFNs) as various organisations and scientists use the term in different ways and with a different perspective. This research is not the place to come with a definition of AFN, but to be able to understand the development of local food chains it is important to recognize their place in the broad AFN movement. Therefore it is useful to give an impression of what an AFN is.

The term AFN is used to describe various developments in agriculture that differ from conventional agricultural food chains. Jarosz (2008) has tried to give a definition by describing which elements are necessary to call a food chain an AFN:

“Alternative food networks (AFNs) are commonly defined by attributes such as the spatial proximity between farmers and consumers, the existence of retail venues such as farmers’ markets, community supported agriculture (CSA) and a commitment to sustainable food production and consumption.” (Jarosz, 2008: page 231)

Jarosz sums up more elements of Alternative Food Networks. First of all alternative food networks can be recognized by having shorter distances between producer and consumer. While in the above definition the focus is on spatial proximity this can also be seen as fewer middlemen in the food supply chain. Distance should not always be taken as food miles. Secondly, AFNs can be recognized by smaller farm size and scale using organic or holistic farming methods. This directly opposes industrial agribusiness farming methods. Another element is the existence of food purchasing venues such as farmers’ markets together with the existence of food cooperatives; community supported farming initiatives (CSA) or box-schemes; and the existence of special incentive programs such as local food-to-school linkages. Lastly, alternative food networks are committed to social, economic and environmental dimensions of sustainable food production, distribution and consumption. The whole food chain is more aware of environmental and social injustice issues (Jarosz, 2008).

Renting et al (2003) use the term alternative food networks as a broad embracing term to cover newly emerging networks of producers, consumers, and other actors that embody alternatives to the more standardized industrial mode of food supply (Murdoch et al, 2000 in Renting et al, 2003). They discern different types of AFNs or short selling food chains (or local food chains): organic farming, quality production, and direct selling. Renting et al prefer the use of the term short food supply chain above alternative food network. Short food supply chain as term shows directly that the distance between consumer and producer is reduced, either directly or indirectly.

Interestingly the definitions of an alternative food network do no longer mention a specific place where such systems can be found. AFNs have long been advocated as one potential solution to the problems of peripheral rural regions (Renting et al, 2003). It was expected that only in peripheral rural regions AFNs would emerge. Recent research showed that regions that were highly integrated in the global food markets, such as the Netherlands and the United Kingdom, also experience a growth of AFNs whereas the old theories predicted a continued expansion of the conventional food production systems along the lines of modernisation. There is a need for new theories on the emergence of AFNs (Renting et al, 2003). Renting et al. further mention that alternative food networks are often active attempts by producers to recapture value in the supply chain. Setting up alternative food chains helps to negate the problems of the previously mentioned 'price squeeze' (Renting et al, 2003).

Many different alternative food networks

The different authors agree that there exist different forms of AFN. There are different ways to separate the various possible set-ups. Renting et al (2003) find it important to study the organization of the alternative food chains, with extra attention how to extend an AFN in time and space. They discern three types of alternative food chains: face-to-face AFNs, proximate AFNs and extended AFNs. This division is mostly based on the producer-consumer relation.

- Face-to-face AFNs are based on close contact between producer and consumer. In this system, authenticity and trust are mediated through personal interaction. Because contact is very personal, it is more difficult to attract enough consumers. Therefore different types of marketing are tried together, including: roadside sales, 'pick-your-own', farmers markets, or farm concepts like box schemes, mail order, and home deliveries. Face-to-face AFNs are mostly an initiative of a single farmer (Renting et al, 2003).
- Proximate AFNs extend their reach beyond direct interaction. Extending AFNs over longer distances in time and space makes it necessary to create complex institutional arrangements, often entailing multiple farms. Because of a bigger network, it is possible to broaden the product range. Sometimes products can be advertised under a regional quality hallmark. Not only producers can work together to start AFNs, consumer co-operations, such as in Community Supported Agriculture, help farmers by sharing risks between consumers and the farmer. Proximate AFNs often have middlemen in the food chain. These take over the role of guaranteeing product authenticity

from the farmer. Middlemen are for example: local shops and restaurants, but also specialized retailers (Renting et al, 2003).

- The third discerned group is the extended AFNs. These networks sell products outside of the region. The products are mostly locality food: food that is strongly connected to a region but which is sold outside the region. These systems rely heavily on formalized institutional codes for production, processing, and other stages of the agro food chain. These systems often operate on larger distances bringing higher costs with them and as such look like conventional food chains. They are most prone to being taken over by conventional food industries (Renting et al, 2003).

Holt (2005; 2007) makes a different division between types of AFNs. Figure 2.3 shows an overview of agriculture and the different forms of AFNs according to Holt. Holt divides AFNs in: local food, organic food and fair-trade food. The type of product that is delivered is used as the criteria for groups of AFN. The categories are not exclusive meaning that a combination of two types is very well possible. According to Watts et al (2005 in Holt, 2007), there are two alternative types of food systems. The one focuses on quality of the products, the other focuses on product-origin or 'relocalisation'. Organic food and fair trade food belong in the first category. Both focus on honest and good quality products. Organic food adds an environmental quality where fair trade food adds social quality. Local food belongs in the second category where the location is of importance. In both types of alternative food, production the cradle-to-cradle principle can be of importance. Local food systems often embrace the idea that waste and nutrient cycles should be closed on a small scale.

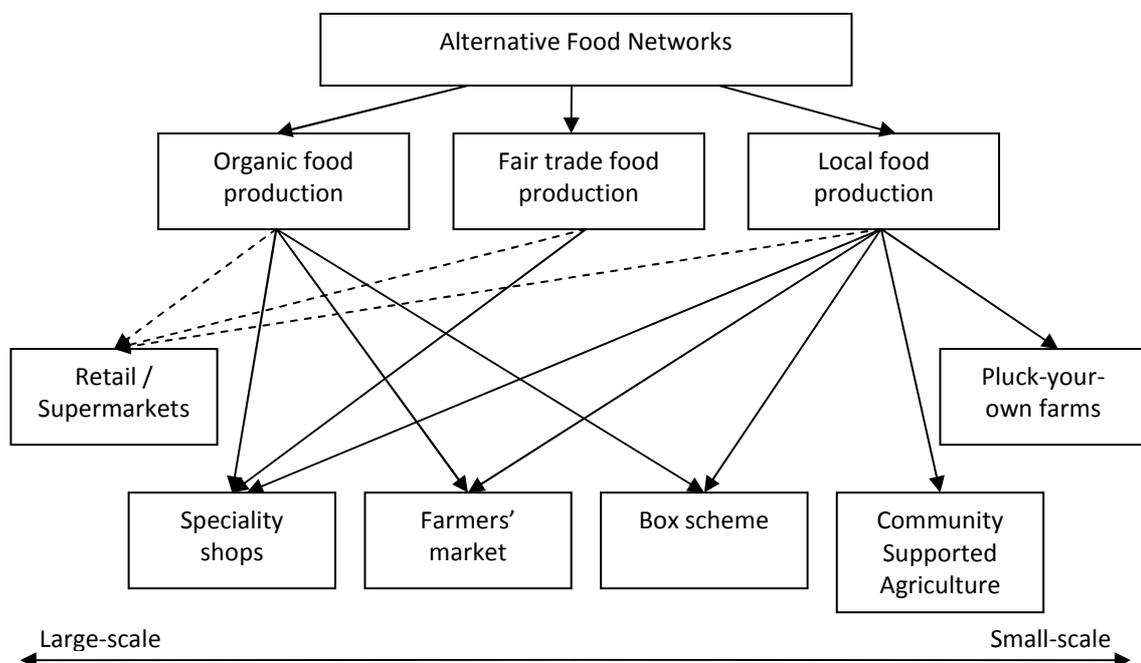


Figure 2.3 Different types of agriculture and their respective distribution schemes based on Holt (2005, 2007)

Figure 2.3 also shows the different selling strategies each form of alternative food network uses, structured from large scale (left side) to small scale (right side) distribution. Whereas conventional agriculture mostly sells in retail and supermarkets, organic fair trade and local food are mostly marketed on a local scale or in small, specialised shops. Some supermarkets do sell some fair trade and organic products, but usually this is a limited corner of the shop. Fair trade food will be outside the scope of this research. Organic and local food chains are often intertwined. According to Holt (2005):

"There is a perceived overlap, confusion even, between the sector of organic foods and the concept of local food." (Holt, 2005: section 23)

This is later explained for the UK:

"The local food sector in the UK [...] formed from the existing organic sector once the pressure on small farms of distributing organic foods through supermarkets became apparent in the early 1990s and the local sector has since retained a secondary emphasis on the ecological quality of produce" (Holt, 2007: section 1)

The organic food movement existed before the focus on local food started. While the organic food movement grew in popularity and even supermarkets started selling organic products, local food is still mostly a small-scale business. Local food chains are mostly using organic production methods though they are often not labelled as such (Jarosz, 2008). Because local and organic food networks are largely similar, it is important to also take into consideration the spatial aspects that influence organic networks and to a lesser extent fair trade networks.

The development of alternative food networks can change conventional food production from its industrial mode with long industrial chains to a more sustainable system with a transparent market and short production lines (Marsden et al, 2000b in Renting et al, 2003). This development also signals an important change for planning. Agriculture is the main land use in many countries. A change in agriculture and food systems calls for a change in rules, regulations and policy. The development of AFNs also helps agriculture to deal with its negative image because as Renting et al (2003: page 398) says:

"New food supply chains are important carriers for creating new linkages between agriculture and society, producers and consumers. They bring consumers closer to the origins of their food and in many cases involve a more direct contact between farmers and the end-users of their products."

2.2.2 A definition of local food

The previous sections explained the place of local food chains in a broad network of agricultural systems. To be able research local food systems it is important to come to a definition of local and/or local food. In literature about local food many different elements and definitions are given. The definition for a sustainable local food economy given by the English Soil Association can serve as a useful starting point. A sustainable local food economy is:

"A system of producing, processing, and trading, primarily of organic and sustainable forms of food production, where the physical and economic activity is largely contained and controlled within the locality or region where it was

produced, which delivers health, economic, environmental and social benefits to the communities in those areas.” (Holt, 2005: section 7)

This definition clearly states that local food systems encompass: production, processing and trading which *all* have to take place within a locality or region. The size of such a locality or region is unknown. In the same article, Holt found that consumers see a 30 miles radius as local in the UK. This implies that the distance may differ per country. Drawing circles around houses, cities or farms however is not necessarily the best way to approach the concept of local food. Presence of good infrastructure to nearby towns may well increase the distance one could call a product local. La Sale researched a trend called bioregionalism. Bioregionalism according to Sale (1997 cited in La Trobe and Acott, 2000: page 351) is:

“in essence, to live as close as possible to the land and to learn its capacities and limits. The bioregional economy would adapt its systems to the given bioregional resources, ‘using foods based on what the region itself – particularly in its native, pre-agricultural state – could grow’”

Obviously, this also applies to the local food sector. Again, there is talk of a region. This time the region should be ‘as close as possible’ to the consumer. On a European scale, it was tried to establish eco-regions based on several organisational aspects (Holt, 2007). The problem is that local is not necessarily bound to a region. On a border of a region, a customer could easily buy local from a producer in the neighbouring region. Selling per region holds a danger that Jones et al. (2004) warn for; local food should not be confused with locality food. Locality food is food that clearly states where it is produced, which is mostly a specified region, whereas local food is food produced and consumed within a certain radius. It seems that specifying regions as measures for local food would cause problems. A better solution would be to use a radius from each town.

It is difficult to set a strict range on local food production. As the definition of local is context dependant it would be interesting to see what local food initiatives are found through the case studies in the Netherlands and what distance is considered local in these cases. For now, a better workable clarification of local would be to compare a local food system to the conventional food system. Local food has closer physical links between producer and consumer than the conventional food system. This relationship between consumer and producer is based on trust through familiarity (Holt, 2005; Renting et al, 2003). In other words, the local food economy can be described as:

“[...] ‘short’ or ‘direct’ personalised supply chains, as an alternative structure to international supply chains distributing faceless products...”(Holt, 2007: section 2)

Distance is not the only aspect that differs between local food and conventional food. According to Holt (2005), the concept of local food encompasses the three dimensions of sustainability: environment, economy and society. Starting out with environment, local food shares a lot in ideology with organic food. Holt (2007: section 6) clarifies this by saying: Local food should be:

“Fresh, home cooked, seasonal foods consumed within local food systems – meaning the use of artisan methods, short supply chains and ‘ecological’ production systems”

Here Holt clearly gives a value to local food that can easily be different for other researchers.

Jones et al (2004) also mentions the argument that local food should help sustain the environment or at least should not do harm to it. Although not all writers agree on the specific environmental aspects relevant to sustainable local food production environments does seem to play a part in the definition (Jones et al, 2004). Consumers are primarily persuaded by health and safety arguments (social arguments) but also value agrochemical and animal welfare arguments to buy local food (environmental arguments) (Holt, 2005). Renting et al (2003) mention that by shortening the product chain consumers are able to influence the product chain. It is very well possible that because consumers want environmental and animal friendly products the local food sector will provide in this demand.

To be sustainable, local food should also provide farmers with a decent income (Jones et al, 2004). Therefore, it is important that local food is able to compete both in price and quality (Holt, 2005). In the UK, consumers are willing to pay up to 25% extra for organic or local products because of the added environmental and social value. Consumers are primarily persuaded by health and safety arguments, and second in agrochemical and animal welfare arguments for buying local food (Holt, 2005). Another argument for buying local is that local food creates jobs and as such generates income for people in the region. Money can circulate within the region, which ultimately leads to a sustainable region that supports itself (Holt, 2005). The extra percentage consumers are willing to pay will probably differ per country, depending on the mindset of inhabitants (Jones, et al 2004).

The previous sections already showed some social arguments for buying local products. Perceived food safety and healthier food are foremost mentioned. Consumers buying local experience a difference in quality from conventional agricultural products, which are aptly called 'faceless' products by Holt (2007). Although it is not clear if local products are indeed safer, or healthier as conventional food, consumers tend to feel this way. The reason is that short supply chains are characterised by information embedded within the product and market outlet (Holt, 2005). Contrary to conventional, consumers know where local food comes from and often even know the farmers themselves. The product reaches the consumer with a large degree of value-laden information (Renting et al, 2003) such as place of origin and production method(s). Consumers trust the farmers to do their best in delivering a quality product as the farmer depends on the local population to sell his products (Holt, 2005). Consumer producer relations are very important in local food systems. Local food has closer physical links between producer and consumer than the conventional food system. This relationship between consumer and producer is based on trust through familiarity (Holt, 2005; Renting et al, 2003).

There are more social aspects that are connected with local food. As local food is often bought on a farmers' market or on the farm itself, the system also brings people together. It is an extra meeting place for consumers (Holt, 2005). Because farmers and consumers connect there is also education involved. By seeing raw

products or visiting the farms people learn where products come from and how they grow. This changes the perception of consumers on agriculture in general, on the effort it takes to produce food and which hopefully leads to increasing awareness of food consumption.

It is interesting to see a difference between European mainland local food production and UK local food production. In Europe, local food is seen more as conserving traditions (traditional foods) through labels. In the UK, local food is more associated with community-based initiatives such as slow food¹ (Pretty et al. 2004 in Holt, 2007). According to Renting et al. (2003: page 394) the differences between countries are caused by:

"diversity in farming systems and territorial settings, different cultural and gastronomic traditions, a diversity in the organizational structures of food supply chains, variations in the consumer perceptions, and also from substantial differences in institutional and policy support"

Countries in the Mediterranean seem to have extensive local food chains, whereas the rest of Europe has relatively few local food networks developing.

Apparently the social values of local food differ per country or maybe even actor as Holt suggest, actors have different views on the local food sector development. They all try to shape the local food development to their discourses/views. Different discourses that can be found that are connected to local food initiatives are:

1. A discourse that strives for a regionally based lifestyle, with a focus on building a sustainable community and providing national self-sufficiency in food and fibre from the hinterland. The focus is on social aspects of local food.
2. A discourse that strives towards an international but small scale trading system operating alongside supermarkets. This discourse focuses on the economic value of local food systems.
3. A discourse that strives towards incorporation of local or speciality products into established mainstream and mass markets, which focuses on environment through reaching a bigger group of consumers.

Which discourse dominates in a region depends on the actors in the current food system (Holt, 2005).

It can be concluded that it is difficult to find a definition of local food that can be accepted for all discourses. It is however possible to come to a definition of local food for this research. It is essential that this definition is checked both in practise as in the discussions with researchers. Based on the above statements the definition of a local food system that will be used for this research will be:

A local food system is a food production, processing, and trading system that:

1. *Is based on closer relationships between producer and consumer, both in physical distance and in production steps, compared to conventional agriculture*

¹ Slow food is the counter movement to fast-food, which argues that in current society, people take too little time to prepare and eat their meals.

2. Produces according to the sustainability ethos, in environmental, economical and societal perspective
3. Uses a transparent product chain in which consumers get products laden with information

Although the initiatives for local food are often conceived as being good in nature, especially with definitions that for instance promote sustainability, Jarosz (2008) warns that ‘Local food systems may employ industrialized production techniques exploit farm workers and still produce organic food. They are not necessarily good’. In the UK, for example the organic sector became more industrialised when supermarkets realised organic food formed a new profitable niche, changing its core values to fit more in the industrial market ethos.

2.3 Organisation of Alternative Food Networks

Now that the concept of local food is clarified, it is important to look at the organisation of existing alternative and local food systems in literature. First, the different distribution methods will be described of which some were already mentioned in the previous sections. In the second part of this chapter, different spatial aspects that, according to scientific literature, influence local food chains are described.

2.3.1 Distribution methods for AFNs

Distribution structure

Figure 2.4 shows different modes of food production combined with different distribution systems. The main difference between conventional and local food is the location where the food is produced compared to where it is consumed. Therefore, the distribution method of the product differs: where conventional food is mostly sold through retail shops, local food is distributed more via direct selling techniques (La Trobe & Acott, 2000). These direct distribution schemes are structured from large to small scale.

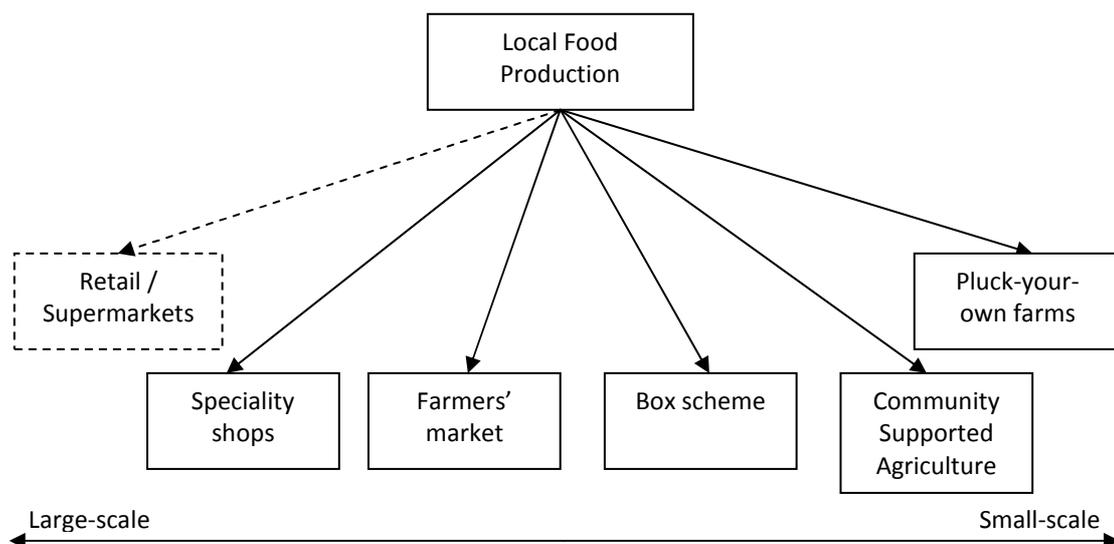


Figure 2.4 Distribution methods for local food systems

1. Pluck-Your-Own farms or on-farm selling

Some farmers choose to sell products on their farm. This can either be done by having a small shop on the farm or by letting consumers pick their own products and asking them for a small donation. It is hard to make a living from only using this distribution mode.

2. Community Supported Agriculture (CSA)

Community supported agriculture fosters a direct link between producer and consumer. People pay a farmer in advance for a share of the harvest throughout the year, thereby sharing the risks of crop failure between consumer and producer. In addition, demand of specific products can be better accommodated. (Pretty et al, 1998 cited in La Trobe & Acott, 2000) This mode may become very successful although not all consumers are willing to take the risk. For new local farmers advance payment will help to get started, as initial investment costs are somewhat reduced.

3. Farmers' markets

The most common way to distribute local food is via farmers' markets. Bringing food to a nearby village or city, and selling it at a market place, enlarges the group of potential consumers. Farmers' markets are mainly an option for small-scale farmers trying to sell their fresh products, because a market provides a low cost entry point for farmers who have not sold directly to consumers before (Jones et al, 2004). Besides, small amounts of food can easily be sold direct (Holt, 2005) and more value goes straight to the producers as the product is generally cheaper compared to supermarkets and there are no middlemen to take their share (La Trobe & Acott, 2000). Because the number of visitors of a market is limited (only interested consumers go to the market) and the farmers themselves mainly take care of transportation of the product, the markets are not a solid option for large-scale farmers. This is also a reason why large-scale farmers are hesitant to change to local food production. To be able to switch other distribution methods are needed such a retail selling. When thinking in terms of social gain, farmers' markets bring a larger group of consumers in contact with farmers, increasing understanding and awareness in the city population (Jones et al, 2004).

4. Box schemes

Food Box delivery is another option mentioned. This can be done to individual houses or at a central pick-up point (La Trobe & Acott, 2000). The idea behind a food box or basket is that a central organisation buys products from different local farmers. Consumers sign a contract to obtain a food basket each week that is compiled of the different products. Only fresh, local products are included. By regulating demand, the supply farmer's deliver can be matched when the system is in place. Similar to CSA farming this gives a guaranteed income to the farmer. Food box schemes are often distributed via organic shops, but can also be brought to consumers. A Dutch example is the Odin food basket that can be picked up from the organic stores in several cities.

5. Speciality shops

Organic shops can also be a selling point for local food. A big advantage of speciality shops compared to farmers' markets is that the shop is always present, making it easier for consumers to buy local organic products. Again by selling in the villages / cities themselves the number of potential consumers increases. Downside of speciality shops is that it provides an extra layer of middlemen, which reduces the value farmers receive for their products or increases the price consumer's pay.

As shown in the above examples local food distribution and thereby the organisation of the chain is generally small scale. In case of fresh products often the farmer does the trading or, in case of speciality shops, there is one level of middlemen. Local food however also includes processed products. Jams and jellies are often produced on the farm itself, but some products like dairy products often ask for processing outside the farm (Jarosz, 2008). It is difficult to find these products locally as there are few processing factories active on a local scale (Holt, 2005). When the total local food sector improves and becomes large-scale in set-up it could mean processed goods will become available on a local scale. On the other hand, one could say that processed goods can be considered local on a somewhat higher level and could use a bigger radius for distribution.

The different distributions methods mentioned before do not exclude each other. There are various possible set-ups for local food systems combining different distribution strategies. To be successful, local farmers cannot rely on only one distribution method, especially if it would be a focus on selling at the farm itself. It is imperative to have a solid market. To ensure a good market:

"Firms contemplating the local market must balance the market power of commodity-based producer associations with the competitive advantage of small independent firms selling into speciality markets." (Holt, 2005: section 3)

In other words, local food producers have to compete with the low priced retail products and higher prices speciality products. Local food itself can be regarded as a speciality product. Farmers can compete by delivering different niche products. According to Jones et al (2004), AFN farms are more diversified, often growing half a dozen products.

Although local food can be sold for a reasonable price by reducing the number of middlemen, it is impossible to compete to the conventional food system in pricing, at least without intervention from the government. By adding extra value to the product, it is also possible to be competitive with low priced conventional products. Added value can be created in different ways. One of the key elements previously mentioned of the local food system is that information is shared between producers and consumers (Holt, 2005). Consumers have to believe that local food is healthier and safer than conventional food. Helping the regional economy can also be an incentive for consumers to start buying local.

Jones et al (2004) summarize that the successfulness of the food system is largely dependent on the ability to link producers and consumers, and that this relation is at the heart of the local food initiatives.

2.3.2 Aspects that influence local food chains

The previous sections already showed various aspects relevant for local food systems. Both elements that cause local food systems to emerge and aspects that influence the development of these systems have been mentioned. This section will explore the aspects that influence the development of local food chains. In the case study, as well as the interviews, these different aspects will be assessed for the Dutch context.

Holt (2007: section 33) names three aspects that influence the success of local trade strategies saying:

"the success of a [local trade] strategy depends significantly on pre-existing human and natural resources, such as [1] the ability to achieve critical mass amongst small and micro enterprises in order to access economies of scale, [2] the potential for branding and [3] willingness of stakeholders to innovate and cooperate at each stage of the chain."

This shows that there exists a multitude of aspects as is also recognized by Beauchesne and Bryant (1999). The following sections will describe several aspects that influence alternative food networks, starting from demand for products and marketing to the actors themselves, governmental influence, and spatial characteristics of the region.

Creating demand (Market and Branding)

Of the different aspects that affect local food systems, the most important one is the presence of a market. This does not have to be a physical marketplace, as can also be seen by the large number of distribution schemes of which only one uses a marketplace. For an AFN to be initiated and to remain in place there has to be a demand for local food (Renting et al, 2003). This demand can exist already (mostly in the form of organic product demand) or can be developed by strategic marketing. Creating awareness is as such an essential element of local food systems. To do this, local food chains need open production processes and need to be free in information distribution regardless of which distribution model is chosen. The relation between producer and consumer is primarily to construct value and meaning for the product.

It is very important for local food systems to come to a quality convention (Renting et al, 2003). As mentioned previously, local food has to compete with conventional cheap products. This is mostly done by claiming higher quality. These presumed qualities of local food may very well differ per country or region as they are based on the demands and concerns of consumers in that country or region. Cultural differences also play an important role in the success of local food chains and determine what types of networks are found. In the Mediterranean for instance, local food systems are very common. Many consumers buy their food at the local market, whereas in the northern European countries most consumers buy their food in the supermarket.

Renting et al further mention that all alternative food chains operate, in part at least, on the principle that the more special the product becomes, the scarcer it is in the market. It is essential to have a transparent market where quality definitions can be

communicated to the consumers. In other words, the consumer needs to trust local food and this can best be reached with clear and open communication. It allows consumers to make new value judgements about the relative desirability of foods based on their own knowledge, experience, or perceived imagery (Renting et al, 2003).

Jarosz (2008) places local food systems in the urban fringe or the peri-urban area. Because local food is not (yet) a mainstream product, it is difficult for farmers to find enough customers in rural areas to be able to make a living. Farming near a city increases the number of potential customers. When considering the radius mentioned by Holt (2005) of 30 miles this would lead to assumption that local food systems can only be present in a 30-mile radius around a city. This radius is chosen with the assumption that local food should reduce the number of food kilometres in the food chain. Such a distance may differ for the Netherlands. The relevance of a geographically bound definition of local will be explored in the next chapter.

Actors' willingness to invest in AFNs

In the article of Renting et al (2003) is noted that alternative food systems are developing because various actors in the production chain are busy constructing networks. It can be a group of farmers or food processors taking initiative and promoting local products. However, it is also very well possible for wholesalers, retailers or consumers to start an initiative, creating demand for specific products or reducing investment risks, after which farmers join the network to produce the requested goods. CSA farming is a good example of such a network. Renting et al. (2003) further mention that to understand the emergence and success of alternative food networks, analysis is needed on how supply chains are constructed as arrangements of interlocking projects of these actors.

Presumably the initiative is taken by a group or network of actors and not by an individual. To be able to initiate a local food chain there need to be several farmers and enough consumers. These have to join up in a network that is flexible to withstand the pressure of urban or peri-urban environments (Jarosz, 2008). Farms participating in existing AFNs are usually medium-sized farms. Renting et al (2003) assume this is because a minimum production level is necessary to make local food production viable. For large farms, a conversion to local food is very difficult as they have too high a production to sell on a local scale.

Governmental influence

The research of Beauchesne & Bryant (1999) mentions the importance of macro-scale forces, for instance agri-environmental incentives, influences where organic and other alternative food networks exist. Section 2.1 showed how the loss of subsidies gave problems for conventional agriculture. Subsidies or other incentives can have a large impact on how local food systems work. Also the type of network may differ: for example when subsidies are offered for maintaining extensive grasslands, local food chains would probably include several extensive farms that make a connection between their products and the nature they care for.

Directly subsidising local food also brings the risk of the conventional food chain taking over as happened with the organic food sector in the UK (Holt, 2007). The organic food sector slowly industrialised, which in the end contradicted the original philosophies behind the organic food movement in the UK. The use of rules and regulations on the use of fertilizer and chemicals, animal welfare, and manure smell near cities may also influence the existence and development of local food chains, although it is uncertain if this is in a positive or negative way.

Spatial characteristics of the region

The dynamics of urbanisation is also an important reason for farmers to consider alternative food systems such as local food production. Usually, conventional farmland in the urban fringe is converted into local food farmland if it is not developed for other land-uses. Jarosz (2008) mentions places with rising land value and places that are surrounded by urban development as places where farmers think about changing production. In addition, the residents of the encroaching urban development often want to protect the last pieces of farmland in the vicinity. The later can also be contradicted by negative impacts of agriculture on the surroundings such as noise and smell although some of the restrictions (such as fertilizer and chemical use) on farms in urban areas are cause for farmers to change to (organic) local food production. The possibilities for agriculture near a city are strongly influenced by the regulations of the region or country. According to Jarosz (2008), rural restructuring also creates dynamic in a region, leading to changes in farming. He states that urbanisation and rural restructuring are critical to the development of AFNs.

Where on the one hand the dynamics of the city lead to the development of AFNs, on the other hand the interaction that both developments cause produces AFNs that are differentiated and marked by uneven development that does not necessarily support all farmers participating in the network (Jarosz, 2008). AFNs are fragile and the dynamism inherent in metropolitan development leads to dynamic and changing AFNs. This shows the importance of dynamic networks of actors that can deal with the pressure of farming near the city.

Lastly, the state of agriculture in the region can also have an effect. For instance, existence of organic agriculture in the region also helps to set up a local food chain. Most of these farmers already have a local customer base and producers that have access to an urban market (Holt, 2005). A strong developed intensified conventional food sector negatively affects survival of traditional production and marketing systems and as such makes it more difficult for local food systems to emerge (Renting et al, 2003).

2.3.3 The successful local food system: problems and possibilities

Holt (2005) mentions several problems local food chains have to overcome to be successful. The networks have to be able to deal with irregular and inconsistent supply of products. Because local food chains are small in set-up, there are often fewer products in stock to negate fluctuating production and demand. The fluctuations in production caused by natural phenomenon also bring another

problem. Local markets are often near saturation making it difficult to sell excess products when yields are high. This relates to the previous comment that local farmers cannot rely on farmers' markets alone. For consumers farmers' markets often have too low a frequency to be a reliable and complete alternative to retail.

The location of a farmers' market, in case of a physical marketplace, is also problematic. The markets generate more traffic and need open space to function. As such, there are few locations to be found in a city that can be used. Local governments often ask rent for the use of market places, making it more difficult for a local food system to remain profitable while having reasonably priced products, as the rent raises the product prices thereby reducing the number of consumers. The network has to organise itself to be able to pay the rent. Support from the local government is essential to solve this problem.

Besides providing a good space for a farmers' market, there is another option for the government to support local food systems. Both in the US and UK several public sector organisations provide local food for their employees (Jarosz, 2008; Holt, 2005). Although a very good incentive for the local food system there is a lack of suppliers able to provide local food in a high enough volume.

Another problem is that AFNs can fall victim to appropriation by retailers and other agribusiness concerns. In some countries, 70-80% of the organic food is traded through corporate retailers (Renting et al, 2003). It appears there is a delicate balance to strike for AFNs to become successful. When an AFN becomes too large, the conventional sector jumps in on the project and takes over. Some say this brings the danger of a downward pressure on producer prices and a dilution of quality standards, as such undermining the aims of local food production. Being too small makes it difficult to earn enough income to make the necessary investments and be somewhat competitive to the conventional sector (Renting et al, 2003).

Possibilities for the future

It is unclear how local food systems will develop in the future. The developments in the food market depend considerably on the capacity of conventional food networks to regain consumer trust, by establishing new institutional arrangements guaranteeing food quality in credible ways. If conventional networks succeed in regaining trust it is likely they will pull people away from alternative networks (Renting et al, 2003). Consumers are likely to choose for a supermarket for convenience, as it offers more products in one location.

Combinations with other activities as agritourism, nature conservation and/or landscape management are a possible way to strengthen local food systems. Integration of different aims in local food production may give these systems greater importance and extra ways to generate income (Renting et al, 2003). Such local food systems would also be able to advertise their products in a different way, showing their extra activities.

Another development may be that local food products will be available through retail shops and supermarkets. In the UK, some retailers reserve a small part of the supermarket for local products (Holt, 2005). When the local food chain becomes more large-scale, it would be a necessity to involve supermarkets in the chain. The supermarkets draw most consumers and as such may have the biggest impact on consumer habits. Consumers like to be able to go to one location and buy all products. This development holds some risk, as the UK example with local food already showed, it is possible for the local food sector to fall victim to the conventional food chains. If supermarkets demand lower prices, this may harm the objectives the local food movement stands for.

2.4 Conclusions

The question posed at the beginning of this chapter was: *How do local food chains develop according to scientific literature?* In the chapter, it became clear that local food is an alternative to conventional agriculture, as a response to food safety issues and environmental damage caused by conventional agriculture. However, local food is still a relatively small development. It was also shown that urban activities influence the type of agriculture present in an area. International literature claims that local food initiatives are most likely to be found near the city. This statement is taken along to the second part of the research.

Furthermore, it became clear that although much has been written about alternative food networks, there is less literature available on local food systems, especially for the Dutch context. Several authors (Renting et al, 2003, Holt, 2007) ask for new research on the organisational aspects of local food systems, and on the differences per country in the development of local food systems. This research will address these questions for the Dutch context.

It became clear that many different forms of local food systems exist, using different distribution methods and as such working on different scales. Local food can be seen in many different ways as was shown when developing a definition of local food for this research. For this research a local food system is defined as:

A food production, processing, and trading system that: is based on closer relationships between producer and consumer, both in physical distance and in production steps, compared to conventional agriculture; which produces according to the sustainability ethos, in environmental, economical and societal perspective; and which uses a transparent product chain in which consumers get products laden with information.

Because of the multi-interpretability of the term 'local food', this definition will be checked for the Dutch context.

Multiple aspects influence local food chains, next to spatial aspects that influence local food production. Several social aspects were mentioned, such as governmental regulations or subsidies and social opinions on responsible food. It is impossible to completely separate spatial aspects from social aspects that influence local food chains. The following chapters will show the importance of these other aspects as

well taking along the context of a country into consideration. These conclusions were incorporated in the interview questions.

3 Dutch local food production

The previous chapter gave an overview of scientific literature on the topic of local food chains in the western world. In chapter 3 and 4, the development of local food chains within the *Dutch context* will be explored. In chapter 3, several examples of Dutch local food production will be given, while chapter 4 gives two opinions of Dutch researchers on local food production. Central elements in chapter 3 are the aspects that influence the development of local food chains according to respondents the cases, actions the government could take to improve this development according to the respondents and their opinion on the definition of local food.

In order to be able to discuss these topics two steps have been taken in the research. Section 3.1 will give insight in the choice of the cases as well as the method of data gathering. The description of specific cases and the results found in the various interviews are described in section 3.2. In section 3.3, the different cases are compared and some preliminary conclusions are drawn.

3.1 Finding examples of local food in practice

For this study, four cases have been selected. The choice of these cases was based on the different types of distribution that were discerned in chapter 2. By doing so, the selection of cases gives an overview of the various possibilities of local food production in the Netherlands. A selection of four cases does not give a solid base to draw conclusions on the individual forms of local food productions. A bigger sample size, or separate research, would be needed to come to detailed conclusions on the inner workings of each of the systems.

Figure 3.1 is a detailed part of the figure shown in chapter 2. It depicts the different distribution schemes used in local food chains. A search was conducted to find examples of local food production in the Netherlands, fitting each of the different distribution schemes. At first, it seemed few local food systems exist in the Netherlands. Most of the big cities in the Netherlands have initiatives to promote local food, although most of these programs focus on food production inside these cities (Urban Agriculture). These include but are not limited to: edible gardens, using abandoned stretches of ground to produce flowers or vegetables or setting up community or allotment gardens. Local food initiatives from other municipalities outside the influence sphere of the big cities are more difficult to find. The initiatives found outside the city are often private in origin. Farmers who choose to change strategies, or adding an extra activity that generates extra money. It seems that only a few of the local food initiatives draw consumers, or explain their organisation, by using the Internet. This is a surprise as Jarosz (2008) mentions the Internet as an important tool for local food initiatives to cultivate a growing customer base.

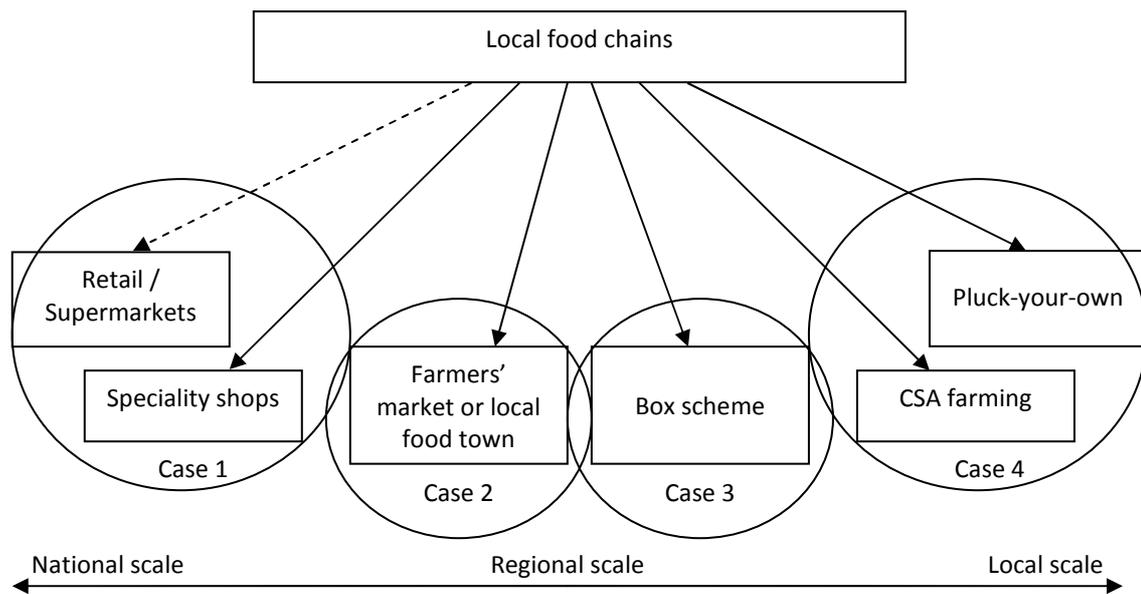


Figure 3.1 Selection of cases for the different distribution schemes

The following cases were identified:

- Case 1:** The concept of ‘Landwinkel’ is an example of a local food system using speciality shops on the perimeter of a farmer. ‘Landwinkel’ is operating throughout the Netherlands and have an own distribution system for fresh products.
- Case 2:** The project of ‘Agromere’ is an initiative operating on the scale of a region. This is seen as a representative of the ‘farmer’s market’ scale although it does not directly entail a farmer’s market per se. The project is in the process of being implemented by the municipality of Almere.
- Case 3:** Farmstead ‘Landzicht’ is home to an initiative run by a farmer’s family in Strijen. They provide a box-scheme via the website www.groentenabonnement.nl for the region of the ‘Hoekse Waard’ including both Rotterdam and Dordrecht.
- Case 4:** ‘De Nieuwe Ronde’ in Wageningen is a small farm of 1.5 hectares that provides a combination between CSA and Pluck-Your-Own farming on the smallest scale for citizens of the town of Wageningen.

The different cases will be described in this order in section 3.2.

Interview Methods

General information about each of the cases was found on their respective websites. Detailed information was obtained using semi-structured interviews. For each of the cases an interview was held with a directly involved person. The use of semi-structured interviews made it possible to dig deeper into interesting details in each of the cases, which has enriched the information gathered from the cases.

The interviews were structured by using different themes related to the research questions regarding Dutch local food production, for example the history, development and organisation of the case, aspects that influence the development

of local food systems and the role the government should play in this development. These themes were in no particular order discussed during the interview with the respondent. A list of themes and related questions that was used for these interviews can be found in appendix A and B.

The interviews were recorded and notes were made during the interview. The results were worked out per case. In order to structure the information the method of labelling (Creswell, 2003) was used. The results were mostly structured on the original themes as can be seen in the next sections.

3.2 Local food chains, descriptions and results

In this section the different cases will be described in more detail, the vision of the interviewed participants will be used to show the working of local food in the Netherlands. A list of interview questions, based on the research questions, can be found in appendix A. Data for the cases is largely based on the interviews held and enriched by the websites of the different initiatives. First the history and organisation of the initiatives will be shown, followed by the location the initiative is located and possible other locations the initiative could have been located. Furthermore, the recommendations given by the participants about planning and policy will be given. Section 3.3 will combine the results from the different cases in several conclusions. The cases are structured to their scale of operations. It should be noted that the case of 'Agromere' is not yet brought into practice.

3.2.1 Case 1 'Landwinkel': Speciality shops in the urban fringe

The first case is about the 'Landwinkel' concept. 'Landwinkel' could be loosely translated as country shop. In essence, these are shops present on a farm, selling products from other farms in the Netherlands under the franchise of 'Landwinkel'. The scale of operations is thus on the national level. The interview was held with P. Brandsma, national coordinator of 'Landwinkel'.

Development of the concept 'Landwinkel'

In 1997, four farmers, located at the 'Groene Hart' region of the Netherlands, took the initiative to join forces and sell each other's products. Few people saw the potential of such a development at that time, though the 'Westelijke Land en Tuinbouw Organisatie' (Western farmers union) did subsidize the initiative. The name of the concept was 'Groene Hart Landwinkels'. The idea behind the concept was to initiate a small shop within the boundaries of the existing farms. Products were shared between farmers or bought together. In due time, the initiative grew from the four starting members towards fifteen connected farms.

Seeing the development in the 'Groene Hart', a likewise initiative was taken by four farmers in the 'Gelderse Vallei' region in 1999. Under the name of 'Vallei Landwinkel' shops, the same structure of organization was adopted. This organization grew to 9 associated farmers. Around the same time, a third initiative was taken in 'Limburg' (Boerderij Pluswinkels), which started out with around six farmers.

Although each of the separate initiatives was successful, growth potential was limited due to the limited amount of investment money available. In 2005, talks between the different organisations were started, which resulted in a merge in 2006. It was decided that all associated farmers would operate under the brand of 'Landwinkel'. At that moment there were 39 shops connected to the concept. In the following four years, the number of members increased to 80.

The biggest challenge for the development of 'Landwinkel' is the availability of money for innovation. Innovation is needed to put new products on the market. Banks are not always willing to provide the resources. Therefore, the farmers connected to 'Landwinkel' all pay a fee that is used for the needed research. A second difficulty is to find enough consumers that go to a specific 'Landwinkel' shop. By jointly promoting 'Landwinkel' costs for promotion are reduced and the effect is enlarged.

Several big breakthroughs in the development of the cooperation were between April 2007 and June 2009. In 2007, the first employees were attracted in service of the company, and connected to that 'Landwinkel' started to organise their own purchase and selling of products. After institution of member fees and innovation, it became possible to obtain an office and storage space for the company. This enabled the cooperation to start distributing fresh products such as dairy products.

The aim of 'Landwinkel' is to attract more members and growing to 100 shops in total. At the present, 'Landwinkels' are not equally divided over the Netherlands. There seems to be potential to expand in the province of Noord-Holland, especially around the bigger cities. A second aim is to broaden the selection of fresh products. Currently, the products sold in the shop are mainly primary and secondary agricultural products such as: cheese, dairy, honey, juice, fruits and vegetables. 'Landwinkel' hopes to add potatoes, vegetables and fruit to the assortment. This will require a new distribution system to be developed. Next to offering a broader selection of fresh products, also the selection of products with the 'Landwinkel' trademark should be expanded. Lastly, the company wishes to support not only the purchase but also the selling of products for their members.

Organisation and structure

The basic idea behind the concept is that a farmer wants to start (or continue) a shop within the borders of his farm. As part of the assortment of products are grown or produced on the farm, the selection of products available depends on the farm. 'Landwinkel' is a franchise that helps members to start or continue their shop. In return, all members adopt the set-up of 'Landwinkel' and agree to the general policy of 'Landwinkel'. For example, every farm should have at least one view day at which consumers can experience the farm. The main reason the work together is the scale advantage reached by buying products together, and using the same publicity items.

Although the shop can become the main economic branch at the farm, even with its own staff, it is essential that the agricultural activities remain. 'Landwinkel' wants its customers to experience the agrarian nature of its products by coming to a farm to

buy products. In addition, a part of the production of the farm is sold in the shop. All other products are bought from the cooperation or from surrounding farms to offer a diverse assortment. Main task of 'Landwinkel' is to purchase products and to distribute the products to the members in time, and to promote the 'Landwinkel' concept on a national scale.

The 'Landwinkel' cooperation is a bottom-up organisation. Farmers took the first initiative and as such, members are still a very important part of the cooperation. It provides the organisation with a solid base that supports the current concept. The cooperation has members (the farmers) and a board. The members have to agree with changes in the general policy of the cooperation, while the board makes sure the day-to-day business is taken care of. Currently all kinds of farms have joined the cooperation, ranging from dairy farms to fruit farmers and vegetable farmers.

New members are added by consent of the board. Farmers themselves apply for membership at 'Landwinkel', mostly because they heard about it from current members. These farmers often already have a shop at their farm and hope to use of the scale advantages offered by 'Landwinkel'.

Attracting consumers to 'Landwinkel' shops remains an important, and difficult, task. Even with use of promotion material and view days, it is hard to attract a steady flow of consumers. Supermarkets are the main competitors. They are able to offer much lower prices at the beginning of a year, thereby attracting consumers. Although supermarket prices rise during the year, consumers keep buying from the supermarket with the belief supermarkets are cheaper than 'Landwinkel' shops. Attention for animal diseases and contaminated food in the national media have led to more critical consumers. This group of consumers' value the extra information given on products sold by 'Landwinkel'.

Essential spatial aspects

Most 'Landwinkel' shops exist near the urban environment in the provinces of Zuid-Holland, Limburg, Gelderland and Utrecht. Location of the shops can be explained from the historic growth of the cooperation. According to P. Brandsma, most growth potential lies near the urban environment where consumers live.

Individual shops are not always located at primary locations. However, other aspects also influence the successfulness of the shop. The ability of the members to make maximum use of promotion and their ability to bind customers may be even more important than the location of the shop. It is often the member that influences the success of the shop, for example by adopting seasonal themes.

According to P. Brandsma, the ideal location for a 'Landwinkel' would be in the urban fringe as this offers the positive elements of both the rural and urban environment. On the one hand, the fringe offers enough nearby consumers; on the other hand, it retains some agricultural features as to allow consumers to have the 'farm experience'.

Government policy and planning

P. Brandsma mentions that the rules, restrictions and policy differ depending on the municipality in the Netherlands. Several municipalities do not allow shops to be built on land allocated to agriculture, others object because of possible economic harm to shops in the centre of town. However not all municipalities object to the development. Some allow the activity but restrict it by stating that agriculture has to remain the main economic branch of the farm. There are also municipalities that do not apply such restrictions, making it easier to start of 'Landwinkel' shop there. The province of Utrecht is mentioned as a prime example where rules are flexible, allowing for all kinds of different initiative. Loosening of the rules might help to stimulate the 'Landwinkel' concept.

Advice for the development of local food in the Netherlands

One explanation for the differences in the development of local food chains between the UK and the Netherlands might be that local food in the UK has known more subsidies in the past, stimulating the development of local food chains. Nowadays, there are also several subsidies available in the Netherlands, which help setting up local food initiatives. An important remark made during the interview however was that policy makers usually couple local to a region. Subsidies are being given for products that are attached to a specific region. According to P. Brandsma, a region is too small to see as local and he advises the local policy makers to think beyond regions for local production. Products from the Netherlands should be seen as local.

Other advice given includes making sure that products are traceable and making sure that consumers are *as close as possible* to the primary production. In this respect, there is a huge role for supermarkets to be played. More attention within the supermarket on the origin of the products may help to make consumers aware of the problems. A last advice is to stimulate the founding of local production facilities. This part of the food chain has almost entirely disappeared in the past decades. To be able to offer local food on a large scale, it will be vital to bring back these parts of the food chain.

3.2.2 Case 2 'Agromere': building a local food neighbourhood

The second case presented is the concept of 'Agromere'. Although the concept is in the process of being implemented in policy plans of Almere, the concept has not been brought into practice yet. In essence, 'Agromere' tries to bring agriculture into the urban environment of the new spatial development of Almere. The direct region around the city is seen as the local scale of operations. The interview was held with J.E. Jansma, researcher at Dienst Landbouwkundig Onderzoek (DLO) of Wageningen University.

Development of the concept 'Agromere'

Wageningen University and Research acquired an assignment of the department of Agriculture, Nature and food quality (LNV) in the year 2000, to research explore the possible forms of agriculture that would exist at the year 2020. The aim of the ministry was to come to a policy frame for the future development of agriculture. Several idealized images were created with the help of stakeholders, which were

then connected to the current situation via back casting. This clarified the actions the government should take in order to reach the specific image. The research programme did foresee two different development directions for future agriculture. The first direction concerned a continuation of the current development in agriculture. Developing Agroclusters and metropolitan agriculture focused on the world market. Often these systems used long food chains with many different links in between. The second direction concerned agriculture in and around cities and nature areas. This second form of agriculture was focused on offering services to nature or to the city. (For example: green energy, healthcare, education, landscape maintenance, and food production for the city)

The project 'The taste of tomorrow' is a spin off of the former research programme focussing on reducing the use of pesticides for agriculture in order to close the gap between urban and rural. Reduction of pesticides allows agriculture to be placed closer to or even in combination with urban environment. During a workshop, as part of the starting of the project 'The taste of tomorrow', the chair of the Agriculture and Horticulture organization (LTO) of Flevoland pointed at Almere as a possible location for such a development as the city of Almere had recently received the task to double its inhabitants. Development of the new neighbourhoods would take place on agricultural land. J.E. Jansma decided to take Almere as a case for his research project on the renewal of the connection between rural and urban development.

In 2005, J.E. Jansma approached the municipality of Almere with the idea to include agriculture in the urban development of the city. At that time it was unsuccessful as most civil servants were convinced that agriculture had no place in the city. The research project however continued and the different actors (including the municipalities of Almere and Zeewolde, property developers, nature organisations and farmers) that had interests in the region were approached. Although most parties were sceptical at first, the actors enjoyed the workshops. For farmers this was the first time they actually were involved in urban plans. The participants had to make scenarios for 2030 for the region of Almere. Locality (local food) and ecological development were the central themes of the development although the housing task also had to be fulfilled. The project was called 'Agromere', a combination of agriculture and Almere.

In 2006, the appointment of Adri Duivesteijn as alderman of the municipality of Almere acted as a breakthrough for the project. He devised the seven 'Almere principles' that embraced the ideas of Cradle-to-Cradle. Duivesteijn saw that agriculture could help in the development of the city. Because one of the leading figures in the municipality went along in the project, many others followed.

The development of a part of Almere in cooperation with agricultural parties was settled in the 'scale jump' document of Almere that was presented in 2009. Although the plan still has to pass through many steps in the process, it seems 'Agromere' will indeed be realised. There are many active supporters of the plan both within the municipality and outside.

Organisation and structure

The aim of the concept 'Agromere' is to produce food in the close perimeter of the city in order to reduce the ecological footprint and the 'food miles' of the city of Almere. 'Agromere' uses small building blocks to build up a bigger area. One building block consists of 250 hectares and houses 5.000 inhabitants. 80 ha is used for houses and infrastructure. On the remaining 170 ha, four urban organic farms are situated: a community supported vegetable farm (CSA), a dairy farm with nature-education, a greenhouse farm, with restaurant and school and an arable farm with health care and village-shop. Each of those four is related to the others by (re-) using products, services, raw materials and waste (Jansma, et al, 2008). The production of the farms is meant for the city of Almere and should provide for 10 to 20% of the daily demand of fresh products.

Farmers in and around the city can contribute in many ways to city live by providing the services mentioned before. By taking care of the green space of the city, they reduce the cost of green services. Also a combination of agriculture and housing could help to reconnect consumers to food and food production, creating more awareness about consumption patterns, which in turn could lead to a healthier population. The services and food provided lead to a reduction in food miles and stimulate the social cohesion in the neighbourhood by allowing the inhabitants work together on the CSA farm.

Current farmers surrounding Almere are at least partly interested in the project and most are happy to have been involved in the planning process. The current farmers have been selected when the Flevopolder was opened on their production capabilities for the world market. As such, it is not surprising that some of them want to pursue that goal and leave the region when the development would start. Next to that, some farmers are not up to the challenge of having people walking around their farm. Organic farmers seem to be most open to new developments that bring new ways to earn money. This is partly because scaling-up, as alternative for broadening of functions, is difficult for organic farms.

Essential spatial aspects

According to J.E. Jansma, the suitability of a location for these developments is depending on many factors including: type of soil, willingness of farmers, having enough nearby consumers, having enough support from within the municipality and from interest groups, and largely depends on the landowners. Landowners, especially property developers, cause many problems for local food initiatives. While property developers own half of the land surrounding Almere, the municipality owns the other half, which still allow for some possibilities. Around many other towns in the Netherlands, the property developers own more land, and as such heavily influence what developments take place. These developers are mostly interested in earning money, which can best be accomplished by building houses. In the case of 'Agromere', involving the project developers in an early stage helped in realising the ambitions. The developers are nowadays also interested in good surroundings as

these also determine the price of houses. The ideal location for a project such as 'Agromere', but also for local food in general, would be the urban fringe.

Government policy and planning

Although the urban fringe is mentioned as the prime location for local food initiatives, several problems can also be identified in the combination between agriculture and housing. First, government policy and regulations can cause problems for the project 'Agromere'. Integrating agriculture in the urban environment also brings several risks. Packing animals and humans together in one place may be problematic seeing the recent outbreaks of animal diseases such as Q-fever. In addition, regulations regarding smell, use of fertilizer and/or pesticides may limit the development of 'Agromere'.

Sharp borders between the urban environment and the rural landscape also pose a problem. The urban environment and especially VINEX neighbourhoods are faced inwards to the city centre. Around the urban area, usually a circular access road has been build and often a waterway or green park splits the urban and rural environment even more. Only in a few places can citizens move into the rural area, making the exchange of products and services in general problematic. According to J.E. Jansma the division between city and land is not only physical. Governmental organisations often operate either in the city or in the countryside. The department of housing, planning and environment (VROM) operates in the city whereas the department of agriculture, nature conservation and food quality (LNV) operates in the countryside. Intensive cooperation between both will be needed to develop the urban fringe in such a way that city and countryside are brought together. On the level of the municipality the allocation plan for the urban environment and the allocation plan of the countryside would have to be merged to create an integrated plan. A more structured solution for the urban fringe could then be found.

Advice for the development of local food in the Netherlands

Several problems exist in current local food chains. For one the processing facilities do not exist on a local scale anymore. Fresh local food already exists; the next step would be to also have local processed products. An even bigger problem exists in how the current food and distribution system is organized. Four to five big companies determine what types of products we find on our plate. Although products from many small local food initiatives are available, these rarely make it into the supermarket. A possible solution could be to bring many small initiatives together by offering a large assortment of alternative products at one location. Main reason for this is to give the consumer a good and easy alternative for the supermarket. This could either be done by organizing indoor farmers markets or by adding the new products to supermarkets (for example in a local food department within or next to a supermarket). J.E. Jansma further elaborates that there is a big difference between citizens and consumers. Although many citizens in the Netherlands approve of local and organic food there is only a small percentage actually buying the local or organic products. Consumers seem to be used to the comfort and convenience of finding all products in the supermarket. Dutch consumers are very different compared to French or Italian consumers in their

behaviour. In those countries, consumers often buy products from their own region, just because they know it and trust it to be better than imported products. Another possibility would be to change our distribution system completely. If consumers would be able to order their (local) food through the Internet and get them home delivered, consumers would have a fair choice and an easy way to access the food. It is important to note that both consumers and producers cannot be forced to buy and produce local food. They have to be willing for the initiative to succeed.

There is also a task for the agricultural sector itself. In order to become a stronger land-use, farmers should try to reconnect people to food and the production of the food. Currently, many of the farms in the Netherlands could be picked up and put down in a completely different location and still function normally. Farms are replaceable making it easier for other interest groups to claim the land. By developing a strong connection with their surroundings and especially with the local population, there would be a lot of support to maintain agriculture in vicinity of the city.

In addition, in this interview the question arose as to what local food is. According to J.E. Jansma everything between 20 and 200 kilometres can be local depending on the context. The Netherlands would be a nice size to hold onto for policy and regulations, as a too small area would diminish the types of products you can grow under the specific spatial conditions.

3.2.3 Case 3 'Landzicht': Organizing a box-scheme in a metropolitan area

The third case presented is a box-scheme provided by the farmers of farmstead 'Landzicht' in Strijen. The company provides vegetable baskets throughout the region and even in Rotterdam itself via a network of pick-up locations. Consumers sign up for different types of vegetable baskets via the website (www.groentenabonnement.nl) and can pick their basket up at two different days in the week. Products for these baskets are partly grown on the farm itself and partly bought in the region. This is a clear example of local food on a regional scale. The interview was held with the owners of Landzicht, A. Visser and M. Visser.

Development of the farm 'Landzicht'

In 1980 M. Visser took over the farm from his father. Six years later, he decided to switch to organic agriculture to better take care of landscape. An even further change followed in 1994 when it was decided to try a box-scheme for the company. There were several reasons to change the distribution structure of the farm. M. Visser was frustrated about the unpredictability of the market. One year you could get a good price for the products while the next year, with the same quality of products, prices were barely high enough to make a living. Quality in terms of freshness and flavour of the products did not influence the price. Furthermore, trade organizations put sharper demands on the physical quality of products. For example, only straight cucumbers were accepted, while the curvy cucumber is just as healthy and tasty. Lastly, the profit margins were low because of the number of links in the food chain. As each link in the chain claims a part of the profit, the farmer receives a smaller margin the more links there are in the chain.

Out of necessity to reach a stable income for the family, several options were considered to earn extra money. The thought occurred to start selling potatoes directly to the consumer, skipping the links of the food chain. This would enable the farmer to directly sell good quality products for reasonable prices while making more profit. Secondly, A. Visser bought organic food in an organic food shop and noticed that fresh organic food was hard to get due to the low turnover rate in organic food shops. It became a wish to provide a better assortment of fresh products in the region. Furthermore, both A. and M. Visser wanted to take care of the landscape, and to reconnect consumers to the land.

Together with a marketing company and following the example of two other farmers elsewhere in the Netherlands A. and M. Visser decided to set up a box-scheme in the direct region around Strijen. They chose for a system where consumers had to subscribe to receive a weekly basket of vegetables and/or potatoes, as subscribers would help to generate a steady income throughout the year. They received many enthusiastic reactions from direct relations and later on from indirect relations. The organic food shop of Dordrecht was immediately interested in the project and offered to be one of the pick-up points for the baskets. In a short time, 70 people were interested and became subscribers to the service, which was far more than expected. Development of the network continued at a fast pace. After 4 years 750 people subscribed and in 2010 the demand levelled out at about 1000 subscribers. The renewal of the website to an up to date version had a big impact on the number of subscribers. The success of the service is partly caused by the sharp pricing of the baskets. Because all middle steps in the food chain are removed, the margin on the products is bigger, allowing for both a better income for the farmer and a competing price on the product.

M. and A. Visser want to invest time in reshaping the farm to the old farm it was. Recently an orchard has been realised on the place of the old orchard, flowers grow between the vegetables and more wooded banks are created for the little owls that live in the region. In the future, they will profile more with the added value created by maintaining the landscape. Taking care of plants and the earth, creating diversity in the landscape, will continue to be a primary goal for the future. In the future, subscribers can also help with some work on the farm. Although given though, the family does not intend to start a shop on the farm. Having a shop is a lot of administrative work, and requires people to be on the farm at all times.

Organizing a box-scheme

The farm is around 37 hectares in total of which 5 hectares are used for growing vegetables for the box-scheme. The other 32 hectares are used to grow biological potatoes, onions, beets and carrots for the market (also outside the Netherlands) and cattle-fodder. To be able to provide enough and diverse vegetables in the baskets there is a cooperation with five other biological farmers in the region. The manure needed to grow the different products is acquired from a biological pig farmer in the province of Brabant.

The consumer can choose from several different sizes of baskets containing vegetables and/or potatoes. It is the farmer however, that makes the decision what is offered in the baskets. Subscribers are guaranteed to get baskets with diverse biological products grown without the use of pesticides or artificial fertilizer. A fixed price is paid in advance, providing the farmer with a steady income and dividing the risks of crop failures. Subscribers have to trust in the quality of production of the farmer. The farmer on the other hand will make sure he delivers quality, as he or she will lose customers when products are spoiled. A. Visser mentions that:

"We don't adopt the saying 'the customer is king' but prefer to say 'the land is king'"

This means that the consumer will have to accept that they only receive ripened products of the specific season. The choice of products for the consumer is limited. However, the wish of the customer is of course valuable in other respects. Also important to note is that products that retail shops would see as B-quality products can easily be sold to consumers. B-quality meaning the form of the product is sub optimal for industrial processes and as such, the product is less valuable although taste and freshness are fine.

In order to fill and distribute the vegetable baskets, three extra people are employed on the farm. By truck, the baskets are delivered to 30 pick up points throughout the region. Most pick-up points are located within the 'Hoekse Waard' but there are several outside the region in the bigger cities of Rotterdam and Dordrecht. It was specifically chosen to work with pick-up points and not home delivery as consumers make more demands in home delivery. The easier it is to obtain food, the more critical and demanding consumers will be.

Currently the company has around 1000 subscribers of which 300 form a core-group of dedicated supporters of the initiative. Subscribers receive a newsletter every season to give an update on the status of the farm. One time a year the farm is open to all interested people, while all kinds of activities are organized. For this last event, it is essential that the landscape is maintained well, as this leads to more, and more happy, customers. Connecting the desires of customers with the possibilities of the land is a challenging task.

Relevant spatial aspects

To make a box-scheme work it is essential to have consumers nearby. A. Visser mentions that the ideal location would be a little closer to the city. The current location of the farm is almost ideal, close to Rotterdam (30 kilometres) and Dordrecht (20 kilometres). One of the downsides of being further away from the city is the limited contact with the subscribers. If the distance would be closer, it would be expected that more subscribers would regularly visit the farm. The ideal distance from the city depends on the intensity of contact with subscribers the farmer wants.

Government policy and planning

The farm gets some subsidies from the government, from the agricultural support funds, for ecological maintenance of field edges and from the nature protection funds. However, the province of Zuid-Holland, contrary to other provinces in the

Netherlands, does not subsidise the maintenance of the rest of the landscape. Planting of trees around the fields is problematic due to old rules of the water boards. Regarding the functioning of local food production M. Visser mentions the strict rules for keeping of livestock as problematic. Currently the farm does not have any livestock on it as it may endanger the distribution of vegetable baskets. When animals get sick, often the farm is locked-down, making it impossible for people to collect their vegetable basket and preventing the farmer to distribute the baskets.

Advice for the development of local food in the Netherlands

According to A. Visser there seems to be a big difference between the UK and the Netherlands in promotion of local food. Many magazines in the UK mention local food. More attention for local food would certainly help for the Netherlands. Besides media attention the UK supermarkets also sell more local products, however this would mean more steps in the food chain, reducing the income of the farmer or raising the price paid by the consumer. Supermarkets will always try to focus more on efficiency and less on durability of the production.

Several other initiatives have sprung up in the region. Both M. and A. Visser welcome those initiatives. They regret however that most initiatives are not *'from the heart'* of the farmers. The main reason for change is a quick raise of the profit and not taking care of the earth. Many of these initiatives do not succeed, as the farmer is not up to keeping contact with his customers. Not every person is as suitable as local or organic food farmer. M. Visser thinks there are some farmers interested in converting to organic or local production, however those are mostly educated as ecological farmers. The conventional educated farmers are still aiming to produce for the world market. Besides, many of the farms in the Netherlands (especially the greenhouses) are highly specialized in production of specific products. Conversion to biological or local production would cost much.

This is also what strikes them in the larger initiatives such as Odin vegetable baskets. Odin buys products from several big biological farmers that are not interested in maintaining and improving the landscape. Having more competing initiatives around is challenging but good for the market. Consumers will get to choose from multiple baskets, in the end supporting the farm or company that is closest to their own conviction.

3.2.4 Case 4 'De Nieuwe Ronde' a CSA and pluck-your-own farm

The fourth and last case is about a small association called 'De Nieuwe Ronde' near the city of Wageningen. This farm of only 1,5 hectares used a combination of Community Supported Agriculture (CSA) and pluck-your-own strategies to provide a modest amount of subscribers with vegetables, herbs and flowers. The interview was held with K. Nijhof, who is the farmer taking care of the farm.

Development of the farm

K. Nijhof was active in a local food association called 'De Kring' in Wageningen. Due to various reasons, the association fell apart, after which K. Nijhof started the association 'De Nieuwe Ronde'. Development of the association was uncertain as it

was unknown if enough subscribers could be found. At the start, there were around 50 subscribers, which grew to the 150 households currently subscribing. There appeared to be a large demand for local, biological vegetables in Wageningen. It was chosen to start with a pluck-your-own arrangement combined with a CSA structure, unique for the Netherlands.

Although in the beginning excess production was sold to shops, this proved to cost a lot of time without substantially improving the profit made on the farm. The profit margin on the products was small, as the farm is not specialized in growing one specific type of vegetable. Currently 100% of the production is for members and as such is local. Any excess production is thrown away. There is always a bit excess production to make sure there are enough products for everyone.

Furthermore, it was contemplated at the start of the company to start up a box-scheme. The main reason to choose for the combination of Pluck-Your-Own in combination with CSA farming was that this provides the most contact between farmer, consumer and land. From the beginning, it was intended to let subscribers come to the farm for their products. Providing the connection is the main aim for the association.

The association as it is set up right now functions well, for the future there are no plans to extend the farm. Extending would mean extra people on the farm creating a more anonymous relation between the different subscribers and the farmer.

Organization of community supported agriculture

'De Nieuwe Ronde' is divided in two parts: the farmer on one hand, and the association with a board on the other hand. Farmer and board together decided what happens on the farm (which products are grown, which products can be harvested, the price of membership etc.). All subscribers are member of the association. The CSA construction is chosen to formalize the involvement of the member. Members pay money in advance for a vegetable or a flower membership. This earns them the right to harvest vegetables or flowers that are labelled as ready to be harvested. Members may come and go at the farm at any time. Furthermore, they are free to harvest as much as they like, as long as it is for personal use. Lastly, members participate in the decisions on what is grown.

Every six weeks there is a meeting between the farmer and the board. In between the meetings, it is the task of the farmer to keep contact with the separate members to hear. Once a year, the entire association is represented in a General Members Meeting at which price and general policy are set.

Currently there is a waiting list for new members. K. Nijhof estimates that there is enough demand in Wageningen to provide at least one likewise association at the Westside of Wageningen.

Relevant spatial aspects

The current location of the farm is between Wageningen and Wageningen-Hoog on the 'Wageningse Eng'. The reasons for K. Nijhof to start near Wageningen are that he lives in Wageningen and that land was available for purchase on the current location. The current location is in the urban fringe, which has both positive and negative consequences. The downside of the urban fringe is that land values are high, making it hard for initiatives to get started. On the positive side the farm is very close to the consumer, making it relatively easy to get enough members and to keep in frequent contact with them.

The current location is protected by a strict allocation plan from the municipality. This constrains the possibilities to build a garden shed. Also the association 'Mooi Wageningen', that wants to protect the view of the 'Wageningse Eng', causes some difficulties for development of the farm. If K. Nijhof would have to choose another location he would probably still choose for a sandy soil near Wageningen. There are no other spatial aspects that would influence his decision.

Influence from the government

K. Nijhof mentions several laws and demands that make local organic farming difficult besides the allocation plan. The national government has strict laws on the use of fertilizer. Extra attention is needed as organic manure can quickly exceed the given standards. The rules of Skal, which provides the EKO label, are also getting more constraining. In order to receive the label almost 100% of the seeds and manure have to be of organic origin. If the label becomes hard to achieve, it is possible 'De Nieuwe Ronde' will choose to change to production without the EKO label.

Advice for the development of local food in the Netherlands

According to K. Nijhof one of the problems of local food in the Netherlands is the low demand for organic and local food. Although the people say they want to buy more ecological products, the consumer still buys the cheapest products. A change in pricing would be needed to switch the demand.

3.3 Differences and similarities in the cases

In this section, the different cases will be compared. Central themes will be discerned about which the respondents agree or disagree. These themes will be taken along to the next chapters. It should be noted that most of the respondents know each other from projects and fairs related to organic and local food. This indicates that the professional field of local food production is quite small and therefore most opinions are related, stemming from a common discourse.

The case results were analysed using the coding technique as described by Creswell (2003). Remarks were analysed and similarities and differences were grouped per theme. The themes used are taken from those that have been discussed in the previous chapter. The data is checked by selecting different cases (triangulation) and by comparing it with the view of two researchers (a form of peer debriefing), which will be done in chapter 4.

Section 3.3 is divided in four parts. First, the scale of local food production will be discussed. This is needed, as perceptions on this scale differ, as could be seen in section 2.2. Secondly, the spatial aspects that influence local food chains will be discussed. Section 3.3.3 and 3.3.4 discuss society in which local food production takes place. The first reflects on consumer behaviour and the second on the role of the government and planning in local food developments. Lastly, some reasons will be shown that could cause local food systems to develop slowly in the Netherlands. For each of these themes a comparison will be made with the theory from chapter 2.

3.3.1 The scale of local (food)

The first theme regards the scale of local and the scale and content of local food systems. The cases are all active on a very different scale in the landscape. Whereas 'Landwinkel' operates on a national level, distributing Dutch food all over the country, 'De Nieuwe Ronde' shows that local can be related to a plot of 1.5 hectares that provides 150 households with a regular supply of vegetables. This raises the question: what should be regarded as local?

From the interviews, it has become clear that 'local' can be different in scale depending on the context. Local is a word that is related to a small area within a bigger area that you analyse. On the scale of a nation, it may mean a region, whereas on the scale of the world the nation may be seen as local. In this respect, local food would be any food that is produced and consumed within a smaller radius as the conventional food chain. In chapter 2, it was already shown that different definitions of scale exist for local food. Theory and practice seem to agree on this matter. It is important to note that policy makers should not consider local food in too small a sense. As the cases show, local food in the Netherlands takes on many forms and operates on many different scales.

From the reactions of the respondents of 'Landzicht' and 'De Nieuwe Ronde', another meaning of local could be deduced. Both cases use direct contact between farmer and consumer, skipping several steps in the food chain. Local, or local food, may also mean reducing the number of steps in the food chain, in order to reconnect consumers to the farmer, reconnect the consumer with the land (and product) and provide good sharply priced products with a good income for the farmer. This concept also partly applies to 'Landwinkel', although in this case not all in-between steps of the food chain are removed. The intention is to commonly produce and sell products and purchase products where needed together. The products sold directly again skip some steps in the food chain.

Skipping steps of the food chain is not always simply a choice. Respondents from 'Landwinkel' and 'Agromere' indicate that although fresh products can currently be spread locally, the processing industry almost does not exist anymore in the Netherlands. Selling processed food on a local scale is no longer possible. It would require setting up new locally operating factories to create a complete local food chain. This is another problem, the local factory need multiple local farms to provide

enough base material. These farms currently do not exist. Besides, the 'scale' of local would have to be enlarged to make sure the factory remains profitable.

It should be noted that local is not something the respondents could easily define. It was not a matter of scale for them to start the specific initiative; it was often because of personal or financial reasons to start working on a local scale. For 'Landwinkel' it is to support a shop as secondary (or primary) branch of income for a farmer, working to an economy of scale. 'Agromere' is developed in order to reduce the environmental impact of the food consumption, currently for the town of Almere. Both 'Landzicht' and 'De Nieuwe Ronde' are set up because of personal preference to a direct approach with customers and an aim to reconnect people to the land.

To conclude this section, it would be best to interpret local and local food, in a broad sense. Taking both definitions too narrow would result in disregarding valuable and helpful initiatives that exist. This also means that if a radius is chosen to discern local food, this should be a wide radius. In the studied cases studied, the biggest scale found is the Netherlands. This would mean that for the Netherlands food produced and consumed within a radius of 100 to 150 kilometres would be considered local. Although setting a distance to discern local food can be helpful, the value of such a definition of local or local food remains debatable.

3.3.2 Spatial aspects that influence local food chains

Several aspects were found to influence the success of local food chains. Several non-spatial aspects were mentioned, such as: ability of farmers to cope with direct contact; ability of farmers to promote their products; but also having support for an initiative from the local government and interest groups. The last is especially of importance for projects as 'Agromere', which have to be developed in cooperation with the municipality. Spatial aspects of importance include soil quality, a good water table, and possibilities to extend the farm, but these are not different for conventional agriculture. Besides the basic needs to grow food and develop the initiative, two other spatial aspects are of importance.

Most important and often mentioned is the relation with the city. Local food initiatives as studied for this research are dependent on reaching consumers. All respondents agree that keeping in mind all other factors needed to grow food; the urban fringe is the best location for a local food initiatives. The initiative furthest away from the city, 'Landzicht' is located at 20 kilometres from Dordrecht. The owners of the farm like their current location, but mention that being closer to the city would be desirable (although they do not plan to move from the family farm at any time). The precise distance from farm to city differs per distribution type and depends on the transportation of the consumer. Working with pick up locations makes the daily distance the consumer has to travel smaller. An initiative such as 'Landwinkel' needs to be located closer to the city as the shop has to attract consumers. The urban fringe should in this case be considered as the direct border between urban build-up areas and the surrounding countryside.

Although the urban fringe is named as the ideal location for local food initiatives, there are also several problems the presence of urban activities causes. Foremost is the high price of land in the urban fringe. The urban pressure and project developers drive prices upward and make it difficult for farmers to expand on those locations. Farmers are often bought out for high prices by project developers. A new owner has to invest a huge sum of money in the land and as such is required to make a high profit from the land. Banks are holding back on loans, as many new initiatives do not survive. This makes the development of the local food sector a difficult and slow process. Secondly, J.E. Jansma mentions the smell of agriculture as a possible problem. Especially cattle breeding will be problematic near the city. Vegetable production would likely receive fewer critics from the urban citizens.

Connected with the presence of an urban environment nearby is also the infrastructure. This is where another problem occurs. The Dutch planning system strives for compact towns, leading to inward oriented cities. Especially in the 'VINEX' type of neighbourhoods, the surrounding land is difficult to reach. The border between city and rural environment is sharp. An open border would mean a more easy travel between city and farm and would increase potential for new local food initiatives.

From the cases, it can be concluded that the relation with an urban environment is essential. Although it has some drawbacks, the urban-fringe is the best location for local food initiatives to take place. J.E. Jansma mentions another possibility for local food systems, which would require a drastic change of the current distribution systems. If the whole of the Netherlands were considered local, it might be possible to start a bigger initiative that operates through the Internet, and delivers fresh Dutch products at home. Home delivery would decouple the farm from the city, which is one of the reasons to operate in the local food sector and is as such no option for the current initiatives. However, for farms outside the range of a city this can be an option to consider.

3.3.3 Making a change in consumer behaviour

Although the respondents see a positive trend in the number of consumers willing to buy local or organic food, the current group is relatively small. According P. Brandsma and J.E. Jansma this is due to the price difference between normal and organic or local products. Although many citizens would support a change to a more environmentally friendly production system, most still buy the product that is easiest obtained and which costs the least. Several differences were mentioned with respect to other countries.

First, A. Visser mentions a difference between the U.K. and the Netherlands with regard to the media. In the U.K. you encounter all sorts of magazines that pay attention to local food. It seems more attention is given to the phenomenon of local food. According to P. Brandsma another reason for the more successful development of U.K. local food is the early start with subsidies from the U.K. government. J.E. Jansma mentions a difference in mentality of Dutch consumers in respect to Italian or French consumers. Those consumers often buy products from their own region,

just because they know it and trust it to be better than imported products. It seems the mentality of the Dutch consumer needs to change, or lacking the tools to do so, some changes should be made to the current food system by the market or government. Several suggestions were given by the respondents to stimulate consumers to buy local products.

A first suggestion the respondents mentioned regarded supermarkets. As supermarkets are a key player in the food market, a change in the policy of the supermarkets would most likely lead to a change in consumer behaviour. J.E. Jansma explains that currently four to five big companies determine what products are to be found in the supermarket. In this respect, a simple solution would be to label Dutch products more clearly or, even better, the supermarket could start a 'local food' corner. By bringing local food into the supermarket, the consumer can make a choice while still buying everything in one location. However, as M. Visser mentions, supermarkets will always try to focus more on efficiency and less on durability of the production. By searching for the cheapest local products, this could lead to a return to the conventional food system.

A second option would be the idea of J.E. Jansma to set up a covered farmers market selling all kinds of local products in one location. This would lead to many products being available on one location, while the ideal of local food is still upheld. Marqt in Amsterdam is an example of a supermarket like organisation that only sells local and biological products. He also mentions the possibilities of Internet and home-delivery as possibilities for local food systems. Drawback would be loss of interaction with the consumer.

Contact with the consumer is a last important theme all respondents agree to. The connection between consumer and land should be made stronger in order for consumers to make a more deliberate choice when purchasing food. All initiatives strive for involvement with citizens and interaction between citizens and agriculture. Unfortunately, not all farmers are capable and willing to interact with consumers. A. and M. Visser mention a big difference in the education of conventional farmers and organic farmers; the last group being more willing to invest time and money in the interaction with consumers.

It can be concluded that a change in consumer awareness is needed. This can either be done by offering a clear choice in supermarkets, by attention from the media but also by letting people experience the rural way of life. In addition, in this respect the strong division between city and countryside is a barrier to local food production. Furthermore, the difference in pricing between local and conventional food is problematic. Consumers keep buying cheap products. One solution might be to reduce the number of steps the food needs to go through.

3.3.4 The role of planners and the government in local food development

In the interviews, a question was asked about the use of subsidies for the farm and the positive and or negative experiences with regulations. According to M. Visser and P. Brandsma the regulations differ per province or even per municipality. Water

boards are still strict on the use of vegetation along ditches stemming from the past. Although the province of Zuid-Holland does not subsidize landscape management, M. Visser knows several other provinces do. A combination of organic or local farming with landscape management could be an attractive combination. P. Brandsma specifically mentions the difficulties municipalities cause when starting up shops in the urban fringe. Often shops in the centre fear competition from outside. Municipalities tend to protect the shops in their town centres.

On the national level, all agriculture can apply for the general agricultural subsidies. Regulations on the use of fertilizer can restrict local food production. K. Nijhof mentions organic manure to be too phosphate rich, making it difficult to meet the strict national standards. According to M. Visser, combinations with dairy or meat production are difficult when dealing with direct customer relationships. In case of animal diseases, the farm is locked-down for public, making it impossible to distribute the products. J.E. Jansma also mentions the risks of animal production in or near the city. Local meat production may be less attractive in the urban fringe.

Based on the interviews, it seems subsidies; regulations and policies have little influence on the current situation of local food chains. Although subsidies can help local agriculture, it is impossible to close the price-gap between local and normal food this way. This brings up the question what the government should do to stimulate local food production. One possible answer could be the municipalities should be more open minded on initiatives as 'Agromere' or 'Landwinkel'. The respondents do not mention many other solutions.

For planners and architects a daunting task is mentioned. A change in national policy should be made to make sure the sharp borders between urban and rural areas are softened. With spatial claims of various land-uses lying around cities, it seems the urban fringes will remain an interesting work object for planners. Taking along agriculture in the planning process may lead to interesting solutions such as shown in 'Agromere'. Planners and architects should be able to facilitate the possibility of a reconnection of the urban and rural environment.

3.3.5 Other aspects that influence the development of local food

Several other reasons for a slow developing local food sector were mentioned in the interviews. According to P. Brandsma development of the local food sector simply takes time. The development in the Netherlands started relatively late and it will take time to catch up to the level of surrounding countries. The history of Dutch agriculture is the cause for the slow development of local food chains. Industrialization of agriculture in the Netherlands has led to the Netherlands being the third country on the world ranking for export of agricultural products. Because many farmers heavily invested in machinery, it has become a difficult decision to switch back to local or organic food production; especially cultivation under glass, such as in the Westland area, is very expensive. Although even in this branch, some interesting possibilities exist. This is likely the main explanation of the slow development of local food in the Netherlands.

Related to this aspect is the notion of M. Visser that most farmers are educated to produce for the world market. Their focus is economical in origin. Changing to another type of production is difficult for these farmers. Furthermore, not every farmer fits to every type of food production. The local initiatives as described in this chapter require contact between farmer and consumer. Other types of food production for a local market might require less intensive or no contact. One example would be the Odin food basket provided in many organic food shops. Odin buys its products from many farmers around the Netherlands and sells via shops to the consumer. Although no contact exists between farmer and consumer, this also qualifies as local food production.

3.4 Conclusions

This chapter showed four examples of successful local food production in the Netherlands. By studying these examples, several conclusions have been drawn regarding local food in the Netherlands. It became clear that the definition of local food is, as was already shown in chapter 2, ambiguous. The respondents note that no definite geographical distance can be drawn to discern local food. A better criterion might be the distance in steps in the food chain between producer and consumer.

Furthermore, there seems to be an important relationship between local food production and the city. The best location, market wise, is the urban fringe. The presence of the city however also leads to threats to local food initiatives. The pressure from urban activities can also lead to high prices of the land, which are an obstruction to new local food initiatives. Another interesting conclusion drawn in section 3.3.2 is the problematic planning of the urban fringe. New urban developments often face away from the rural countryside, most of the times even separated by ditches or provincial roads. The role urban activities play in local food chains will be further explored in the next chapter where these notions are compared with the opinion of two researchers on local and multi-functional food production.

Although the respondents observe a positive trend in local food sales, it is important to note that in all cases the current consumer mentality was mentioned as an important aspect that has to change. Most respondents see an important role for supermarkets in creating a wider acceptance of local food. The role of society and specifically the government is also further explored in the next chapter.

4 An scientific view on Dutch local food chains

The previous two chapters presented various conclusions on the development of local food chains. Where chapter 2 addressed the international scientific perspective, chapter 3 showed the Dutch situation as addressed by experts from practice. This chapter will describe the Dutch context from a scientific point of view. Because scientific literature on the Dutch context of local food production does not exist, two researchers in the field of sustainable and multifunctional agriculture in the Netherlands have been consulted. These researchers are: dr. J.W. van der Schans, researcher at the Landbouw Economisch Instituut and the Rural Sociology group of Wageningen University; and dr.ir. M. Wagemans, researcher at 'Innovatie Netwerk'. Both researchers were interviewed using the questions as can be found in appendix B. These questions were used as guidelines for the interview as they were semi-structured.

This chapter is structured using the questions posed in chapter 1 for understanding the Dutch context of local food production. Section 4.1 will give insight in the views of the scientists on the development of Dutch local food production. Section 4.2 discusses the definition of local food production used by the researchers and the value of such a definition for the Dutch context. Section 4.3 focuses on the aspects that influence the development of local food production in the Netherlands and offers solutions on how to come to a sustainable food system. This includes suggestions for the government and planning practice. Some concluding remarks will be made in section 4.4.

4.1 Explaining the development of Dutch (local) food production

In section 4.1.1, the historic development of food production in the Netherlands will be described, which will explain the slow development of Dutch local food systems as seen by van der Schans. Section 4.1.2 will explain the system approach as used by Wagemans to explain the problems in conventional food production.

4.1.1 Historical development of Dutch food chains

According van der Schans, the Dutch food system is exceptional compared to other countries. While local food systems did exist already in the Middle Ages (for instance in cities as a vital defence against sieges), large quantities of food were distributed through the Netherlands. Since those days, the food system has continuously expanded. Currently, consumers are used to a wide variety of products originating from all over the world. Dutch agriculture nowadays focuses on export of products, stimulated by the Ministry of Agriculture, nature conservation and food safety. Industrialization and globalization are not necessarily negative developments. The pursuit towards profit leads to efficient ways in the use of raw materials and labour. This reduces prices of food, making a variety of products purchasable by consumers.

The Dutch system as described by van der Schans is far from sustainable. Large quantities of soya are imported to feed cattle. Artificial fertilizer is used to stimulate plant growth, making the country dependant on resources from other countries. According to van der Schans, the economic sector is organized around import and

export of products. As such, it is not surprising to see that the economy will not benefit from a shift to local food systems. The high industrialization grade of Dutch agriculture can be seen as one of the reasons that local food chains are developing at a slow pace. This is entirely in line with the comment made by Visser, who describes the difficulties of biological greenhouse production.

Van der Schans further mentions that the current food system makes the Netherlands highly dependant on other countries for its food supplies. If other countries would decide to go for local food, this would severely harm the Dutch economy, and our ability to feed ourselves. The current situation of Dutch agriculture could become problematic if the world focuses on sustainable production systems. As such, it is important to change the current food system. This can only be done by understanding the developments of agriculture in the past.

Because of the historical background and the current economical interests, it will be difficult to develop local or short food chains. The ministry is mainly interested in the competitive position of Dutch farmers compared to world market. There is only a small budget available for the development of sustainable and multifunctional agricultural projects. The discord in policy leads to two very different kinds of agriculture in the Netherlands. On one hand this leads to an industrial agriculture that keeps on industrializing, which leads to growing protests in society, as safety, animal health and environment are under pressure. These are precisely the developments as described in section 2.1.3 based on Holt (2005) and Renting et al (2003), which have led to the development of local food systems.

On the other hand, there exists a multifunctional agriculture based on subsidies. The problem with this development is that most of the government initiatives are dependant on the subsidies. If, in the future, these subsidies are removed, survival of the sector will become problematic. According to van der Schans, it is important that new developments in agriculture are competitive. Van der Schans clearly states that government initiatives, such as public procurement, are only marginally working. The best initiatives are non-subsidized private initiatives. The cases in this research are all private initiatives, and all relatively successful. Although some subsidies are used, all cases seem to be able to make profit on their own. It seems that the government should not stimulate local food by subsidies.

4.1.2 The failure of the current system

Wagemans approaches the topic in a different way. Although a full analysis of his statements would be too much for this research, this section tries to clarify the problems that the Netherlands and the World have to deal with in order to come to a sustainable society.

Wagemans uses the definition of sustainability, which discerns three subsystems in society: the economical, social-cultural, and ecological subsystems. In order to have a sustainable development it is important that the development is sustainable for each of these subsystems. Looking at agriculture this could for instance be: a sufficient profit for the farmer, good quality of the products for the consumer and no

environmental degradation because of the production. In literature, this is often mentioned as PPP (People, Planet, Profit).

The problems in agriculture are according to Wagemans (2009) caused by an unbalanced economic system. Our society is primarily focused on economical sustainability. The economy has to grow for our wealth and 'happiness' to grow. Often the two other subsystems are forgotten. In the case of food systems, this can be seen in the industrialized food chains. The focus of all the steps in the food chain is to make profit. When costs (economic, social-cultural or ecological) can be discarded or shifted to other people or countries, this is done. In order to have enough fodder, soya is imported from third-world countries. Although rainforest is destroyed for the production of soya, the price of this devastation is not included in the price of the product. Furthermore, it is impossible as consumer to see which product originates where, and which influences the production had on the environment. The food chain has become non-transparent.

The problem with a non-transparent food system is the inability to control the food system. As organizations and people in the system operate anonymously, few people feel the need to take responsibility for creating a sustainable food chain. According to Wagemans the main problem is not the slow-development of local food initiatives. The main problem is unsustainable production being profitable. In order to make intensive sustainability changes to food chains, prices will have to be determined in other ways.

It is important to note that there are fundamental problems that cause a slow development of sustainable food systems in the Netherlands besides the spatial aspects mentioned in chapter 2. Section 4.3 will list concrete problems that influence the development of local food chains in the Netherlands according to van der Schans and Wagemans.

4.2 A focus on local or sustainable food production?

In both chapter 2 and chapter 3, a definition was sought for the term local food. It has proven to be difficult to put a specific amount of kilometres to the term local in this research. It was concluded from the case study that it would be best to interpret local in a broad sense. The national scale can very well still be considered local when comparing to the world market. Because of the difficulties of understanding the term local food, it is important to know how Wagemans and van der Schans experience the term and on what scale they see developments take place.

Both van der Schans and Wagemans argue that local food should not be seen as food produced within certain geographical distance. According to van der Schans, the development of local food production is '*von Thünen revisited*'. In many cases, cities developing plans for local food draw circles around the town as to where food should come from. This development takes place as a reaction to the globalised food system. According to van der Schans and Wagemans however, globalisation on its own is not a problem. Wagemans argues that:

"the problem of our current food system is not the geographical distances that food travel, it is the anonymity and non-transparency of the system"

While a century ago many contacts existed between producers and consumers, nowadays the consumers no longer know who grows their food. The fact that a consumer can anonymously buy food makes it easier for him/her to 'forget' the negative impacts of their food choice. Furthermore, it implicitly leads to a dependence of consumers to the great food companies. As a consumer, you have to trust in the labelling and control mechanisms of big organizations. There is no way you can check the provenance of the products. According to Wagemans, the anonymity and non-transparency of the current food system would have to be removed in order to come to a more sustainable food system. Consumers and producers would need to have personal contact once again. A regional or local system is a logical choice when pursuing these goals. However, it is not the only possible solution and moreover, it would not work for every product. Coffee for example would not be available in a regional food system limited by a specific geographical distance.

It is interesting to see that the point Wagemans raises, comes back in the different cases. In many of the cases, contact between consumer and producer is essential, and is the most visible asset of the local food system. All different initiatives have this contact, or in the case of 'Landwinkel' at least give clear information to the consumer what the origin of the product is. This contact and transparency makes it possible for local food to exist: it fills a niche.

Van der Schans stresses that short (sustainable) food chains do not necessarily have to be short in a spatial sense. There are also examples to be found, such as Marqt in Amsterdam, that do not primarily take distance as a key aspect of bringing sustainable products on the market. In the case of Marqt, which is a supermarket concept for sustainable products, exotic products are brought to the Netherlands but the number of links in the food chain is reduced. Currently, consumers are used to choose from a large amount of products, which is difficult to change. Quite some products cannot be grown in the Netherlands without technical aid or severe harm to the environment. The solution as provided by Marqt provides a higher income for the farmers. Wagemans mentions that reducing the amount of steps in the food chain also leads to a more transparent food chain.

Very interesting in this respect is the whole discussion surrounding the concept of 'food miles'. For example Born and Purcell (2006), show that long distance products can be, in some cases, more sustainable than the same products from the region. Van der Schans states that it is much more important to look at the sustainability of production for each separate product than to focus on growing everything in the Netherlands. It should be noted that many of the current private local food initiatives are, according to van der Schans, not primarily focused on distance. They mostly advertise with care for the landscape, people and products as well as the well being of animals. As such, the definition of local as a bound geographical region would not make sense. Indeed, as has been shown in the previous chapter the local food initiatives that were studied show that the focus is often not on distance per se. The

focus is on maintaining the landscape, providing information and/or education. The nature of these small initiatives causes them to be local in a geographical sense, but it is not the essential core of the initiative.

It can be concluded that a focus on distance will not provide a solid criterion for sustainable food. Connected with the case results it can be said that local food chains should be seen in the broadest sense possible. The government should not restrict the development of local food to a specific region. Both researchers conclude that it is more important to look at sustainable solutions, as it is to look at geographical distances. It is important to see what kind of production system would be most sustainable for what product in the Netherlands. Wagemans adds that an interesting research subject would be to see at what scale a food system remains transparent. Some suggestions on how to deal with sustainable production will be given in section 4.3.3.

4.3 Developing local food systems

In the previous chapters the spatial and non-spatial aspects that influenced the development of local food systems played an essential role. This section will give the opinion of the two researchers on relevant aspects that influence this development in section 4.3.1 and 4.3.2. Section 4.3.3 gives several suggestions on how the government, society and planning, according to the respondents, can improve the Dutch (local) food system.

4.3.1 Importance of location

An essential part of the research was to find spatial aspects relevant for the development of local food systems. The respondents agree that a bond with the city is necessary. This is entirely in line with the predictions of Jarosz (2008) and with the results found in the case study. In the previous section, the relation between consumer and producer was already mentioned. The presence of a town or city seems to be important for local food production. The area where rural and urban activities mix seems to be an interesting location for local food production. In these areas consumers and producers can be connected by offering all kinds of extra services.

Both respondents remark that the high land prices near the city are holding back private and public initiatives of local food production. Wagemans states that developments in the urban fringe, agriculture often loses to the 'stronger' functions of housing and industrial development. Private developers buy land around cities in anticipation of new developments. They ask high prices for the land on such locations. Without public intervention, it is impossible for agricultural initiatives to take place on these locations, unless the specific farmer already (or still) owns the land. Land speculation is a threat for agricultural developments in the urban fringe. Van der Schans adds that land prices are already high in the Netherlands without speculation, especially for small-scale or local initiatives. Producing organic food makes it even harder, as the harvest is somewhat smaller. Unless customers are willing to pay more for local or organic food, these initiatives are at a disadvantage in the urban fringe.

Van der Schans further mentions that specific spatial aspects relevant for local food production really depend on the type of product being produced. Fresh products could probably best be grown close to the city. For example:

"Strawberries are probably best be grown on your own desk to get the best quality products, as they cannot be stored without losing flavour."

Products that can be stored without much trouble, such as red cabbages, could be grown anywhere. These are often shipped in big volumes, with a relatively small impact on the environment.

Van der Schans states that looking at the internal structure of (local) food networks is not very interesting. The specific distances a products travels in the food chain are unimportant. It would be more interesting to research what criteria should be used to assess the sustainability of a food chain for a given product. Wagemans adds in this respect, that all costs made in the food chain (social-cultural, economical and ecological) are relevant and should be visible in the price of the product in order to let consumers make an unbiased choice. This research cannot asses the food chain for each individual product. However, it is clear that working towards a sustainable food system is more important than working towards a local food system.

Another aspect that influences local food chains is the absence of local processing industry, although both researchers are hesitant to say that having local processing industry would be a more sustainable solution. Scaling-up of the agricultural sector does not only have negative aspects. The efficiency in the use of raw materials for instance is a good thing when looking from a sustainability viewpoint. Van der Schans gives as example the bundling of slaughterhouses in Brabant. All kinds of processing industry make use of waste material from the slaughterhouses. It would not be possible to efficiently use the waste material if slaughterhouses exist on a local scale. Wagemans and van der Schans both mention that getting to a sustainable food chain through the use of local food chains should not just be going back to former days; it should be a development in which the current food system should be critically assessed. The negative aspects of the current food system should be dealt with in order to come to a sustainable food system.

The relationship with the city is named in chapter 2, 3 and 4 as an important spatial aspect for local food systems. However, it seems that both in the case-study and in the interviews, few other spatial aspects are mentioned to be of importance. The relation between consumers and producers seems to play an important role. This observation will be further explained in the next chapter.

4.3.2 Non-spatial problems in local food systems

Section 4.1 and 4.2 made it clear that several problems exist on a more fundamental level when studying local or sustainable food production. While an interesting observation, it is also important to look at the problems visible on the surface. Section 4.3.1 showed what spatial aspects influence the development of local food chains in the Netherlands. This section deals with the non- spatial aspects hinted at in the first three sections. It is divided in two parts: societal and market aspects and

governmental aspects related to spatial planning. These will be described as perceived by Wagemans and van der Schans.

Societal and market problems

The previous sections already showed that the profitability of unsustainable behaviour is problematic for the development of local food chains. Van der Schans adds that although local food initiatives are present in the urban fringe, consumers are often unaware of these alternatives. The distance between rural and urban society is wide, this in part is caused by the strict separation of town planning and landscape planning as will be explained in the next section.

Another problem previously mentioned is the non-transparency of the conventional food chains. Besides being able to choose the cheapest product without anyone noticing, many consumers believe that as long as others do not change their behaviour their individual influence is limited and as such not worthwhile. It is interesting to note that in the case study the relation between consumer and producer was very important. All forms of local food production have a more intensive relation between consumer and producer compared to the conventional food system. A direct relation between consumer and producer helps to take away the anonymity and allows the consumer to see a direct influence on their environment in the case of farm visits.

Lastly, a problem described by Wagemans is the lack of steering from within the economic system itself. Currently all companies strive to make as much profit as possible. While many economists believe that market demand can steer companies to produce sustainable, the lack of sustainable development shows that this assumption is not correct. Many companies draw customers with low prices. In order to maintain profitable they will shift social-cultural and ecological costs onto others. Big food companies continuously put pressure on farmers by offering low prices for raw materials. This leads to the price squeeze (Renting et al, 2003) as shown in chapter 2. Farmers in the Netherlands have also been shown to be trained mostly to grow food for the world market. Van der Schans also mentions that the economically trained farmers are very hesitant to start multifunctional farms. They see public interference mostly as a threat. It will be difficult to convince them to start a sustainable local or regional food network. Currently, agriculture is importing large quantities of fodder, fertiliser and the use of pesticides in order to be able to compete on the world market. The costs of these products, in terms of environmental damage and depletion of soils from third world countries are never compensated. Combined with the lack of transparency this makes it possible for the current system to continue. The current economic system is stable and will not change itself to a more sustainable system. As such, the conclusion can be drawn that without outside interference local or regional production systems will not develop to our main food system.

When combining this with case results, it seems that both in the case study as in the researcher opinions it seems demand for local products could be higher. A rise in demand cannot be expected to happen overnight and without changes in the

current conventional food system. Changes in prices will have to be levelled in order for masses to buy local products. Such a change can only be initiated from 'outside' the conventional food system according to Wagemans, as it is not profitable for companies to switch to other production systems. While outbreaks animal diseases and the continuous industrialisation of the agricultural sector have led to a pretty solid demand for local and biological products in the Netherlands, it is still only a fraction of the total population that buys sustainable.

The role of the government

According to van der Schans and Wagemans, the role of the government is problematic. Currently the main task of the government is to check on the food quality and to check on landscape quality by implementing allocation plans on various levels.

Wagemans mentions the lack of transparency in food chains that leads to a demand for the government to check on the food quality of products delivered by the big food companies. Setting up safety agencies costs a lot of money from society. These checks are necessary because of food scandals in the past. Apparently, food companies themselves have only little interest in upholding strict quality demands on their products.

Both in the cases as in the various interviews, it becomes clear that there is a lack of coherent planning for the urban fringe. Rural and urban activities are strictly separated. Jansma and van der Schans both mention the division of planning tasks as a problem for the urban fringe. While the ministry of VROM (housing, spatial planning and environment) is mostly concerned with urban development, the ministry of LNV (agriculture, nature conservation and food safety) is concerned with the rural landscape. Furthermore, several other ministries influence spatial decisions: the ministry of V&W (traffic and water) is responsible for infrastructure; the ministry of EZ (economical business) takes care of business areas; and the ministry of OCW (education, culture and science) protects cultural heritage. This clearly shows that planning tasks concern many different ministries. Because the responsibilities are divided, it is hard to come to coherent plans for multidisciplinary themes such as local food production in the urban fringe. Van der Schans also mentions that municipalities merely focus on the urban areas. Often two kinds of allocation plans exist: one for the urban environment and one for the rural surroundings of the town. It is interesting to note that the 'Landwinkel' case also showed that some municipalities or provinces had strict rules that did not allow for shops to be set up in the urban fringe. This policy often stems from a wish to protect the shops in the town centre. While an initiative for local shops could help in reconnecting the urban and rural environment, current regulations make it difficult to initiate change.

This division in sectors is not exclusive to the government. Wagemans adds that many protest and interest groups are also divided according to sectoral interests. In planning processes, the different interest groups will defend their own interests in a narrow sense. Decisions between groups can be described as compromises.

Everyone loses a bit, and as such, the whole plan is bearable for everyone. However, solutions that encompass multiple sectors are often overlooked. For example, with regard to agriculture and nature conservation the starting point is often that both developments harm each other. Due to emission regulations industrial agriculture cannot take place next to a nature area. The contrast between both is accentuated during the planning process. In the end interest groups from both sides will have to accept a plan where only a part of their intentions is realized.

According to Wagemans, the Dutch tradition to come to compromises (polder model) does not always lead to the best solutions. Rising protests from society show that the old planning traditions no longer work. Currently the compromises lead to intensive, industrial agriculture on the one hand and a heavily subsidised multifunctional agriculture on the other hand. The first leads to protests from society, which is scared for diseases and concerned for animal well-being etc. The second is undesired from an economical perspective and no solution for the future, especially with budget cuts on the horizon.

Wagemans argues that recent protests from society show that the traditional possession of the rural countryside by farmers is no longer accepted as a given. Owning land currently still gives the right to use fertilizer and pesticides on it (although regulated), negatively affecting the environment and leading to extra costs. Those costs are, again, not for the producer, but for society as a whole including the people that buy sustainable food. The traditional power relations are challenged. Even according to actors that traditionally supported farmers, agriculture should have at least two roles: providing food for society and maintaining the landscape.

The difficult situation of agriculture was also shown in the case study. The main reasons for a change to local food production were a difficult economical position and/or the desire of the farmer(s) to produce in a sustainable way.

The role of the government is indeed difficult. Old policy has failed to create a sustainable landscape. Regulations make it hard for sustainable initiatives to be developed. A challenge exists for the government to find new ways to deal with sustainable agriculture and the planning of the urban fringe.

4.3.3 Solutions for Dutch (local) food production

The problems of local agriculture were not the only topic in the interview. Several solutions were thought of. As mentioned before, van der Schans is not in favour of subsidies for local food initiatives. A system of subsidies is too fragile. Indeed, information from the cases, which are all relatively successful, shows that most of the initiatives received little subsidy. A sustainable solution according to Wagemans would have to be implemented worldwide and not on a national scale.

Local food as a means to produce more sustainable

In section 4.2, it was already shown that the term local should be interpreted very broad and depends on the type of product produced. Furthermore, it was argued

that it would be better to work towards a sustainable food system. It is important for the government and planners to keep this in mind. The focus should be to work towards a sustainable food system. Local food production can help to achieve a sustainable food chain for some products, but policy makers should not focus too much on local food production on its own. Wagemans suggest that when focussing on sustainable food production, it should be tried to close nutrient and energy cycles within a region as much as possible using the Cradle-to-Cradle (C2C) principle. Wagemans further suggests a worldwide system to compensate environmental and social-cultural damage via a transaction system, much like the current CO₂ emission rights in order to reach such a sustainable food system.

In the previous section, the non-transparency of the current food system was mentioned as a problem. Reducing the number of actors in the food chain may help to increase transparency in order for consumers to make a better choice. A more local form of food production would be the result, but both Wagemans and van der Schans warn that going for local production should not be the aim itself, as producing on a local scale brings scale-disadvantages. In current local food chains there is a lack of processing industry. However, there is a reason why processing industry is currently bundled in the Netherlands. Van der Schans mentions the current pig food chain as an example. The slaughterhouses for pigs are all located on one place in the Netherlands. Because of the bundling of activity, making use of every part of the pig becomes possible (e.g. making gelatine or brushes etc.). When spreading slaughterhouses across the Netherlands it would be difficult to efficiently use all different parts of the pigs. In this example, the transportation kilometres are higher compared to a local food system, but the efficient use of the products counteracts this drawback. Highly efficient processing should not be changed to inefficient local processing. The solution would be to research for each product and each step in production process, what method of processing and method of distribution are most sustainable. This example clearly shows that a focus on local food production or a reduction of steps in the food chain, on their own can cause further problems. It is essential that planners and the government assess the situation for separate production chains in order to find out what forms of local food production should be stimulated.

Industrial forms of sustainable food

According to van der Schans, the solution to come to a sustainable food system would be to focus on intensive agriculture rather than extensive agriculture. It would be essential to keep in mind to close the nutrient and energy cycles. This would lead to high-tech forms of production that can cope with the limited amount of space in the Netherlands. Currently, the Netherlands has a large quantity of greenhouse food production. Growing food in greenhouses can lengthen the growth season and increase production per acre. If this production can take place in a sustainable way, with energy producing greenhouses, re-use of waste materials; and restricted use of chemicals and artificial fertiliser, there is nothing wrong with intensive production. Wagemans agrees that a sustainable agriculture could very well exist in the form of high-tech and intensive farms. The focus should be to produce sustainable and to

cover *all* costs made in the production process. Not only the economic costs should be calculated, also the social-cultural and ecological costs.

Furthermore, it is important that changes in the food system should be made based on historical lessons learned. The current situation is not necessarily bad; the system has developed based on very relevant incentives. When it is decided that the food system should change, it is important to look at the positive and negative aspects of the current food system. For products that have indeed harmful food miles such as exotic products and out of the season vegetables, it should be researched if these can be grown or transported in a more sustainable manner in the Netherlands. It may be possible to produce out of the season vegetables in a sustainable way in greenhouses. It is important to use new techniques (e.g. energy producing greenhouses, re-use of waste material) when researching these possibilities.

A self-steering system based on reciprocity

In order to increase transparency in the food chain, Wagemans suggests adding the principle of reciprocity. According to Wagemans, a sustainable food system cannot afford to be non-committing to all actors; it cannot afford to be anonymous. Every actor in the chain, from producer to consumer should be '*forced*' to choose for sustainability. In order to change this, Wagemans argues that behaving sustainable should be profitable for consumers, producers as well as the government. How can such a system be developed, and how encompassing can such a system be? The answer, according to Wagemans, is introducing a system based on reciprocity. Both consumer and producer bear responsibility for the management of the land and the production process. The idea is that by paying in advance, consumers are co-owners of the farm: sharing the risks by paying in advance for a share of the harvest. Chapter 3 showed that current Community Supported Agriculture (CSA) systems and the occasional box-scheme already work according to this scheme. The challenge, according to Wagemans, is to find ways to make such a system profitable for everyone. Current local food initiatives are still a choice for consumers. Although CSA and Box-schemes work with subscription, joining such a system is a choice. These initiatives work for a small group of people, but the global effects are very limited. Wagemans states that the current initiatives, although good in intentions, will not be solution for the big problems because they are based on the goodwill of the consumer. In order to make a change, a solution on a national and global scale is needed.

Changing product pricing

The problems mentioned above are caused, by an unbalance in the current world system. The economical system is currently dominating. The social-cultural and ecological systems have to give way to economical goals. Food production causes various environmental and social-cultural problems but the costs made to solve these problems are not included in the product prices. This way, indirect costs of production are shifted towards society instead of the producer. A nice example is the funding for improvement of rural roads. The improvement is mostly paid from local or national taxes paid by society, while the profit goes to the agricultural sector that can better export their products. Society and nature currently pay for the costs our

current food system causes. Wagemans adds that society will always have to pay for landscape management. The current anonymous system via taxes however, is not the best way to do so.

According to Wagemans, it would be best to do so in a more direct and transparent manner. It should be clear to consumers what they pay for, either via taxes, or via product prices. A sustainable food system would be based on all three subsystems operating in harmony. Social-cultural and ecological values have to be included in product prices. The government should explore how this can be done. Wagemans stresses that such a solution should not be elitist as everyone should be part of the system.

In order to harmonize the sub-systems it is important that the current pursuit for economical progress should be halted. Our current prosperity is reached through shifting of costs on nature, which has to stop. Simply put, we currently deplete the available resources. When Miller invented the current economical system, he already warned that the growth of the economical system would be limited by the capacity of the World. Miller hoped that future generations would acknowledge this in time (Wagemans, 2009). Currently we still focus on profit and economical growth. Wagemans assumes society will have to take a step back, and accept that the current growth cannot be maintained. Instead of a focus on economic growth, a focus on sustainability is needed. A first step would be to remove the '*perverse couplings*' that maintain the current system. Causing environmental or social-cultural damage should not be profitable any longer. Every actor in the food chain should bear responsibility, which is only possible if the food chain is transparent. The current actors in the economic system will not initiate such a development, as it will harm their operations. A change should come from outside, but who can initiate such a change remains a question, as Wagemans stated that both government regulation and market steering both offer no solution. Maybe the current local food initiatives can take on a role as eye openers.

While no direct solution can be given, it would be good to try to include all costs made in the production process in the product prices. In such a scenario, sustainable behaviour would be profitable, or at least less expensive. Van der Schans thinks a form of '*eco-tax*' instead of the current tax on products might be a solution. Such a system will give consumers a better choice in sustainable and non-sustainable products.

4.4 Concluding remarks

This chapter showed that the government should not blindly aim for local food production. Rather, a *sustainable* food system should be created. Both respondents agree that the current food system is not sustainable. Looking at the non-spatial aspect mentioned in the previous section, it became clear that fundamental changes are needed. A new food system should be developed where sustainability is the prime aspect. All actors should take responsibility. In order for such a system to work, it is crucial to create a transparent system. Every actor, from producer to consumer, should have insight in the production methods of each product and the

sustainability of that product. Local food systems may offer a part of the solution here, at least when considering local food systems as efforts to bring producers and consumers closer together in the food chain, removing in between steps.

Although no direct part of this research, it can be said that sustainability can further be encouraged by rewarding sustainable choices, or penalize unsustainable choices. This can be done by including all costs of production, social-cultural, economical and ecological, in the price of the product by installing a sustainability tax. The tax income should be used by the government to alleviate the harm done to the social-cultural or ecological systems. Furthermore, including all costs in the pricing of products would give consumers an honest choice when comparing products.

The current planning of urban fringes is mentioned as a spatial problem for local food systems. The strict division between rural and urban activities obstructs the development of local food production. This division is most likely caused by the fact that different ministries work on the planning of respectively rural and urban environments. A mix of urban and rural activities will help to increase possibilities for direct producer consumer relations.

This chapter gave more insight in the development of Dutch local food chains from a scientific perspective. The food system has been analysed on a different level. The development of conventional agriculture in the Netherlands can explain the slow development of local food production compared to other western countries. Furthermore, the planning of the urban fringe has also shown to be influencing the development of local food. The chapter also gave some insight in the governmental and societal problems relating to the topic of local food production. Several suggestions have been given how to improve our current (local) food system to a sustainable food system. These will be taken along to the next chapter.

5 Planning for (local) food systems

This chapter will discuss the different results of the research and draw the final conclusions. While section 5.1 is focussed on answering the main research question as posed in the introduction and giving recommendations for the government and spatial planning, section 5.2 will reflect on the used research methods and suggest topics for further research.

5.1 Changing to a sustainable (local) food system

The research was started with the assumption that information about the development of local food production systems is lacking in scientific literature, especially for the Dutch context. This research aims to add information about the spatial aspects that influence this development in the Netherlands. This resulted in the main question, which was:

What spatial aspects affect the development of local food systems in the Netherlands, and how should spatial planning and the government deal with this development?

While many spatial aspects, such as infrastructure, soil type and water table, play a role in the possibility of starting a farm, these are not the main aspects that cause local food systems to develop slowly in the Netherlands. The importance of location and spatial aspects appears to be relatively low, with one exception. The presence of urban activities is vital for local food production to develop. Based on literature, the case studies, and interviews, it can be concluded that the relation between rural and urban activities is essential for local food production. However, urban and rural activities are often strictly separated in the Dutch planning system. In order to stimulate local food production, spatial planners in the Netherlands should make an effort to develop combined plans for the urban and rural environment.

Section 5.1.1 will elaborate on the abovementioned conclusion. Section 5.1.2 will give a final definition for local food production and argue for a focus on *sustainable* food production. As often happens in qualitative research, new questions can be asked and more conclusions can be drawn than simply answering the research questions (Creswell, 2003). Two additional, non-spatial, themes have proven to be of importance. Section 5.1.3 discusses the influence of the history of Dutch farming on the development of local food chains in the Netherlands. Section 5.1.4 discusses the relevance of social aspects when considering the development of local food production in the Netherlands.

5.1.1 Stimulating local food by integrating rural and urban activities

The literature review showed that local food chains are most likely to be found in the urban fringe (Jarosz, 2008) or metropolitan landscape (Heimlich, 1989). This is caused by the dynamics of the urban fringe. High land prices and pressure from urban land uses cause traditional forms of agriculture to move away, while small-scale farms that combine agriculture with extra functions take their place (Jarosz, 2008). As such, rural restructuring and urbanization are critical to the development

of AFNs. Both of these developments are present in the Netherlands, and yet there is a slow growth of local food production. In the case-study and the interviews, urbanisation and rural restructuring were not specifically mentioned as driving forces for the development of the local food systems. The relation between consumers and producers however, was shown to be essential for local food chains. As was stated by Jones et al (2004) the '*ability to link producers and consumers is at the heart of the local food initiatives*'. Simply put, there are more willing consumers near the city as in rural areas. The distance a local food chain can operate from the city may differ, depending on the distribution scheme used. The selection of cases ranged from the direct urban fringe to 20 kilometres out of town. Even further distances may be contemplated depending on the distribution methods.

Looking at the relation between local food production and the city, two important elements were found that negatively influence the development of local food systems: high land prices around the city on the one hand, and the strict separation between rural and urban activities in Dutch planning on the other hand.

High land prices

It seems the main reasons for farmers to switch production are displeasure with conventional market chains and/or an ideological motivation to work on more sustainable food production. High land prices were not named as either a problem or an incentive to start local food production by the respondents. However, the consulted researchers mentioned high land prices to be potentially problematic for new local food initiatives. Land speculation and pressure from other land uses makes land in the Netherlands expensive compared to other countries. When new local food initiatives are started, they need to be able to obtain land around the city. It will be hard for these new initiatives to make profit without producing in an industrial, highly efficient manner. Most initiatives are organic in nature and are usually less intensive as conventional agriculture, making it hard to be profitable near the city. On top of this, banks are not willing to take the huge risks for this kind of enterprises.

Two strategies could be further explored by the government and the market itself. The first strategy would be to search for more industrial and efficient ways to produce sustainable, local food for the city, which could have closing waste and energy cycles as its prime objective. The second strategy would be to search for new ways to distribute local food from the countryside to the city, where the location of food production would differ per type of product. Fresh products could then be produced closer to the city while storable products would be grown further away from the city.

Interaction between urban and rural activities

Besides high land prices, the separation of urban and rural activities negatively affects the development of local food chains in the Netherlands. Urban development in the Netherlands differs from other countries. Jansma and van der Schans mentioned the Dutch planning tradition of the compact city to be problematic for the development of local food chains. In order for local food chains to develop, interaction between urban and rural activities is essential. Currently, in Dutch

planning, rural and urban development plans are separately developed. The strong division between urban and rural planning is partly caused by the fact that different governmental organisations on the national level are responsible for the urban environment as are responsible for the rural environment.

In order for local food chains to function, urban citizens need to be able to travel to the rural areas, not only to buy local food, but also to experience the rural environment. To better integrate urban and rural activities, it is necessary to integrate urban and rural plans in one landscape plan. This should be done in such a way that urban and rural environments strengthen each other. The different actors involved in rural and urban planning need to be involved in such a planning process. The plan of 'Agromere' can serve as an example where urban and rural activities are planned together with help of various actors. Planners and architects should be aware of the possibilities of combining rural and urban living. To create these integral plans the government should consider combining all spatial activities in one organisation. It would be interesting to do further research on this topic from a planning perspective.

5.1.2 Defining local food production

Throughout the research, it became clear that several definitions of local food exist. The case studies showed that many forms of local food production are hybrids which also focus on organic production or landscape management tasks. It is difficult to come to a strict definition of local food production. Several remarks can be made about the definition as given in chapter 2.

A local food system is a food production, processing, and trading system that:

- 1. Is based on closer relationships between producer and consumer, both in physical distance and in production steps, compared to conventional agriculture*
- 2. Produces according to the sustainability ethos, in environmental, economical and societal perspective*
- 3. Uses a transparent product chain in which consumers get products laden with information*

It is important to note that the various respondents showed little interest in a geographical limited definition of local food. Often in 'local' food initiatives, the core aim is to come to a more sustainable form of food production. Chapter 4 showed that a local food system could also be realised on a larger scale and with more intensive production. Born and Purcell (2006) show that local is not necessarily more sustainable. Food from the other end of the world could be more environmental friendly as the product grown next door. It is essential that spatial planning and the government focus on the *sustainability* of production.

The respondents see local food chains preferably as shorter food chains. The local food movement should lead to a reduction of the number of steps in the food chain. This should lead to a better income for farmers, more information being retained in the food chain, and should thereby create consumer awareness. Reducing the number of steps in the food chain leads to a more transparent food chain in which

everyone from producer to consumer can carry a part of the responsibility for sustainable food production.

Following the above conclusions, the definition of local food could be changed to:

A local food system is a food production, processing, and trading system that:

- 1. Is based on closer relationships between producer and consumer, compared to conventional agriculture by reducing the number of steps in the food chain*
- 2. Produces according to the sustainability ethos, in environmental, economical and societal perspective*
- 3. Uses a transparent product chain in which consumers get products laden with information.*

In this definition the geographical notion is removed. More emphasis is present on the notion of reducing steps in the food chain. Sustainability remains a core aspect of local food systems.

It is important for planners in practice to regard local food production in a broad sense. Sustainable production should be a central element of planning in which local food production could serve as a tool to reach sustainability. Furthermore, the government should carefully consider if processing industry can be realized on the local scale as this research shows that it may have adverse effects on sustainability. The government should work towards organizing sustainable food systems by closing nutrient, energy and waste cycles. This should be done on the smallest scale possible, although for each product type a different scale could apply.

5.1.3 Intensive sustainable food production as alternative

The difference in development of local food systems in the Netherlands compared to other western countries can partly be explained by the historical development of agriculture in the Netherlands. Dutch agriculture has been internationally oriented for a long time and is focussed on competing on the world market. Due to the price squeeze (Renting et al, 2003) as mentioned in chapter 2, many farmers have invested in technology to produce more efficiently. The large amounts of capital involved in this form of production cannot easily be reverted. Conventional agriculture, including governmental policy and farmer education, is still largely concentrated on the world market.

Current local food initiatives often use less intensive forms of production. In order to switch to local food production, a farmer loses (part of) his invested capital. This may withhold conventional farmers to switch to local food production. Because Dutch agriculture is capital intensive, the development of local food chains in the Netherlands can be more difficult compared to other western countries. Focus on a system of sustainable food production could solve this problem. A farmer does not necessarily have to abandon intensive farming techniques in order to produce sustainable, as long as nutrient, energy and waste cycles are closed.

It is important that local food production should not exclusively be seen as extensive farming by the government. Intensive forms of food production could very well operate on a local or regional scale while still being sustainable. When considering

sustainable food production it is important to look which forms of food production lead to the best results in a specific context. The government should be open-minded to new sustainable developments. Regulations make it difficult to start new initiatives. It is often up to government officials to interpret how new developments should be handled within the regulations. In order to give more room for local food initiatives, new ways to deal with these developments need to be found. The main element of a new approach to local food developments would be to assess the development from a sustainability perspective: judging economic, social-cultural and ecological sustainability of the initiative.

5.1.4 A necessary change in society?

The research also showed a deeper problem behind the slow development of local food chains in the Netherlands. The interview with Wagemans showed that a fundamental problem is present in society. The economic system often overrules social-cultural norms and harms ecology. The conventional food system is based on profit, which has led to anonymity and non-transparency. Because of this anonymity, consumers and producers no longer take responsibility for the products they buy or grow. Environmental and social-cultural costs are shifted towards society or nature. The thought that one person no longer makes a difference in the total system makes behaving sustainable less important. Worse, because non-sustainable food is often cheap, buying non-sustainable is even encouraged. If the government or society wants to change to a more sustainable food system, several radical changes have to be initiated.

Essentially sustainable behaviour should be rewarded. In order to make sustainable choices profitable, the price of sustainable products should be lower as the price of non-sustainable products. While large parts of society already want a change to sustainability, individual consumers still buy the cheapest product most of the time. Several options exist to change current pricing of products. A new food system should be sustainable in economic, ecologic and social-cultural sense. Subsidising sustainable food production is as such no solution, as the product chain itself should be profitable. A solution can be found in changing current tax systems on food to a sustainable tax system. Whereas current taxes are a set percentage of the product price, the sustainability tax would differ per product. All costs made in the lifecycle of the product, but shifted onto other actors, could be calculated and included in the tax. Because current organic and local food already works towards closing of nutrient cycles, product from these chains will become relatively less expensive, while conventional food will become more expensive.

Connected with this issue a change is needed in consumer behaviour. Consumers need to understand where their products come from, and need to realise that they have a choice when buying food. Supermarkets, media and education programmes could play a major role in raising consumer awareness. By planning urban and rural areas together, as mentioned before, consumer awareness could be further increased. It is important that inhabitants of a town can recreate in and interact with the countryside; experiencing food production.

5.2 Recommendations for further research

Each qualitative research leads to new questions. As has been demonstrated above, this research is no exception. At the end of this section several interesting research topics will be listed for further research. First, the setup, relevance and reliability of this research will be discussed.

This research

During the research, it became clear that a focus on local food is hardly as interesting as a focus on sustainable food. While in scientific literature the term local food is often used for various initiatives, it became clear that the cases studied in this research are not concerned with local food in a geographical sense. A reduction of steps in the food chain and a pursuit to sustainable production is, at least in the selected cases, more important.

The question can be asked if this sample of cases is representative. The answer is most definitely no. It is possible a different selection of cases would have led to different results. However, some interesting conclusions could be drawn by comparing the case information to the opinions of Wagemans and van der Schans. Case information and the opinions of the researchers matched for most themes or were complementary. Therefore, it can be expected that the found conclusions are indeed valid for the Dutch context of local food production.

Furthermore it should be noted that this research was explorative: the aim was to explore what spatial aspects influence the development of local food systems. This research has also shown that the recent attention on food systems in planning is justified. Food production has always impacted the landscape and will always have an impact on the landscape. A transition to more sustainable food production will lead to changes in the relation between people and the landscape. Planning science can play an important role in this transition process.

New research topics

Several suggestions for further research were mentioned in this thesis. The most important being a study to the development of the urban fringe. How can the urban fringe be developed, connecting both rural and urban environment, as to allow for interaction between both? From a planning point of view, it may be interesting to research the feasibility of combining urban and rural development plans. Planning research can also focus on the relation between urban and rural activities in the urban fringe. How can a landscape be created where city and rural environment strengthen each other?

Two other research topics outside the scope of planning were mentioned during the interviews the first being the importance of the historical development of agriculture for current agriculture systems. According to van der Schans, the current local food movement is in many ways similar to the system devised by von Thünen. It would be interesting to look at the historic development of food systems in order to understand current food systems and develop good food systems for the future. The second research objective mentioned by van der Schans is focussed on the types of

products that can be grown at what distance from the city in a sustainable manner. Some products can best be grown 'on the desk', in the city, or in greenhouses depending on new technology.

Many other questions can be asked, of which most are outside the scope of planning science. However, it is clear that spatial planning should also incorporate questions on food. It remains strange to see that food has been absent from planning until recently, especially when realising the impact of food systems on the landscape.

References

- AESOP Sustainable Food Planning Conference (2009) Various presentations by scholars, practitioners and politicians. A list of participants and additional information can be found via: <http://www.isomul.com/foodplanning/index.htm>, last checked on 15-12-2009
- Beauchesne, A. & Bryant, C. (1999) 'Agriculture and innovation in the urban fringe: the case of organic farming in Quebec, Canada', *Tijdschrift voor Economische en Sociale geografie*, Vol. 90 pp. 320-328
- Born, B. & Purcell, M. (2006) 'Avoiding the Local Trap: Scale and Food Systems in Planning Research', *Journal of Planning Education and Research*, Volume 26, pp. 195-207
- Creswell, J. (2003) '*Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*', 2nd ed., Sage Publications Inc, Thousand Oaks, CA
- Europees parlement bureau Nederland & Parlementair documentatie centrum (2009) 'Landbouwbeleid', [online] available at: <http://www.europa-nu.nl/9353000/1/j9vvh6nf08temv0/vg9pir5eze8o>, last checked on 01-09-2009
- Grundert, K. (2005) 'Food quality and safety: consumer perception and demand', *European Review of Agricultural Economics*, Vol 32, pp. 369-391
- Heimlich, R. (1989) 'Metropolitan Agriculture: Farming in the City's Shadow', *Journal of the American Planning Association*, vol. 55, pp. 457-466
- Hidding, M. & Brink, A. van den (2006) 'Planning voor stad en land', 3de editie, Bussum, Uitgeverij Coutinho
- Holt, G. (2005) 'Local foods and local markets: Strategies to grow the local sector in the UK', *Anthropology of Food* [online], available at <http://aof.revues.org/index179.html#authors> last checked on 01-03-2010
- Holt, G. (2007) 'Local food in European supply chains: reconnection and electronic networks', *Anthropology of food* [online] available at <http://aof.revues.org/index479.html#tocto2n10>, last checked on 02-03-2010
- Jansma, J.E., Visser, A.J., de Wolf, P. & Stobbelaar, D.J. (2008) '*Agromere: how to integrate urban agriculture in the development of the Dutch city of Almere?*', paper for the IFOAM World Congress, Modena, Italy
- Jarosz, L. (2008) 'The city in the country: Growing alternative food networks in Metropolitan areas', *Journal of Rural Studies*, vol. 24, pp. 231-244
- Jones, P. Comfort, D. & Hillier, D. (2004) 'A case study of local food and its routes to market in the UK', *British Food Journal*, pp 328-335
- Jongman, R.H.G. (2004) *Frontis*, vol. 4: 'The new dimensions of European landscapes' Wageningen, Wageningen University

- La Trobe, H. & Acott, T. (2000) 'Localising the global food system', *international Journal of Sustainable development & World Ecology*, Vol. 7, pp. 309-320
- LNV (2005), 'Kiezen voor de landbouw', Den Haag, Ministerie van Landbouw, Natuurbeheer en Voedselkwaliteit
- Maas, J.H. (1994) 'De Nederlandse Agrosector: Geografie en dynamiek', Assen, Van Gorcum
- Morgan, K., Marsden, T. & Murdoch, J. (2006) 'Worlds of Food', Oxford University press, Oxford
- Morris, C. & Buller, H. (2003) 'The local food sector: A preliminary assessment of its form and impact in Gloucestershire', *Brittisch Food Journal*, vol 105, pp 559-566
- Pfeifer, C., Jongeneel, R., Sonneveld, M. & Stoorvogel, J. (2009) 'Landscape properties as drivers for farm diversification: A Dutch case study', *Land Use Policy*, vol. 26, pp. 1106-1115
- Pothukuchi, K. & Kaufman, J.L. (2000) 'The Food System', *Journal of the American Planning Association*, vol. 66(2), pp. 113-124
- Pretty, J. N., Ball, A.S. Lang, T. Morison J. I. L. (2005) 'Farm costs and food miles: an assessment of the full cost of the U.K. weekly food basket', *Food Policy*, volume 30, pp. 1-19
- Renting, H., Marsden, T. & Banks, J. (2003) 'Understanding alternative food networks: exploring the role of short food supply chains in rural development', *Environment and Planning A*, vol. 35, pp. 393-411
- Saunders, C. Barber, A. Taylor, G. (2006) Food Miles – comparative energy emissions performance of New-Zealand's agriculture industry, Lincoln University, Lincoln (New-Zealand)
- Seyfang, G. (2006) "Ecological citizenship and sustainable consumption: Examining local organic food networks", *Journal of Rural Studies*, Volume 22, Issue 4, p. 383-395
- Wagemans, M. (2009) 'Een zoektocht naar institutionele vernieuwing voor een duurzaam regional landbouwsysteem', InnovatieNetwerk, Utrecht
- Zeithaml, V. (1988) 'Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence', *The Journal of Marketing*, Vol. 52, pp. 2-22

Appendix A: Interview questions case-study (Dutch)

The next pages show the interview questions as used for the case-study. As the interviews were held in Dutch, the questions are also Dutch. The interviewed persons for the cases were:

Landwinkel: P. Brandsma

Agromere: J.E. Jansma

Groenten abonnement: A. and M. Visser

De nieuwe ronde: K. Nijhof

Landwinkel

Geschiedenis:

- Wanneer is Landwinkel opgericht?
- Wat was de aanleiding op het bedrijf op te zetten?
- Hoe heeft het bedrijf / plan zich ontwikkeld over de jaren?
 - o Zijn er tegenslagen geweest? Zo ja, welke?
 - o Zijn er meevallers geweest? Zo ja, welke?
- Wat zijn de vooruitzichten voor de toekomst?

Locatie:

- Waar zitten Landwinkels?
- Waarom zit Landwinkel op de huidige locaties?
 - o Zijn er voor/nadelen aan de huidige locaties?
- Wat zijn volgens u de ideale locaties voor Landwinkels?

Organisatie:

- Welke bedrijven en/of personen zijn betrokken bij het Landwinkel concept?
- Welke producten worden verkocht?
- Waar worden de verschillende producten geproduceerd/verbouwd?
- Wordt alle productie van betrokken boeren lokaal afgezet?
- Is er een directe relatie tussen landwinkels en de stad?
- Is het moeilijk om genoeg consumenten te bereiken?
- Waar komen consumenten vandaan?

Regelgeving:

- Zijn er regels/subsidies vanuit de overheid die het functioneren van Landwinkel vergemakkelijken?
- Zijn er regels/subsidies vanuit de overheid die het functioneren van Landwinkel tegenwerken?

Aanbevelingen voor de toekomst:

- Wat zou volgens u helpen om lokale voedselproductie in Nederland te stimuleren?

Agromere

Geschiedenis:

- Wanneer is het idee van Agromere ontstaan?
- Wat was de reden om de ontwikkeling in te zetten?
- Waarom is gekozen voor het integreren van landbouw in de woonomgeving?
- Hoe heeft het plan zich ontwikkeld over de jaren?
- Wat zijn de vooruitzichten voor de toekomst, komt Agromere er echt?

Locatie:

- Waarom is Almere gekozen als locatie?
- Welke andere locaties zijn geschikt voor lokale voedselproductie?
- Aan welke eisen moet een locatie voldoen?

Organisatie van de keten:

- Welke bedrijven / personen zijn betrokken bij Agromere?
- Welke vormen van landbouw worden voorzien?
- Willen de huidige boeren hieraan meewerken?
- Is het project vooral gericht op lokale landbouw voor Almere, of op productie voor export?
- Welke vorm(en) van distributie zou worden gebruikt?
- Is het moeilijk om genoeg consumenten te bereiken?

Invloed van regelgeving:

- Zijn er regels/subsidies vanuit de overheid die het functioneren van lokale landbouw beïnvloeden?

De toekomst:

- Wat zou volgens u helpen om lokale voedselproductie in Nederland te stimuleren?
- Waar is lokale voedselproductie nu te vinden in Nederland?
- Waar gaat het zich vooral ontwikkelen?
- Welke vorm heeft volgens u de meeste potentie?

Groenten Abonnement**Geschiedenis:**

- Wanneer is begonnen met het samenstellen van groentepakketten?
- Wat was de reden om deze ontwikkeling in te zetten?
- Hoe heeft het bedrijf / plan zich ontwikkeld over de jaren?
 - o Zijn er tegenslagen geweest? Zo ja, welke?
 - o Zijn er meevallers geweest? Zo ja, welke?
- Wat zijn de vooruitzichten voor de toekomst?

Locatie:

- Waarom is begonnen op de huidige locatie?
 - o Zijn er voor/nadelen aan de huidige locatie?
- Wat zou volgens u de ideale locatie zijn voor een bedrijf?

Organisatie:

- Welke bedrijven en/of personen zijn betrokken bij het samenstellen en verspreiden van de groentepakketten?
- Welke producten worden verkocht?
- Waar worden de verschillende producten geproduceerd/verbouwd?
- Welke vorm(en) van distributie worden gebruikt?
- Wordt alle productie lokaal afgezet?
- Waar worden producten afgezet?
- Is het moeilijk om genoeg consumenten te bereiken?
- Is er een directe relatie met de stad?

Regelgeving:

- Zijn er regels/subsidies vanuit de overheid die het functioneren van het bedrijf vergemakkelijken?
- Zijn er regels/subsidies vanuit de overheid die het functioneren van het bedrijf tegenwerken?

Aanbevelingen voor de toekomst:

- Wat zou volgens u helpen om lokale voedselproductie in Nederland te stimuleren?

De Nieuwe Ronde**Geschiedenis:**

- Wanneer is begonnen met de nieuwe ronde?
- Wat was de reden om het bedrijf op te zetten?
- Hoe heeft het bedrijf / plan zich ontwikkeld over de jaren?
 - o Zijn er tegenslagen geweest? Zo ja, welke?
 - o Zijn er meevallers geweest? Zo ja, welke?
- Wat zijn de vooruitzichten voor de toekomst?

Locatie:

- Waarom is begonnen op de huidige locatie?
 - o Zijn er voor/nadelen aan de huidige locatie?
- Wat zou volgens u de ideale locatie zijn voor lokale voedselproductie?

Organisatie:

- Hoe is het bedrijf opgezet? (Hoe werkt het bedrijf)
- Waarom is gekozen voor CSA (pergola constructie) en zelf pluk mogelijkheden?
- Wie zijn betrokken?
- Welke producten worden verbouwd?
- Wie bepaald wat verbouwd wordt?
- Wordt alle productie lokaal afgezet?
- Is het moeilijk om genoeg consumenten, geïnteresseerden te bereiken?

Regelgeving:

- Zijn er regels/subsidies vanuit de overheid die het functioneren van het bedrijf vergemakkelijken?
- Zijn er regels/subsidies vanuit de overheid die het functioneren van het bedrijf tegenwerken?

Aanbevelingen voor de toekomst:

- Wat zou volgens u helpen om lokale voedselproductie in Nederland te stimuleren?

Appendix B: Interview questions researchers (Dutch)

The list below gives a short overview of the interview questions as discussed with the experts. As the interviews were held in Dutch, the questions are also Dutch. The two interviewed experts were:

Dr.ir. M. Wagemans, researcher at InnovatieNetwerk

Dr. J.W. van der Schans, researcher at Dienst Landbouwkundig Onderzoek (DLO) and researcher at the Rural Sociology Group at Wageningen University.

Definitie van lokaal

- Wat kan volgens u verstaan worden onder lokale voedselketens?
- Op welke schaal moet lokaal geïnterpreteerd worden in Nederland en in de EU?

Locatie:

- Welke locaties zijn het meest geschikt voor lokale voedselketens?
- Aan welke eisen moet een locatie voldoen?

Geschiedenis/Ontwikkeling

- Wanneer is de ontwikkeling van lokale voedselketens in Nederland ingezet?
- Waarom is de ontwikkeling ingezet?
- Welke vormen van lokale voedselketens vinden we in Nederland?
- Tegen welke problemen lopen initiatieven aan?
- Wat werkt juist positief op de ontwikkeling van de ketens?
- Ontwikkelt de lokale sector zich in Nederland in uw ogen langzamer dan in andere westerse landen?
 - o Zo ja, wat zou hiervoor de reden kunnen zijn?

Invloed overheid en maatschappij:

- Zijn er regels / subsidies / beleid vanuit de overheid die het functioneren van lokale voedselketens beïnvloeden?
- Is de vraag naar lokale producten groot genoeg?
- Willen de huidige boeren wel meewerken?
- Wat zou volgens u helpen om de ontwikkeling van lokale voedselketens in Nederland te stimuleren?
- Welke rol kunnen ruimtelijke planning en politiek spelen in de ontwikkeling van lokale voedselketens?

De toekomst:

- Wat zou volgens u helpen om de ontwikkeling van lokale voedselketens in Nederland te stimuleren?
- Hoe verwacht u dat de sector zich in de toekomst verder gaat ontwikkelen?