Farming into the future

A Swedish case study of niche actors’ visions on a future food system

Myrte Rischen

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Supervisor: Ulf Jansson
Department of Human Geography
Stockholm University
SE-106 91 Stockholm / Sweden
www.humangeo.su.se
Abstract

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It is evidently clear that the current global food system urgently needs to transform to a sustainable food system. However, there is no consensus on what a sustainable food system looks like. Furthermore, there is a lack of discussion about desired food systems and how to accelerate the transition towards a desired food system. Therefore, this study researches perspectives on a desired food system and pathways to reach it. Through the theoretical framework of the Multi-Level Perspective with three additions, this research employs a case study of Swedish niche actors, who are trying to change the food system to a more sustainable one. The findings give the niche actors’ visions on characteristics of a desired food system, including production, processing, distribution and consumption. Also multiple leverage points are proposed that could create change to, or accelerate a sustainable food system transition. The research employs a personal focus by researching the process of personal and societal change to more sustainable niche practices. Hereby this study aims to contribute to studying processes of how sustainable food niches become mainstream, and the wider debate about sustainable transition theory.

**Keywords:** sustainability transition, food systems, change, change-pathways, desired futures, MLP
"A truly ideal state is likely never to be achievable, but it is nonetheless important to aim for best performance possible." (Gladek et al., 2016)
Preface

This master thesis research is the concluding part of the master programme Globalisation, Environment and Social Change on the Stockholm University. This is similar to my Bsc Future Planet Studies on the University of Amsterdam - an interdisciplinary programme about global issues on the interface of humanity and the rest of the Earth. This interdisciplinary education has made it clear to me that the wicked challenges that humanity faces today, have never been more urgent to address in a holistic manner. My wide interests range from climate change, to landscape use, forest management to food systems and the way that we, humans, deal with these intertwined issues. I believe that it is important and fun to discuss and think about solutions to the problems. Therefore, this study researched a topic that seems to be at the nexus of many of these problems and at the same time has the potential for many solutions: food.

Acknowledgements

The supervisor of this research, Ulf Jansson, has been a great discussion-partner to overthink the theories, approaches, literature and meanings. Our conversations improved this research due to his ever-positive and constructive comments. Thank you.

Also Judith Leijdekkers has, as always, offered her creative and supportive thoughts about researching, making it more real-life and meaningful, and having fun in what you do. I hope that this will continue in the future. I am sure it will. Tack så mycket.
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List of abbreviations
CSA Community-Supported Agriculture
EU European Union
FAO Food and Agriculture Organisation
MLP Multi-Level Perspective
WWOOF World Wide Opportunities on Organic Farms
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Appendix I: Interview guide
1. Introduction

In the Anthropocene - the proposed new geological era of humanity's impact on Earth systems - the greatest challenge in the 21st century is to decouple human development from negative environmental impact (Jackson, 2015; Steffen et al., 2015). This should be done within the planetary boundaries, however it is suggested that at least three out of nine boundaries have already been crossed: climate change, global nitrogen cycle and biodiversity loss (Rockström et al., 2009). Human activity has caused severe ecosystem degradation, with currently 60% of the global ecosystem services being endangered and more than 2 billion hectares of degraded land (Ferwerda, 2012). Thus it is essential and highly needed to restore ecosystems on a large scale (Ferwerda, 2012). Currently more restoration initiatives are being implemented; not the least under global agreements such as the Sustainable Development Goals and the land restoration programme of the Bonn Challenge (Elisson et al., 2017; FAO, 2017; IUCN, 2017; Verdone & Seidl, 2017).

The current state of the global food system is at the nexus of these problems (McIntyre, 2009). Agriculture is the largest cause of current global environmental change (Rockström et al., 2016). Amongst the many estimations, it is claimed that the global food system is responsible for 60% of biodiversity loss, 33% of degraded soils, 24% of greenhouse gas emissions and 90% of overexploitation of commercial fish stocks (Belchior et al., 2016). While most contemporary agricultural systems weaken global natural carbon sinks, they have the vast potential for biological carbon removal (Montagnini & Nair, 2004). This means that instead of contributing significantly to many forms of ecosystem degradation, a differently organized food system could contribute to restoring social-ecological systems into resilient and sustainable systems (Rockström et al., 2017). The above shows that the academic and public opinion has increasingly come to the agreement that the current global food system needs to change.

Thus, it is by now widely acknowledged that an agricultural transition to a sustainable food system is highly needed (Koohafkan et al., 2011; Belchior et al., 2016; FAO, 2018). However, there is no consensus on what a new food system of sustainable agriculture exactly entails (Koohafkan et al., 2011). While being highly contested, the array of alternative agricultural approaches include conservation agriculture, agroecological systems, organic agriculture, permaculture, regenerative farming (Koohafkan et al., 2011; Costa, 2016). There is a growing movement of alternative farming practices that promote more sustainable agriculture, however it still makes up only a small part of the total global food system and is generally under-researched (Chappel & LaValle, 2011; Spaargaren et al., 2013; Hinrichs, 2014; Gladek et al., 2016; EIP-AGRI, 2017). Therefore, this research is mainly concerned with collecting perspectives on the transition towards a desirable and sustainable food system.

Even though alternative forms of agriculture are recently being adopted by large scale actors such as the Food and Agriculture Organisation (FAO) and the European
Union (EU), these alternative forms can still be seen as niches: they are small players that challenge the hegemonic agricultural system that is currently still the status quo (Spaargaren et al., 2013; Gladek et al., 2016; EIP-AGRI, 2017; FAO, 2018). Increased action is needed in order to reach the Sustainable Development Goal of making the agricultural sector sustainable by 2030 (FAO, 2017).

The main aim of this research is to contribute to the transition to a sustainable food system by researching the case of Swedish food system niche actors through the theory of sustainability transitions. The theory provides a framework to analyse the transition and helps with finding solution-oriented action points to accelerate a food system transition. Because of the contested visions on what a sustainable and desired food system entails, it will be the focus of this research. Multiple niche actors who are trying to change the food system in Sweden are being asked what their ideas are about ideal food systems and what is needed to get there. How do niche innovators see the transition? Background questions that lead the research include: How do the niche actors envision a desired and sustainable food system? What makes alternative practices become mainstream in the food transition? Why do we not yet have a sustainable food system? and: What is constraining change? Looking at the cases of niche actors, it is also being investigated what brought these niche actors to change to alternative ways than the mainstream. This may help to understand how the transition to a sustainable and desired food system may be developed and accelerated.

There are many definitions of the concepts of 'food system' and 'sustainable food system'. While there are many interpretations what 'sustainable' is, the most commonly used definition of sustainability is the interpretation of sustainable development of the Brundtland commission as sustainable development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987: 8). However what this actually entails has many different conceptions (Heinrichs et al., 2016). This contested meaning sustainability also applies to a sustainable food system, which means that there is currently much debate on what a sustainable food system entails (Koohafkan et al., 2011).

As stated above, because there is no consensus on what a sustainable food system is, this research collected opinions of niche innovators about what their idea is of a sustainable food system. The concept of 'food system' is addressed broadly, however the scope focuses on rural - mostly - agricultural practices. To give a definition of a 'food system', the definition of the FAO is given: a food system "encompasses all the stages of keeping us fed: growing, harvesting, packing, processing, transforming, marketing, consuming and disposing of food" (http://www.fao.org/cfs/home/blog/blog-articles/article/en/c/448182/). This research asked niche innovators about their ideal food system, while leaving the interpretation of 'food system' open to their interpretation. Thereby this research focused on certain parts of a food system and left others out. It focuses on food production, processing, distribution and consumption, while other parts that could be considered as part of a food system, such as food waste, are not included. Furthermore, it is important to mention that there are many other practices at the
frontiers of a sustainable food system that are small and being developed, but that will not be explicitly handled in this research, Amongst others, these include urban farming, reducing food (and packaging) waste, greenhouse production, new plant-based protein-sources, (algae) aquaculture and reduced inequalities in access to food. These topics also need to be addressed to achieve a sustainable food system in the future, but it falls out of the scope of this research to empirically focus on that. This research focuses on alternative rural food practices in Sweden. Apart from sustainability, this research often refers to 'sustainable and desirable food systems' because the addition of 'desirable' aims to include other aspects than sustainability, such as equity and animal ethics.

As stated above, the lay out of a sustainable food system is highly contested in academic debates. Furthermore, Hinrichs (2014) claims that the link between sustainability transition literature and agricultural transitions literature has been underexplored, and especially the focus on the future has been lacking so far. This research addressed this gap by linking the sustainability theory to food systems and having a future perspective on this, because the visions of future sustainable food system are researched. Furthermore, Miles et al. (2017) argue that more long-term whole-system agroecological and socioeconomic research is needed to redesign food systems especially at the farm and landscape level. Therefore this research contributes to the literature by addressing multiple gaps by looking at the Swedish case of niche actors' perspectives on a desired and sustainable future food system through a sustainability transition perspective. Hereby this research topic falls under the broader topic of researching personal and societal change processes.
2. Methods

This chapter explains the methods that were employed in this research. First the philosophical approach on which the research is based, is explained. Then the research strategy and design are elaborated upon. The chapter ends with some reflections on the research and ethics.

2.1 Philosophical bedrock of the research

Epistemology
The epistemology of this research is interpretivism, which is about understanding and explaining social action (Bryman, 2012). More specifically, the approach could be argued to be phenomenological, because this approach assumes that the role of a researcher could be to "access to people’s ‘common-sense thinking’ and hence [...] interpret their actions and their social world from their point of view." (Bryman, 2012, p. 30). However, this assumption is limited because an important characteristic of phenomenology does not apply to this research: namely, to aim for understanding people's everyday practices and experienced reality (Barun & Clarke, 2006). This is not so much part of this research because the aim is to outline the perspectives on a certain issue (the food system) of the respondents.

Ontology
This research uses the constructivism assumption that social phenomena and social interaction continuously influence and shape each other (Bryman, 2012). This postmodern perspective applies also to the ideas that the perspectives of the research respondents shape their actions and vice versa, and that the author’s perspective as a researcher is not a definite reality, but a constructed reality.

2.2 Research strategy and design

A qualitative research strategy is used by employing a case study design (Bryman, 2012). A case study is used because of the interest in the unique case of niche actors in the food system in the Swedish context. This research could be regarded as mostly inductive because there were no predetermined themes used from previous literature and the collected data formed the basis for the theme formation (Braun & Clarke, 2006). However, it could be argued that this research is also partly deductive, because the theoretical framework of transitions theory was used to form questions and to guide the theme-formation in the analysis.

Data collection
This research was conducted between January and May 2018 in and around Stockholm, Sweden. The data was collected through 11 semi-structured interviews in a conversational interview style. In addition to the interviews, one (monthly) panel discussion was visited of innovators in the Swedish food and tech industry. This makes up a minor part of the data and it is only briefly mentioned in section 4.2.2
distribution. The units of analysis are niche actors in the food system in Sweden. For practical reasons of finding niche actors, the respondents were selected through the snowball sampling technique. Because this technique was used, the research led to two relevant respondents who were currently not living in Sweden, but in Turkey and Germany. These respondents previously lived and worked on Swedish farms that are relevant in this research. Because of the relevance of the interviews for this research and the similarity to multiple respondents in Sweden, these respondents were included.

The interviews were conducted face-to-face or on the telephone. The 5 face-to-face interviews were recorded and transcribed. The 6 telephone interviews were written down during and directly after the interviews. This method could have placed biased emphasis from the researcher's perspective on certain topics, because it was written down from memory. However, for practical reasons it was not possible to record the phone calls. Eleven interviews were conducted of which one interview was partly with two respondents. This interview was conducted on a farm when the second respondent joined later during the interview. An interview guide was used to lead the semi-structured interviews (Appendix I).

Description of research respondents
The eleven respondents were found through the snowball sampling technique. An initial appeal for possible research respondents was distributed through the Stockholm Food Movement (SFM). This medium was chosen because its aim to change the system to "a more sustainable food system" matches the aim of this research and because the author lives in Stockholm (source: SFM Facebook-page). The conditions for selecting respondents were: a person who professionally tries to change the current food system in Sweden. To avoid hobby-farming and too small initiatives, the requirement was that the respondents were professionals. The appeal stated to look for:

"[...] professional producers/farmers in Sweden who identify their practices as 'sustainable/regenerative/organic/permaculture' or any other 'alternative' ways of farming than the mainstream industrial practices."

The respondents included 7 farmers: they own, work or have worked on an alternative farm in Sweden (and one respondent currently works in Turkey) (table 1). Two respondents work in setting up new food distribution systems in Sweden (with international ambitions). One respondent is the founder of an organisation that aims to change the food system by working together with sustainable niche farmers in Sweden. One respondent is a researcher with a background in agronomy, who currently works for an EU-funded project that aims to build "ecological recycling agriculture and societies" (source: the organisation's website). For privacy reasons, all the names of the respondents and the organisations are anonymised.
Analysis method

A thematic analysis method is used to analyse the data of the semi-structured interviews. Braun and Clarke (2006, p. 6) describe this as "a method for identifying, analysing, and reporting patterns (themes) within data". Furthermore, from a constructivist perspective, thematic analysis "seeks to theorise the socio-cultural contexts, and structural conditions, that enable the individual accounts that are provided." (Braun & Clarke, 2006, p. 14). Even though thematic analysis and content analysis are often interchangeably used, thematic analysis differs from content analysis in that it is purely qualitative, contrarily to the possible quantification of data in content analysis (Vaismoradi et al., 2013). Furthermore, thematic analysis is often more focused on nuances, details and a wider context of the data (Vaismoradi et al., 2013). Thematic analysis is used because its characteristics align with the research aim of collecting respondent's perspectives and with the data collection method of semi-structured interviews.

So the thematic analysis procedure was followed, as described by Braun & Clarke (2006). This means that the transcribed data were reviewed multiple times, during which initial themes were formed. The questions of the interview guide lead the initial thematic framework, through which each interview was analysed. Overarching themes were then formed, that combined the findings of all the interviews. These are presented in the next chapter.

2.3 Research reflections

The results are presented as briefly as possible, but it needs to be emphasised that the rich and diverse ideas of multiple persons cannot be forcefully bundled in a quick take-away-message. Unavoidably, ideas were summarised, which probably lead to blunt presentation, leaving aspects unnamed and possibly even misinterpretations of some aspects.

Another research limitation is that this research might be biased towards people who are driven by idealism. An inherent motivation might make someone share his or her ideas and practices sooner than someone who is not driven by a same kind of
idealism. This means that there might be farmers who were not included in this research, who practice alternative farming for less idealistic reasons. Their reasons might be because they have always done it like this, or for other reasons, or that they are less willing to share their story than people who are driven by idealistic reasons. This means that the described results might give a more idealistic picture of reality than it is the case.

A major limitation of the snowball sampling method is that there is a potential bias in the data because parts of the respondents knew each other and (had) worked together. These links were not completely clear and are therefore not explicitly described in this research. But it should be kept in mind that the interconnectivity of the research respondents can have influenced the picture that this research sketches. However, the interconnectivity could also be seen as a research result because the aim of the research is to explore this particular case of Swedish food niche practices, which were found to be a growing and (internationally) intertwined community/movement. Therefore, it could be considered as a part of this research that the respondents are personally and professionally connected. Nevertheless, this most likely has influenced the outcome of this research.

Another possible limitation is that the interviews were conducted in English, which might have limited the conversations in terms of understanding nuances, since most respondents and the researcher were not native English speakers.

Lastly, as mentioned above, many of the respondents know each other and the number of respondents is limited (eleven). Therefore, the claim that this research provides the perspective of the alternative farming movement in Sweden has to be taken with caution. Therefore, the external validity of generalising the results of this study beyond the specific research context should be considered carefully.

**Ethics**
This research employed interviews, whereby it is important to carefully consider research ethics of the researcher's way of dealing with the research participants and the given information. As Frankfort-Nachmias & Nachmias (1996) state, an ethical dilemma in the social science research is the researcher's dilemma between a right to conduct research and the participant's right and welfare. To address the right and welfare of the research participants, the research should include (reasonable) informed consent and securing participants' privacy, according to Frankfort-Nachmias & Nachmias (1996). This research interviewed participants about their ideas, values and norms, which can be personally delicate. Therefore it is regarded as highly important that the participants' rights were honoured. Reasonable informed consent was conducted by explaining the aim and lay out of this research to the participants. Hereby the four elements of informed consent were addressed that Frankfort-Nachmias & Nachmias (1996) give: information, comprehension, competence and voluntarism. Furthermore, the participant’s privacy was secured by making the interviews anonymous and confidential.
3. Theoretical framework

This chapter provides the theoretical framework for this research by going into sustainability transition theory and more specifically the Multi-Level Perspective (MLP). Three suggestions are made to add to the MLP framework. This is then linked to the topic of food system transition. Lastly, the focus of the rest of this research including the research questions is explained.

3.1 Sustainability transition theory

Transition theory is a young, fluid and rapidly developing scientific field, which has received increasing scientific attention in the last decade (Lawhon & Murphy, 2011; Hansen & Coenen, 2015). A transition can be defined as ‘radical structural changes of societal (sub)systems’ (Rotmans & Loorbach, 2009, p. 185). Transitions theory originated in the 1990s in the Netherlands, out of a longstanding history of managing the natural land- and seascape (Hinrichs, 2014). While it started with a technocratic approach of managing change, it has increasingly been complemented by social, cultural and political approaches to research systems such as car, energy or food systems (Lawhon & Murphy, 2011; Spaargaren et al., 2013). It acknowledges that transitions of complex adaptive systems such as the food system have wicked problems (they are dynamic and it is problematic to define and solve them) (Dentoli et al., 2016). The role of human behaviour as agents of social change receives increasing scholarly attention within transition models (Spaargaren et al., 2013).

Amongst other directions, sustainability transition theory is a subfield of transition research, which could be described as "a theory on how transitions towards sustainability gain scale from niche to mainstream" (Dentoli et al., 2017). The concept of 'sustainability transition' builds on the earlier introduced concept of 'sustainable development', as first named in the 1987 Brundtland report (Hinrichs, 2014; Heinrichs et al., 2016). This approach is used considerably to scientifically ground the governance of sustainability transitions in Europe (Lawhon & Murphy, 2011; Rauschmayer et al., 2015).

Multi-level perspective

Amongst the multiple approaches that are distinguishable within sustainability transition theory, one of its major frameworks is the Multi-Level Perspective (MLP) that was first introduced by Geels (2002) (figure 1). It provides a systemic framework to study different systemic scales in dynamic transitions (Spaargaren et al., 2013). Lawhon & Murphy (2011, p.355) claim that this approach is useful to study "how and why certain unsustainable development paths have evolved and what constrains a society, region, industry, or community from shifting toward more sustainable [structures]". A simplified version of the original diagram is given in figure 1, whereby the landscape level represents large and slow (societal) trends and normative values, such as globalisation, environmental pressure and the political structure of a society (Lawhon & Murphy, 2011). The regime level represents the status quo of society, including established practices, conventions, rules, institutions
and actors. The niche level is the lowest level of institutionalisation, representing innovations that challenge the status quo by creating alternative structures and practices. A bottom-up view of societal change is characteristics of transition studies, which means that innovation that triggers change comes from the niche level and can only happen when a certain number of successful niches/innovations align (Spaargaren et al., 2013). Because the MLP provides a useful tool to analyse sustainability transitions, the main idea of MLP will be used as the basis framework for this research.

Figure 1. Simplified version of the multi-level perspective within transition theory (adapted from Geels, 2002)

3.2 Three additions to the MLP framework

Sustainability transition theory has a broad scope by emphasizing the required multi-level and interdisciplinary perspective, but it has been criticized that the theory is too simplistic and lacks some richer perspectives (Lawhon & Murphy, 2011; Geels et al., 2016). Amongst other arguments, such as a lack of attention for power dynamics and geography (Hansen & Coenen, 2015; Geels et al., 2016), three main critiques of sustainability transition theory (incl. MLP) are addressed here: (1) lack of focus on individual agency, (2) multiple change-pathways and (3) explicit normative descriptions of desired future aims.

**Individual agency**

Firstly, multiple scholar, such as Hansen & Coenen (2015), Lawhon & Murphy (2011) and Rauschmayer et al. (2015) argue that the role of individual agency and personal motivation in transitions has been not addressed enough. The complex dynamic between the systemic level and the individual level has been a point of debate.
Rauschmayer et al. (2015) argue that the behaviour theories that are often used to explain behaviour change from the individual level in transition theories employ a too narrow and rationality-based perspective. One of the theories that could be related to this critique is Lewin's force field theory: this theory describes change from a perspective of individual psychology in relation to group dynamics (Swanson & Creed, 2014). Essentially, it states that a person's behaviour is determined by two forces: driving forces for change and restraining forces against change (Burnes & Cook, 2013). The outcome of what the actual behaviour will be is an equilibrium between these two forces. Swanson & Creed (2014) point out that the force field theory is more complex than how it is commonly used. They state that it is a matter of perspective if a factor is perceived as a driving force or as a constraining force. The perception of factor (constraining or enabling) can be different both per person, and one person can change her/his perspective over time: people can perceive a single factor as an enabler in one instance and as a constraint in another (Swanson & Creed, 2014). Therefore, this research will regard aspects that influence change as leverage points that could be regarded both as a blocking force and as an enabling force for change. Furthermore, Swanson & Creed (2014) claim that if one wants to understand or influence the forces on a person's behaviour, one has to look from this person's perspective. This links to the constructivist approach of this research that a person's perspective shapes their actions and vice versa. Thus, this research adopts a more person-focused approach, as an addition to the systemic view of the MLP framework, in researching the sustainability transition of the food system.

**Multiple change-pathways**

Secondly, transition theory has been criticised for being too narrowly focused on one type of transition-pathway, which is a manner to create change (Geels et al., 2016). Therefore multiple scholars have proposed an extension to the transition theory and the MLP framework by categorising a broader array of change-pathways (Geels & Schot, 2007; Geels et al., 2016). Dentoli et al. (2017) propose a typology of multiple food transition pathways and its enacting actors, which seems to be a clearer and more useful categorisation than previous categorisations (such as the ones proposed by Geels et al., 2016), partly because it places more emphasis on the role of individual agency. This categorisation distinguishes four types of change-pathways and related actors (Dentoli et al., 2017) (table 2). The pathways are strategies that can be employed by actors to trigger or accelerate change. They are briefly explained below.

- The **collaboration-pathway** pursuits multi-stakeholder dialogues and partnerships of mostly large-scale industrial actors to create change. An example is The Sustainability Consortium (Dentoli et al., 2017).
- Within the **supporting-pathway**, actors use their power to steer change in their desired direction. An example is Unilver who imposed new sustainability practices on their suppliers and retailers (Dentoli et al., 2017).
- The two latter pathways take on a more individual-focus. The **doing-pathway** is characterised by often small-scale actors who pursue change by creating alternatives "as niches [who] confront, rather than engage with, mainstream agricultural institutions." (Dentoli et al., 2017, p. 10). Examples include entrepreneurs within
new frameworks such as circular economy or community-supported agriculture (CSA), and movements such as insect-consumption and slow food movements (Dentoli et al., 2017).

- The forcing-pathway is similar to the doing-pathway in that it pursues change by confronting existing power structures. The difference is that forcing actors often operate closer to the boundaries of society by the use of campaigning, demonstrating, activism and conflict (Dentoli et al., 2017). Despite it being ethically debatable in extreme forms, this type of change-creation sparks deep re-thinking of societal 'rules of the game' (Dentoli et al., 2017). Examples include civil rebellions (and wars), social movements such as Via Campesina or the destabilisation of North African governments in 2008 after food price spikes (Dentoli et al., 2017).

These four typologies provide a useful framework to analyse different ways to pursue change. Because it has been criticized that transition theory has focused too narrowly on the collaboration-pathway (as mentioned above), this categorisation aims to add a broader perspective to the transition theory debates. This research contributes to broadening this perspective by focusing on the doing-pathway as employed by food system niche practitioners. Even though this categorisation of four change-pathways provides a perspective to think about the multiple and different ways that one could pursue change of a (food) system, they are not excluding in their ways actors pursue change. To give an example: a niche-practitioner who aims for change by doing - e.g. entrepreneurs -, could also use multi-stakeholder dialogues or could radically confront existing power structures by force. So the change-pathways and change-actors are not mutually excluding, but they describe the main manner of how a person or organisation aims to change existing structures.

<table>
<thead>
<tr>
<th>Change-pathway</th>
<th>Actor</th>
<th>Example of actors</th>
</tr>
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<tbody>
<tr>
<td>Collaborating</td>
<td>Connecter</td>
<td>The Sustainability Consortium</td>
</tr>
<tr>
<td>Supporting</td>
<td>Powerful</td>
<td>Unilever</td>
</tr>
<tr>
<td>Doing</td>
<td>Niche</td>
<td>Community-supported agriculture (CSA)</td>
</tr>
<tr>
<td>Forcing</td>
<td>Rebel</td>
<td>Via Campesina</td>
</tr>
</tbody>
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Table 2. Four types of change-pathways and connected change-actor (actors are added by this author) (Dentoli et al., 2017).

** Desired future aims **

A third and last critique on sustainability transition theory that is being addressed here is the lack of explicit normative descriptions of desired future aims. Rauschmayer et al. (2015) argue that a part that is missing in the current sustainability theory is the creation of knowledge on what a desired future is and why. They call this target knowledge. Rauschmayer et al. (2015) claim that sustainability transition theory, mainly by the use of the MLP framework, has so far mainly focused on transformative knowledge, which is about understanding the ways that transitions happen. It is argued that it is also necessary to create "clear cut objectives or normatively defined principles to steer the process of particular transition dynamics towards a more sustainable world" (Rauschmayer et al., 2015, p. 3). While there has been a lot of effort in vision-creation and scenario-building in
academia and (global) governance institutions (such as the Sustainable Development Goals or the International Panel on Climate Change (IPCC)-reports), it remains a matter of debate how much these broad global narratives practically achieve desired change on the smaller level (Rauschmayer et al., 2015; Öborn et al., 2013). Furthermore, Vieland et al. (2018) point out to the importance of narratives and storytelling in imagining and achieving transformed futures. In line with this critique, it is the opinion of this author that it is necessary to create more stories and discussions on desired futures in order to realise a sustainability transition. As Gladek et al. (2016, p.142) point out: "A truly ideal state is likely never to be achievable, but it is nonetheless important to aim for best performance possible". Hereby, goals or an ideal system description could be seen as dynamic and plural, in that they can change along with changing circumstances and are not one-size-fits-all solutions (Gladek et al., 2016). This research addresses this above-explained gap by exploring the perspectives on desired futures of multiple niche actors in the Swedish food system.

3.3 Food system transition

As explained in the introduction, it is by now widely recognized that a radical transition of the current agricultural system is urgently needed because of its negative effects on ecosystems and human societies (EEA, 2016, FAO, 2018). Even though food and agricultural systems have been widely studied for many decades, sustainability transition research has so far not much focused on agricultural systems (Hinrichs, 2014).

While the concept 'sustainable agriculture' has been a point of debate since at least the 1980's, there has recently been increased attention to how the concept's interpretation relates to alternative agricultural models (Koohafkan et al., 2011; Costa, 2016). Despite ongoing debates on definitions, this research uses the MLP framework (with three additions) to look at the current food transition and thereby distinguishes between mainstream agriculture (the regime) and alternative agriculture (the niches). Another scholarly discussion of definitions that is acknowledged in this research, but that is not extensively included due to limited space, is the difference between food systems and agricultural systems. While realising that food systems could also include forms of urban food production, aquaculture and fishery, this research refers to rural agrarian landscape when it uses the terms food systems or agricultural system (if not stated otherwise). The production, processing and consumption will be addressed.

Spaargaren et al. (2013) describe how the present, mainstream (European) food system has developed since the World War II. With the underlying ratio of preventing hunger, the system focused on intensification, specialisation and efficiency. The current food system is still to a large extend dominated by this way of thinking and behaviour, and is largely controlled by a small number of large-scale actors in production, processing and retail (Gladek et al., 2016). Using the MLP framework to approach a sustainable food transition, this hegemonic, conventional
food system is seen as the status quo: the regime. Hereafter, this will be described as mainstream or conventional farming/agriculture.

The mainstream food system in the global North has been challenged since the 1980's by alternative practices and discourses with values on food quality, food safety, animal wellbeing and ecosystem health (Wilson, 2007; Spaargaren et al., 2013). The emphasis of these alternative kinds of agriculture lies on extensification of land use, limited or no external farming inputs, diversification and more inclusive governance through inclusion of grassroot actors (Wilson, 2007). Alternative farming practices include a wide variety of practices, names and definitions. Amongst them are conservation agriculture (no or minimum tillage), organic agriculture, agroecology, permaculture, agroforestry and regenerative agriculture (Koohafkan et al., 2011; Costa, 2016). Arguably, they share in a more or lesser extend the aims of holistic land management, closing nutrient and carbon cycles, building soil health and efficient water use and crop resilience. Furthermore, re-establishment of local, short food chains and increased eco-labelling have been linked to a decrease of consumers' trust in food systems since the 1980's (Spaargaren et al., 2013).

Spaargaren et al. (2013) distinguish (1) an anti-industrial movement from the consumer-side, (2) a more 'nature-driven' alternatives that emphasis the multifunctionality of rural areas in Europe, and (3) more 'technology-driven' precision agriculture. The use of alternative and more sustainable agriculture is increasingly being adopted all over the world (Derpsch et al., 2010; Costa, 2016; Gladek et al., 2016). Despite the growing movement of these alternative practices, it still makes up only a small part of the total global food system (Chappell & LaValle, 2011; Gladek et al., 2016; Hinrichs, 2014; Spaargaren et al., 2013).

There are many visions on what a sustainable food system might entail. Koohafkan et al. (2011) propose criteria to assess characteristics of biodiverse, resilient, productive and resource-efficient agriculture. According to Gladek et al. (2016) a sustainable food system would be resilient, and thus adaptive and can learn and adjust itself. It is claimed that consumption should have limited animal products (especially in wealthier countries), switching to crops that have higher nutrient-resource efficiency, (such as pulses, mushrooms, insects and algae) (Gladek et al., 2016). Other suggested changes are to heavily reduce food waste and to stop the competition for land and other resources by biofuels production (Gladek et al., 2016). Foley et al. (2010, p. 341) argue that "[s]olutions should focus on critical biophysical and economic `leverage points` in agricultural systems, where major improvements in food production or environmental performance may be achieved with the least effort and cost."

Wilson (2007) points out to the shortcomings of the dualistic thinking about agriculture of productivist vs. post-productivist by suggesting a more gradual interpretation with the concept of multifunctional agriculture. This relates to ongoing debates about land sparing vs. land sharing (integrating and separating land

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1 For deeper explanations of different definitions and descriptions of these agricultural practices, see McIntyre,
uses, respectively) (Fischer et al., 2014). Thus the easy distinction between sustainable agriculture and unsustainable agriculture is contested. It is also proposed to go beyond sustainability as a concept by adopting a regenerative paradigm (and practices) (du Plesis, 2012).

As stated above, the notion of what sustainable food practices are and what is desired is heavily contested. While there seems to be more agreement on that the current food system is unsustainable, we are far from agreement about what exactly is a sustainable system and what is a desired system. Therefore, this research will collect the different perceptions on what a sustainable and desired food system would look like. By interpreting these perception through the MLP framework, it researches to what extent farming practices and paradigms - such as organic farming or regenerative farming - are mainstream or alternative, and if they are regarded as sustainable or unsustainable. While acknowledging that these perceptions differ per place and per person, this research examines the case of food system niche practitioners in Sweden.

Thus, to clarify how the MLP framework is used to look at a sustainability food transition in the rest of this research: this research will hereafter use the terms 'mainstream' or 'conventional' or 'unsustainable' agriculture as a different practice and discourse than 'niche' or 'alternative' or 'more sustainable' agriculture, following the above descriptions.

3.4 The focus of this research

The above has briefly introduced sustainability transition theory and one of its main frameworks, the MLP framework. Three shortcomings of this theory were addressed: an individual focus, the plurality of change-pathways and narratives on desired futures. Then multiple concepts, perspectives and debates about food transition were mentioned. Now it will be explained how this research will aim to contribute to these theories.

The gaps in the literature point out that the following is missing: a common narrative amongst multiple change-actors about what a desired future is and why, and the role of individual agency in this story. Applying this to the food system, lead this research to one group of change-actors, the niche practitioners; what they think is a desired future (and why) and how to get there, with the focus on individual agency. Hereby this research contributes to creating a wider discussion about sustainable food systems in the sustainability transition field.

Research questions

Following from the above, multiple questions arise: Why do we not yet have a sustainable food system? What is holding the transition back? The same question can be reverted: what is needed to accelerate the transition? What are the opinions on which direction to head for? This research asks these questions to some of the people who are trying to change the Swedish food system.
The main research questions is:
RQ: What are the perceptions of multiple niche-actors of the food system in Sweden on the transition towards a sustainable and desired food system?

Subquestions:
RQ 1) What does a sustainable and desired food system look like in their opinion?

The perception of what a sustainable food system is of the niche actors is researched. This aim addresses the literature gap of missing narratives about ideal, desirable food systems. It also addresses the gap of scientific interest in actors that take the doing-pathway.

RQ 2) How do the niche actors envision the transition towards a sustainable and desirable food system?

The transition is interpreted as steps that need to be taken to reach the described goal of a desired system. This includes an investigation of the personal stories of why the niche-actors started to work in their niche and of multiple leverage points that could enable or accelerate the transition. This question aims to take a personal approach on driving and constraining forces (leverage points) and personal narratives.
4. Case study of Swedish niche actors

4.1 The Swedish case

Forestry and agriculture have traditionally been a very important source of food, income and other resources for Sweden (Antonsson & Jansson, 2011). The Swedish landscape, agriculture and forestry have transformed dramatically over the last century from an agrarian to an industrial national (Sylwan, 2011). Amongst others, major changes include improved knowledge, mechanisation and more efficient management, which increased the productivity of the landscape with fewer people working on it. The landscape transformed from diverse uses to more simplified land division between forest and arable land (Antonsson & Jansson, 2011). This fits in the broader European trend of decreasing mixed agriculture such as agroforestry, however this type of multifunctional land use has recently received increasing European support (Eichhorn et al., 2006; EIP-AGRI, 2017). Just like in other parts of Europe, Sweden experiences the post-war agrarian industrialisation, such as the use of artificial fertilizer, which made yields increase enormously with fewer people working on the land (Antonsson & Jansson, 2011). At the beginning of the 20th century Swedish farms were mainly inherited smallholdings, which made up 65-85% of all farms (Flygare, 2011). There was a wider movement for small-scale farms as a reaction to modern industrialisation and urbanisation of the 19th century (Flygare, 2011). This changed as an effect of an agricultural policy after the Second World War to less smallholdings, less arable land and more forestry (Antonsson & Jansson, 2011). In the year 2000 Sweden had 75% fewer small farms (less than 2 ha) than 100 years before (Flygare, 2011). Smallholdings nowadays often lease land (Flygare, 2011).

4.2 Respondents' perspectives on a sustainable and desired food system

This section describes the results that relate to subquestion 1: What does a sustainable and desired food system look like in the opinions of multiple actors of the current food system in Sweden? To obtain a clear picture of the system that the respondents are trying to change, firstly the participants' perspectives on the conventional system are described. This is followed by an elaborate description of the desired system in terms of production, processing, distribution and consumption.

4.2.1 Perceptions of the mainstream food system

Respondents' description
Although there were some slight differences in perception, most respondents described the conventional food system along the same lines: industrial, large-scale,
a (mostly) monoculture way of food production. This was often referred to as conventional farming. It was often described that farming in this system usually includes big machineries; a farmer sitting all day on a tractor and doing the same thing all day; a farmer owning/farming large areas of land alone; the use of chemicals (pesticides/herbicides/fertilizers); a farmer having huge debts/loans because of expensive investments; farms having large amounts of animals and unethical animal care. The global character of the current system was often emphasized, in that Sweden imports and exports many food products. The characteristic large magnitude of the system also frequently came up in the way that that the system's actors were described: large institutions and companies, such as the state, universities, seed/chemical companies, wholesalers, retailers, amongst others.

**Respondents’ opinion**

All respondents were very critical of the current food system. There seemed to be a lot of resentment towards it. Whereas this research refers to the current food system as mainstream agriculture, some respondents described it in different terms. Most respondents described it as an entity, sometimes it was referred to as an evil entity: 'a beast/monster'. Few respondents described it as the 'food chain' or 'food industry'. The main critique is that the current system is degenerative (although not always described with exactly this term) in multiple ways: (1) it degrades/destroys the soil/land and other parts of ecosystems (e.g. waterways and it enhances climate change) and (2) it is not good for humans; it degrades human health, the economy and social resilient communities. All respondents agreed that there is an urgent need for many far-reaching changes to the current food system.

**Respondents' perception of 'self'**

It seemed that most people perceived that they and/or their practices (1) were not a part of this system, (2) did not want to be a part of the system or (3) that they were a part of it, but were working against it. Most respondents said that they were doing something different from the current mainstream system, which confirmed that they do niche practices. There was also often an attitude that could be described as 'I will do this, regardless of what others do'. Their practices were - to a greater or lesser extent - described to be 'alternative' and definitely not mainstream. Often linked to an idealistic attitude, multiple respondents said that they want to do what they think is right, but that they do not want to tell others what to do. This was often described alongside a different way of thinking. Holistic thinking was often named as offering a different approach to the mainstream, mechanical way of thinking of agriculture.

Other terms that were used include alternative practices, regenerative, conservation, permaculture and organic agriculture. Multiple participants explained that they counter the paradigm of mainstream agriculture, which was described as mechanic, non-holistic, and based on a human-nature separation. The paradigm that was explained to underlie alternative practices was described as influenced by permaculture, regenerative, complex and holistic thinking. One respondent called this alternative approach the 'food web', which was described as being different from the 'food chain'. One respondent explicitly stated to perceive current organic agricultural practices as a part of the mainstream food system.
Contradictive attitudes towards conventional farmers

There seemed to be a difference in the attitudes towards actors of the mainstream food system. The common attitude towards actors in the food 'system', as described in abstract terms, was very clearly negative. But the attitude towards individual conventional farmers seemed subtler. Many respondents said that they go along well with their neighbours and/or friends who are often conventional farmers. One respondent said that her neighbours were very helpful and that people support each other. Another respondent said that it is important to not just blame conventional farmers:

"It's very easy to fall in to this pattern of 'conventional farming is the problem'. Whereas when you see the people behind this term of conventional farming, in relation to [...] one particular person, it becomes a very different story because they try to make it work for them, for their family."

Sub-conclusion of perceptions of the mainstream system

The respondents displayed a general rejection of mainstream agriculture and the related paradigm. Respondents focused on their own practices, and did not want to put energy into 'telling others what to do'. There was a common - though not universal - paradigm amongst the respondents that incorporates holistic, complex and regenerative thinking. While there was a common negative attitude towards the mainstream system, there was a more positive attitude towards mainstream farmers and individuals.

To summarise, respondents' perceptions displayed:

- A rejection of mainstream agriculture
- 'Going one's own way'
- Holistic, complex, regenerative thinking
- Negative towards the system, but positive towards individuals

4.2.2 A desired food system

Respondents were asked to describe their idea of an ideal food system. The following section will give the main ideas about production, distribution, processing and consumption in a desired system.

Production

All respondents felt strongly that more mixed and diverse land use is needed. An often-stated sentence is: "we should farm again like 100 years ago". This meant small farms, with diverse crops, agroforestry and a few animals and no (or limited) use of chemicals. The local character of the farms was desirable: a local, coherent network of farms, shops and inhabitants of the area. This was often referred to as a strong social resilient community. The incorporation in the local economy around a farm was often pointed out in this regard. The incorporation of farms in social resilient systems seemed to be important point to many participants. The descriptions of a desired system often included regeneration of the soil (and other
parts of the ecosystem) by using grazing animals, nitrogen-fixing plants, keyline design, holistic management, no-tillage and no destructive practices such as the use of chemicals, monoculture and soil compaction by heavy machinery. These farms can be all kind of forms of agro-silvo-pastoral structures. Some respondents thought that no (chemical) pesticides and herbicides should be used, and others said that organic pesticides/herbicides could be (sparsely) used. There were different opinions on organic agriculture: some respondents practiced organic farming and thought that this is the way forward for a sustainable food system, and others rejected organic farming because it merely replaced chemical inputs by organic inputs. The latter group regarded organic farming as unsustainable and mainstream. Also, some participants displayed no clear opinion about organic farming. More than half of the participants talked very positive, enthusiastic and passionate about the promises and proven practices of regenerative agriculture. They clearly stated that this practice should be pursuit more. The size of farms was often not specifically described, but generally large-scale farms were not desirable because it forces optimisation of production by monoculture, which is exactly the structure that the niches practitioners are trying to change.

An often-unspecified part of the desired food system was how a desired local character relates to global trade and exotic products. Some respondents said that the desired locality of agriculture does not contradict global food systems and that they could (and probably would) co-exist. But they proclaimed that the food system should become a lot more local than it is currently. According to one respondent, some exotic products that could not be grown in Sweden (such as bananas) could be imported, but people should consume less of these products. Another respondent worked on producing multiple foreign products in Sweden that do not traditionally grow in this climate. An example is quinoa, which traditionally comes from South-America and is currently imported to Sweden, but could be grown here.

To summarise, desired food production is:
- Regenerative
- More diverse
- Small-scale/medium-scale
- Chemicals-free (or limited)

**Processing**

The aspect of processing was discussed to a lesser extent by the respondents than the topics of production, distribution and consumption. But when respondents brought it up, they often argued that processing of food should be done more in Sweden, more local and closer to the farms and by mid-sized processing facilities. Multiple respondents claimed that there is an urgent need for the development of these kinds of processing facilities. The main arguments for this were that it is irrational to produce products in Sweden, then export these to other countries for processing, and then import them again for consumption. One respondent claimed that this happens with many organic products because there are no (or not enough) suited processing facilities in Sweden. Other advantages are that more local
processing could create jobs in Sweden and that it causes less pollution and costs of transport.

To summarise, desired food processing facilities are:
- Local (within Sweden)
- Mid- and small-sized

**Distribution**

Many respondents thought that the distribution of food from farm to consumer should change. A panel discussion of innovators in the Swedish food industry also brought up this issue. The panel agreed that food distribution is changing rapidly at the moment. To underline this, some observed trends were presented: people buy increasingly more food online (however, it was stated that online shopping still only makes up 2-3% of the total food consumption) and the distribution becomes more automated (drones/automatic cars). Two other named trends in the panel discussion, which are related, are that consumers increasingly want instant gratification (e.g. food at 2:00 AM) and that people are becoming more interested in how and where their food is being produced.

An apparent finding from both the discussion panel and the interviews, is that the most important change in distribution lies in the structure of actors: the traditional chain of producer-wholesaler-retailer-consumer is changing to producer-(new distributor-)consumer. The new distributors can take on many different forms. It could be the old retailers (supermarkets) who distribute in new ways such as online shopping. It could also be consumers who are also distributors themselves in multiple constructions. For example, four respondents explained four different distribution structures. Three of these respondents started up new structures themselves and one respondent is a supplier in another delivering structure. With all four initiatives consumers order food directly at a farm that is located relatively close to them. Because multiple consumers order at the same time (relatively), the food can efficiently be delivered to one point (or one person) in a central place where the food can be picked up by the other consumers. One option to organise it was non-bindery constructions where consumers can just order food once at a certain farm, or it could be in the form of agreements between consumer and producer (for instance a 1-year contract). The latter ensures security for the farmer who knows that there will be demand for particular products in a coming year. This is part of community-supported agriculture (CSA). Multiple respondents were very positive about the possibilities of CSA’s. Another suggestion of respondents was to support/strengthen farmers’ markets in cities to make food more directly available to consumers and to cut out middlemen. However, some suggested preconditions are to strictly allow farmers’ attendance at markets (sometimes wholesalers sell at current farmers markets), promotion amongst consumers to make it beneficial for farmers to join (sales are low/decreasing at the moment) and covered housing because of the cold climate in Sweden.

All these new constructions enable closer contact between the consumer and producer. They also require more initiative and commitment from consumers than
traditional food shopping in supermarkets. One respondent who set up a new distribution system said that there is a lot of demand from the consumer side for these structures as there was a lot of interest in his new initiative: his platform gets rapidly more used and has recently won multiple awards. Many respondents said that they see an increase in the number and users of new structures of distribution. So it was reported that both the demand and the supply of these structures are increasing. Respondents named a variety of new initiatives in multiple countries in North-West Europe. Two of the respondents who are organic vegetable farmers in Sweden said that they see these kinds of new enabling distribution structures emerging so rapidly that they did not know which structures to work with because there are so many. One respondent claimed that the number of CSA’s in Sweden has grown from about 7 CSA’s 8 years ago to 30-50 CSA’s currently.

Most respondents said that these kinds of new distribution structures could be larger in a desired system: more distribution forms, more clients and more producers. The most heard arguments include that it creates close producer-consumer relations. An important goal of many of the interviewed niche practices is to enhance social resilience, together with ecological resilience. Increased entanglement of farms and local communities is crucial for this, according to many respondents. For producers it furthermore is beneficial because (1) it gives producers higher prices for their products (because the wholesalers and retailers are cut out), (2) it helps financial security of producers by ensuring an income through yearly/monthly agreements with consumers, or through a community investing in the farm and becoming a shareholder. The latter is stated to strengthen local social resilience. For consumers it has benefits that (1) it provides transparency about their food, (2) it offers possibility for good quality, healthy and unprocessed food and (3) it strengthens consumers’ awareness and engagement about the source and production-method of their products. It was claimed that consumers want this, as the observed trend is that people want to know the origin or their food more.

The transparency from producer to consumer was often named as an important factor that is lacking in the current food system and that should be pursuit in a desired system. Two respondents said that they place the exact origin of their product on the food package: a picture of the cow on a meat package or the coordinates of the field where a product is grown. Closer producer-consumer relations through more direct distribution could also facilitate transparency and trust of consumers in producers and the food that they buy. One respondent explicitly stated the desire to be a trustworthy farmer:

“I want to be a farmer that you can trust”.

To summarise, new food distribution structures:

• Are emerging and desired in multiple forms
• Facilitate closer producer-consumer relations
• Combine social and ecological resilience (by including local communities in farm practices and embedding a farm in the local economy)
• Are local (relatively close to the farm)
• Are more transparent
• Enable consumers to order in pools together

Consumption

Many respondents said that the demand of consumers for local, seasonal and ecologically friendly products is rapidly increasing at the moment, but that the demand still should be increased much more. One respondent said that the demand of organic products in Sweden is at the moment larger than the supply. The statement that Sweden currently imports organic products underlined this. Furthermore, many respondents had strong beliefs about needed changes in diet. All respondents claimed that more plant-based diets are needed although completely plant-based or vegan is not desired. In line with the descriptions of desired farms like 100 years ago, a few animals per farm that can be kept in ethical circumstances facilitate limited meat and dairy consumption. One respondent emphasised that new plant-based alternatives are urgently needed. This includes alternatives for meat and dairy products, but also for animal ingredients that are processed in other products. According to this respondent, the latter makes up a large part of the food system. He underlined this claim with the example that usually only 35% of a cow is sold as meat, and the other 65% of the cow (e.g. head, legs, feet, tail, intestines) is used as additives, preservatives and other functional ingredients to all kinds of products (e.g. bread, shampoo, toothpaste). According to this respondent, new plant-based receipts and innovative ingredients should be developed a lot more and should be more easily available. Furthermore, many respondents thought that people should eat more food that is produced in Sweden. As one respondent put it:

"I find it strange why we do not eat the products that we can produce in our own country. Why do we have to import the same products?"

Another often described characteristic of a desired consumption pattern is 'good food', which can be interpreted as food that is nutritious, tastes good and is chemical-free (and produced in 'good ways', see the section 'production'). Many respondents emphasized the point that consumers should pay more value to good food than they currently do. A shift in values and norms is needed for this, as respondents said. Multiple respondents described their vision that good quality food should become a status, as other products have at the moment:

"[Consumers] have to understand that food is worthwhile having good quality. Food [currently] doesn't have as much value as a telephone or a car."

An important aspect of consumption that has to be changed according to most respondents is the price of food. Multiple respondents felt very strongly that the prices of food should be much higher than they are now. One respondent argued that prices should be at least twice or three times as high. The most named reasons are that the current prices (1) do not reflect the real costs, because they exclude environmental externalities and (2) constrain farmers to change to environmental friendly practices, because low prices promote efficient, large-scale monoculture, and thus it creates very difficult economic circumstances for 'alternative' farmers.
To summarise, desired consumption pattern:
- Is a lot more plant-based (although not completely)
- Is more local (within Sweden), but can be supplemented with some foreign products
- Assigns more value to good quality food
- Includes higher food prices

Sub-conclusion of a desired food system
The above described the main aspects of what a desired food system would look like in the opinions of the respondents. There were some observations of current trends - such as new distribution structures and consumption changes - but these were described as new, small-scale and it was desired that they should grow. Regarding the production, processing, distribution and consumption, the main points are summarised in table 2.

<table>
<thead>
<tr>
<th>Production</th>
<th>Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Regenerative</td>
<td>• Local (within Sweden)</td>
</tr>
<tr>
<td>• More diverse</td>
<td>• Mid- and small-sized</td>
</tr>
<tr>
<td>• Small-scale/medium-scale</td>
<td></td>
</tr>
<tr>
<td>• Chemicals-free (or limited)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Distribution</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Are emerging and desired in multiple forms</td>
<td>• Mostly plant-based (although not completely)</td>
</tr>
<tr>
<td>• Facilitate closer producer-consumer relations</td>
<td>• Local (within Sweden), but can be supplemented with some foreign products</td>
</tr>
<tr>
<td>• Combine social and ecological resilience (by including local communities in farm practices and embedding a farm in the local economy)</td>
<td>• Assigns more value to good quality food</td>
</tr>
<tr>
<td>• Local (relatively close to the farm)</td>
<td>• Includes higher food prices</td>
</tr>
<tr>
<td>• Transparent</td>
<td></td>
</tr>
<tr>
<td>• Enable consumers to order in pools together</td>
<td></td>
</tr>
</tbody>
</table>

Table 3. The main aspects of a desired food system
4.3 The transition towards a desired system

While the previous section look at subquestion 1: 'What does a sustainable and desired food system look like?' the following section will describe the results that relate to subquestion 2: 'What are leverage points for change towards a sustainable and desired food system?' Leverage points are aspects that need to be created or changed according to the niche actors to realise the described sustainable and desired food system. The answers to this question include descriptions of current constrains that hold the system locked-in. And it includes proposed ideas to overcome these constrains, which could enable or accelerate a transition to a sustainable and desirable food system. Before we look into the proposed ideas, it is interesting to look at which aspects made the respondents change to their niche practices, because this could shed light on the process of changing a person's behaviour and attitudes. After that, the leverage points for change are outlined.

4.3.1 Why did niche actors change?

When researching the aspects that enable the food system to change to a more desired and sustainable system, it is interesting to research the aspects that have already triggered the niche actors to change to their practices. As these niche practitioners can be seen as innovators and frontrunners that may (or may not) trickle down to the mainstream (see figure 1), it is worth to pinpoint the aspects that made these actors change. These aspects may be pursued further or enlarged amongst other actors (for instance conventional farmers, amongst others) to accelerate systemic change by enabling personal change. Therefore, the research respondents were asked what factors made them work in their niche practice. It is often difficult - if not impossible - to uncover clearly outlined reasons why a person does what she/he does at a certain moment. But it seemed possible to outline some trends in the experiences, development and statements of important life-events in the descriptions of the respondents. These will be given now.

On a personal level, many interviewees describe the process that made them work in their current niche practice, as a slow increasing interest in their niche activity due to increased knowledge about the topic and defining practical experiences. This process seemed to exist of - and can be described through - three phases: firstly getting to know a new idea and getting exited about it (1. introduction & excitement), secondly checking if it is really something they want to do (2. confirmation), thirdly taking the practical step of doing it (3. implementation). This division may seem quite artificial and the process is probably much more fluid in real life, but the process that multiple respondents described displayed this personal transition. More than half of the respondents described their process in this way. Important to mention here is that this described process mainly applies to the respondents who work as farmers. Respondents working in other niche practices displayed other reasons that led them to their current work, which will be briefly mentioned later.
Table 4. The process of change to alternative farming practices

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction/excitement</td>
<td>Confirmation</td>
<td>Implementation</td>
</tr>
<tr>
<td>New knowledge</td>
<td>Reality-check</td>
<td>Starting-up a farm</td>
</tr>
</tbody>
</table>

1. Introduction & excitement
The introduction to ideas of their alternative practices (such as regenerative agriculture or holistic thinking) came from multiple sources; including university education, family or acquaintances that worked in this practice. One respondent gave the example of another farmer in Germany who changed his practices from conventional farming to more regenerative farming. In this case, the change of mindset was sparked by a lecture about compost and soil life that this farmer attended. A moment of insight about his own practices followed, due to this new information, and this made him change his practices to more regenerative farming.

This initially sparked interest amongst many respondents grew with the accumulation of more information about the topic. Two farmers named that they mostly used online sources (such as a growing Youtube and Facebook community of regenerative practitioners) to actively retrieve their information. Some respondents named other mainstream media, such as newspapers, radio or television. Two respondents named that their university education increased their knowledge about the topic. A growing, international and mostly online community of organic and regenerative farmers was often named as a source of inspiration and information. Here, knowledge about new practices, ideas and experiments are being shared and commented upon by peer-practitioners. It was interesting to hear that the main sources were not the respondents' neighbours as might have been the case, but mostly social media and newspapers. This seemed to be linked to the fact that most respondents were surrounded by conventional farms. So mostly online media seem to play an important role in sharing knowledge about alternative practices. And the role of media seems important in initially changing the mind-set of farmers to change their own practices.

2. Confirmation
Almost all respondents who displayed this process described that there was a period in their life in which they worked on a farm of someone else. This experience was often described as being determining for actually deciding if this kind of work was something that this person wanted to pursue or not. It is a reality check, as one
respondent described it. Multiple respondents stated that this period of working on a farm should be at least a year or longer, because shorter periods (such as WWOOFing\(^2\)) do not give a realistic picture of what it entails to actually work in this business. It was often described that a period of hard work and 'not having it easy' is important for the mental development of a person who is interested in the topic but does not have a realistic idea of the work yet.

3. Implementation
The next step described by many respondents is starting up one’s own farm (or subsystem within another farm). This step comes after the experience of confirmation and the decision that this person wants to pursue working in this practice. Multiple respondents named that there is a threshold to start implementation, because there are many financial and practical constrains in starting up an enterprise. One respondent pointed out to the contradiction between ideals and practice in this regard. He noted that people who have the ambition to start-up their own regenerative farm (and who have presumably passed phase 1 and 2, excitement and confirmation respectively) are being constrained by their ideals, which block the actual implementation. An example of this is the ambition to use no plastic on a farm. This ideal may not be realistic and strictly pursuing this ideal may prevent a person to succeed with their starting enterprise. This respondent said that in starting enterprises compromises need to be made between idealistic goals and practical possibilities. In this regard he referred to holistic thinking, which helps a person to make decisions that lead her/him to a desired context (which means the organisation of circumstances and of life). The respondent said that, if for instance using plastic enables the realisation of starting a regenerative farm (the desired context), the perfectionism in ideals should be let go of. A better balance between ideals and pragmatism is more useful, according to this respondent, because (idealistic) perfectionism otherwise prevents the realisation of the ideals. Other respondents mentioned other difficulties with starting up one’s own enterprise in the agricultural niche. This includes buying land of current landowners and having enough starting capital to invest in land and machinery. In this regard, multiple respondents said that the threshold to start a (regenerative) farm should be lowered. One respondent mentioned that it helps to see start-ups of regenerative farms in a person’s environment, because it lowers the barrier to start a farm.

"If many people around you do it, it gets easier to also do it yourself."

According to the respondent, this process can be enhanced by seeing practical examples of other farms (physical or online), or having possibilities for trying out small plots/enterprises on existing farms.

Overlapping in this whole process of introduction/excitement, confirmation and implementation, is that many respondents stated to be idealistically driven. Ideals for a better food system and a better world drive them to do what they currently do. As one respondent, who was a farmer, put it:

\(^2\) WWOOF stands for World Wide Opportunities on Organic Farms. See: wwoof.net
"[...] all the ones that have started this, they are idealists. All of them. They don't do it because of the status. They do it because they understand it is important."

This description included the respondent herself. Furthermore, it was often described that a respondent went through a period of personal transformation. Experiences that seemed to be linked to this is broadening of one's horizon by getting to know new perspectives, people and cultures, asking a lot of questions about existing practices and consciously deciding where one wants to place oneself in relation to others (the world). The term 'taking responsibility' was often named in this respect. Also multiple respondents said that a reason to farm is because they regard farmers as the 'caretakers of the soil/earth'. They want to take responsibility for taking care of the soil/earth.

Apart from the above described process, some respondents stated to have started working in their niche for other reasons. Another respondent, who is an organic farmer stated to have changed from conventional to organic mostly for economic reasons. He had worked conventionally for many years when he learned through media about the increasing demand for organic products. He realised that this could bring more income than conventional farming and changed his farming practices, machinery and products. He now farms organically and practices conservation agriculture with the principles of maximal biodiversity, no soil tillage and minimal soil disturbances. He described that a higher income was the main reason to have changed, but also that he got tired of farming conventionally:

"Mainly economic reasons. But I also got tired of conventional farming. It is too much bulk on the global scale. Organic is local demand."

This respondent had worked before on another farm, which had also changed parts of its land to organic production for economic reasons a few years ago. The respondent stated to have learned how to grow organic on this farm. Even though this process is different from the three phases described above, there seem to be a few parallels: gaining new information (though a different kind of information: about money rather than sustainability) and experience of working on an 'alternative' farm: his decision to stop farming conventionally seemed to be influenced by his previous experience of working on a farm that partly farmed organically. So these aspects seem similar to phase 1 (information) and phase 2 (confirmation by working on a farm). When this respondent was asked about difficulties in changing from conventional to organic, he answered that it had been an easy process. He said to have experienced no large obstructions and that he simply had to sell his old machinery and to replace it with new, other machinery in order to farm organically. Some other respondents - no farmers - came to their practice in other ways, which seem more serendipitous and linked to previous jobs that happen to lead them to their current practice.
Sub-conclusion of the niche actors’ change-process

This section has given a distillation of the respondents’ concise stories about their own life-journey that made them work in their niche practice. However it should be emphasised that this is only based on relatively short interviews (about 1 hour) and is thus not comprehensive by any means, one could see some red lines in the process of change. This was often slow process that seemed to exist of three phases: introduction and excitement, confirmation and implementation. Knowledge-transfer about alternative agricultural practices seemed to be important to spark initial interest and excitement. The possibility of working on a farm was important to confirm if it is something this person wants to seriously pursue. Seeing examples of alternative farms, obtaining land and having a good balance between ideals and practicalities seemed important to enable a successful start-up of one’s own enterprise. This process often came with an idealistic attitude and personal transformation of horizon-broadening and taking responsibility of taking care of the soil/earth.

4.3.2 What are leverage points for change?

The respondents were asked what aspects of the current food system are limiting a transition towards a desired and sustainable food system and what changes are required to overcome these constrains. When the factors that hold the system locked-in (in its current or old form) are outlined, these issues could be addressed to change them. These can be seen as leverage points, which - when changed - could make niche practices (more) mainstream and thereby have a large impact in accelerating the food transition. Lastly, respondents were asked which other aspects, which are not parts of the current food system, could be initiated or created to facilitate the transition to a desired and sustainable food system.

A movement

'It is already happening at this moment' is what almost all respondents declared when they were asked about the transition of the current food system. Many respondents said that the food system is currently changing which is an inevitable and unstoppable development. It was claimed to be inevitable because the current system cannot sustain itself in the long-term (and also short-term) because of degrading soils and other parts of ecosystems. And it was claimed to be unstoppable because even gatekeepers of the current system or people who try to maintain the status quo currently cannot stop the growing stream of alternative practices. This was the general idea that many respondents expressed. In this regard one respondent compared the food transition to the transition in the car industry:

"If we compare it to the car industry and the combustion engine, [...] everybody has come to a point that we realise that we actually have to change this. And it's happening. And there is no way the traditional car industry can stop this trend. [...] the vast majority will change. It will be a paradigm shift to electric cars. It's done. It's just, we are in a transition. Same thing will happen with food. People more and more realise that we cannot have 200.000 cows on a farm."
Multiple respondents said that there is increasingly more demand for organic, KRAV (a Swedish certification\(^3\)) and regenerative products. It was claimed that more people are becoming aware of the impacts of the food system and that there is a trend of interest in healthy, ethically and sustainably produced food. The increasing number of sustainably producing farms (in Sweden and internationally) was also given as an example of the ongoing change. However, it was also emphasised that this group is still very small: a niche. Many participants said that both in Sweden and internationally, the group of people who are interested in, and practicing alternative food practices is small but growing. Furthermore, respondents said that they saw changing attitudes amongst the people around them about their own practices. A regenerative farmer said that he sees farmers around him slowly becoming interested in his way of farming and asking questions about it. He said:

"15 years ago they weren’t interested, now they are. We need more time."

It was needed, according to this respondent, to show conventional farmers that organic or regenerative farming is better in many ways: it gives more income, the soil and products become better and the way of farming is nicer for the farmer (not sitting on a tractor doing the same thing all day). He claimed that it is needed to show this to other farmers, because simply speaking about it will not convince them. But showing differences in crop growth and soil health takes a lot of time (multiple growing seasons). Another farmer stated:

"Yes, I have many farmers as neighbours. They all farm conventional. [...] They say that what I am doing is interesting. They say that they want to see how much success I will have. [...] maybe in 5 years time, they will also try it."

So multiple respondents described to notice a slow but persistent change.

Almost all respondents described that there is a small, but rapidly growing movement of likeminded people who are interested or working in alternative food practices, put a lot of value to good and healthy food, engage in producer-consumer relations and contribute to this growing community by offering their knowledge, experience and ideas. It was referred to mainly in Sweden, but also many international relations were mentioned. One respondent called the young network of regenerative producers in Sweden 'just starting', 'diverse' and 'fluid how it will evolve in the future'. A few names were more often mentioned as internationally known persons that are leading in sharing knowledge about regenerative farming. Examples include Mark Shepard and Joel Salatin (both USA) and Richard Perkins (Sweden). In books, videos and in other ways they share their experiences with particular farming techniques, the experiences of setting up a regenerative farm, and their ideas about farming. Multiple respondents named that they were inspired by, and worked together with farms and practices in countries from all over the world.

\(^{3}\) http://www.krav.se/
Another way that the growing network of regenerative and likeminded farmers was described is more about a personal/social aspect. As one respondent put it: "We like each other". Many of the research respondents knew each other and have worked together. This suggests an intertwined community, however caution should be given to this interpretation because the respondents were found through the snowballing method. Many of the niches that could be regarded as part of this growing movement, seem to share ideologies, goals and practices. These often seem to include: a rejection of the mainstream food system, proclaimers of bottom-up approaches and an individualistic attitude in the sense that they 'go their own way' (see also section 4.2.1). The latter was seen amongst multiple respondents who said to stay out of debates with mainstream farmers, mainstream thinkers or other niches. These debates were regarded as useless and as a waste of time. Their time could better be spend on "just doing it" which would prove that their alternative practice works. However, it was also often mentioned that if someone was sincerely interested in their work, they were open for a conversation and willing to explain it. Multiple respondents said that all these niches (such as veganism, urban food practices, regenerative farming, organic farming) should work more together, because they ultimately aim for the same goals, which is a sustainable and ethical food system. It was claimed that these different niches currently waste much energy on criticising each other’s ideas, but that more cooperation between different niches could help to make the movement grow.

However the above may seem to imply that the food transition is well underway and much is already happening, these are still niche practices. Respondents agreed that it remains a huge task to change many leverage points that facilitate and speed up the transition process. Some respondents said that they might be biased in their view on the amount of activity of a growing movement, because they are surrounded by people who are part of this movement, but all respondents agreed that the niche is still very small and that it needs to grow. As one of the respondents put it:

"We need more people"

So the respondents showed a wish that this movement would grow, which requires that more people change their practices and paradigms. The mainstreaming of ideas and practices of this niche movement requires multiple aspects that were discussed in the interviews. These are given below.

To summarise, a movement:
• Is small/ a niche/ just-started
• Seems to grow unavoidably
• Is internationally and Swedish connected
• Is both professionally and personally connected

Knowledge-flows
An aspect that seemed to be important in leverage point to spread ideas and practices of this niche movement to the mainstream is the spread of knowledge. As
described in section 4.3.1 many of the respondents' interest in this niche started by gaining new knowledge. Furthermore most respondents stated that the spreading of knowledge about sustainable food practices is one of the most needed aspects to make the transition to a sustainable food system possible. A few streams of knowledge-exchange can be distinguished in this regard: from niche to (1) conventional farmers, (2) new farmers and (3) consumers.

1. From niche to conventional farmers
The respondents were asked about their relation with conventional farmers, which often included the respondents' neighbouring farmers. As mentioned in section..., multiple respondents stated that they have good relations with the farmers who live around them. They see that their neighbours slowly become more interested in their way of farming, which is often regarded as different and 'weird'. The surrounding conventional farmers' attitude was often described as being sceptical, such as saying:

"This is not my way of farming, but you just do your thing"

However, it was seldom described that this attitude of their neighbours was strongly negative about the respondent's way of alternative farming. The relation with conventional farmers who are not close neighbours was often described to be less amicable and more confrontational. One respondent stated that conventional farmers often think that his way of farming is "not good farming". He found joy in proving them wrong by showing good harvests and soil conditions throughout many seasonal cycles. He stated:

"[...] many people think that it is wrong what I am doing, that this isn't how you should grow food. The most common argument that they make is that organic farming is not able to feed the world. But that is bullshit, because we are destroying our soils."

These relations, which are often more confrontational, relate to the (earlier mentioned) point that many of the respondents stay away from debates between alternative and conventional farmers. One respondent said that these conversations (or debates) often end up in both sides saying:

"I am right and you are wrong" and: "why organic farming is not working or why conventional farming is not working".

This respondent said that his friends, who are farming conventionally, sometimes mock him for his way of farming. He replies with the argument that their (conventional) way of farming is so easy that it could even be done by a city person, who has no agricultural experience or knowledge. This was more often mentioned; that the respondent's niche way of alternative farming requires a lot more knowledge about farming than conventional farming (e.g. soil processes, plant characteristics etc.). Conventional farming was often labelled as 'easy farming', where farmers can sit on a tractor all day and do the same thing because it is
monoculture. One respondent stated to feel more like a real farmer since he changed his practices from conventional to more sustainable/regenerative.

Apart from the personal knowledge exchange and debates between niche farmers and conventional farmers, some respondents talked about the flow of information from agricultural media to conventional farmers. These include flyers, magazines, and farmers conferences. One respondent claimed that these knowledge-flows are strongly influenced by big multinationals that have an interest in maintaining the agricultural status quo, such as large seed or chemicals companies. The respondent argued that this situation functions as a systemic lock-in because it does not bring any alternative farming knowledge to conventional farmers. So this raises the idea to incorporate information about alternative practices in the regular agricultural media flow to conventional farmers. Another respondent said that conventional farmers often don't feel welcome to the alternative farming movement. He claimed that they are put off by the advertisement of the alternative symposiums or conferences, because the language that is used is directed towards alternative farmers. As this respondent stated:

"[...] finding words and invitations that can be inviting for both organic, conventional and others"

This seems to be a leverage point to make open dialogues and knowledge exchange more accessible between conventional and alternative farmers.

A last point about the information-flow to conventional farmers regards the role of agricultural advisors, which was claimed to be an important source of information to farmers. Two respondents said that agricultural advisors currently do not provide enough knowledge and advice about alternative practices. They claimed that advisors could and should have a more leading role in introducing farmers to new (alternative) practices.

To summarise, leverage points regarding knowledge to conventional farmers:

- Show, rather than tell conventional farmers the possibilities of alternative farming
- Provide information about alternative farming in the regular agricultural media
- Make alternative farming conferences more accessible to conventional farmers
- Agricultural advisors could provide more information about alternative agricultural practices

2. From niche to new farmers (agricultural students and city enthusiasts)
Two points were discussed in this regard. Firstly, many of the respondents said that the agricultural schools in Sweden do not incorporate education about alternative ways of farming in the regular curriculum to a large degree. The respondents said that this should be changed, so that agricultural students get educated about alternative practices such as regenerative farming. Secondly, many of the
respondents noticed that there is a generation of young people, who grew up in cities, often have academic education, and are interested in sustainable farming. This group was described to commonly have no farming background (did not grow up in a farming family), but they are enthusiastic about alternative farming. The respondents said that this group is growing. Multiple of the respondent stated that this group does not have a realistic idea of what farming entails. Some respondents said that therefore it is a good idea for these people to work a year (or two) on a farm to experience farming life and to adjust their sometimes-romantic picture of sustainable farming. This group of young people was often placed against another group of young people who grew up in farming families in rural areas. Respondents stated that this group, contrarily, knows what farming entails but are often moving to cities and do not want to become a farmer. One respondent described this paradoxical movement of young people as follows:

"They see that their parents have worked hard and not had a lot of economy. They think: 'I'm not so crazy of doing this!' And then the crazy city people come out and want to do something, haha."

This paradoxical interest and movement of young people appears to be an interesting point. It could possibly be used as a leverage point to change the agricultural system, if some circumstances could be organised that utilise the potential. The aspect of age in the food system transition will be elaborated upon further in the section 'generational change'. Lastly, multiple of the farms of the respondents have the explicit goal to spread education about regenerative farming. This is done through in many ways: online (e.g. videos, blogs) and offline (trainings, educational programs, talks, lectures, books etc.). It is often directed towards young entrepreneurs who are setting up their own sustainable farming enterprise.

To summarise, leverage points regarding knowledge to new farmers:

- Incorporation of alternative farming practices in formal agrarian education
- Offering possibilities for young enthusiasts to work on an alternative farm
- Education for entrepreneurs starting up an alternative farm

3. From niche to consumers
Almost all of the respondents said that it is necessary to create stronger relations between farmers and consumers. As was explained in section 4.1.2 new forms of distribution can help with more direct and personal producer-consumer contact. It was claimed by respondents that there is an increasing interest amongst consumers in the origin of food. However, one respondent said that she puts a lot of energy into reaching out to her customers by adding letters to the food-boxes that they deliver. The letters include writings about the happenings on the farm and an invitation for customers to come to the farm to see how their food is being produced. However, the respondents stated to receive extremely little response to the invitations: only a handful of customers actually come to the farm. These respondents, together with many other respondents argued that consumers should take more responsibility in reaching out to farms, finding out where their food comes from and take a more active attitude towards the topic of sustainable and ethical food. Again, as
mentioned above, it was suggested that the new distribution structures could help with this. One respondent claimed that consumers in Sweden less quickly take this responsibility than in some other countries (e.g. U.S.A.) because of the Swedish 'caring state'. However, many respondents showed a belief in bottom-up initiatives, where citizens take their responsibility together and get organised as a movement. Another respondent said that it is needed to spread more knowledge about sustainable and ethical food (or 'good food' as he called it) through other ways, such as popular media. He proposed that e.g. a reality show about young regenerative farmers could make people, who are usually not involved in this, enthusiastic or interested in the topic. Another point that this respondent argued for is to change dining habits, which are slow and difficult to change. He claimed that even when there is awareness and knowledge about 'good food', it is often very difficult for people to change their habits (for a deeper interpretation of 'good food', see section 4.2.2, Consumption). In his opinion, to help people change their habits it is needed to offer many 'good food' alternatives in the supermarkets and by showing consumers that 'good food' is better in many ways (better taste, not more expensive, not more demanding, better for human and ecosystem health, more ethical). Another respondent claimed that it is difficult to align the timing of offering his regenerative products and sparking the interest of customers, for whom these kinds of products (and distribution systems) are new. He explained that when there is no interest, it is possible to create an interest (a market) by introducing alternative products to consumers who are not familiar with it. But when the products cannot be offered at the same time as the interest is sparked, (because it is still a niche, the amount of alternative producers, and thus the amount of available products, is still relatively low) the consumers lose their interest. So this respondent said that it is important to create interest and offer products at the same time, but this is sometimes difficult to align.

To summarise, leverage points regarding knowledge to consumers:

- A stronger engagement of consumers towards alternative farms/food/farmers is desired
- Even though consumers might have knowledge about 'good food', to actually change habits, it is needed to offer more alternative products
- It is important, but difficult, to align the creation of a consumers market and the timely supply of alternative products

Generational change
The topic of 'age' was briefly touched upon and deserves a bit more explanation. Differences between young and older farmers often came up during the interviews. There was a division in opinion amongst the respondents. Some thought that the required changes for a food system transition mostly must come from the next generation of farmers. This group showed a more sceptical attitude about the possibility of older conventional farmers to change their practices. This group of respondents placed more hope in a younger generation of starting farmers to facilitate the transition. Another group of respondents thought that older farmers who have farmed conventional for many decades are also able to change and could be part of the food system transition. One respondent thought that a gradual change
might be possible by the incorporation of farming techniques that do not require immediate and complete transformation of a whole farm, such as direct seeding and no tillage agriculture:

“These [are] some options that can really make a difference. Even though they [are] not changing it to a whole diversified farm, but they change to a no till practice, which can really help the soil to regenerate."

One of the respondents claimed that she saw a difference between the reasons why younger and older people change to alternative farming. According to her, younger people change because of sustainability and ethical reasons; thus more idealistic reasons. And older farmers change their practices for more practical reasons. She explained that because of economic difficult situations, increasingly more conventional farmers start thinking about how they can farm with fewer inputs and this leads them to organic farming. Multiple other respondents also observed this trend. They said that it is important to show the current conventional farmers that organic farming has an economic benefit. Otherwise they will not change, was the common opinion. This was confirmed by an interview with another respondent who had farmed conventionally for many years and recently changed to organic farming because he learned that it brings more income than conventional farming. An interesting point is that this farmer was influenced by the wishes of his buyers (often wholesalers) who asked for certain products and related production methods ('good food'). He changed his farming practices after he learned that these kinds of products produce more income.

A possible leverage point to enable this change is the introduction of a ‘farming year’ for young people. This idea was brought up in multiple of the interviews. The idea is that if young people work on a farm, it functions as a learning school about alternative farming and they get more exited about it. It was also mentioned that it could help out alternative farmers who often need helping hands, because their way of farming is more labour-intensive than conventional farming. Government institutions could provide a support and organisation system to facilitate such a ‘farming year’. Most respondents agreed that it should be voluntarily, but one respondent raised the idea that it could be an obligatory component of army service for youngsters to protect national food security. One respondent said that it could become a new status for youngsters to experience a year, as a sort of 'gap year', which has became more popular amongst youngsters in recent years in North-Western European countries. The idea relates a lot to practices such as WWOOFing but it was claimed that WWOOFing is more regarded as a holiday than as a part of educational or professional development.

A last point regarding the (generational) speed of a food transition is the difference between changing food demand and supply. It was raised in a few interviews that the demand for organic and alternative products can change more rapidly than the supply. It was claimed that it takes a long time to change farming practices because farms have build-in structures such as buildings and animals that cannot be changed rapidly. Consumers’ demand can change from day to day. Therefore, it was claimed
that the change in production may take a longer time and might come from next generations.

To summarise, leverage points regarding generational change:

- There might be different reasons for young (sustainable/ethical) and older (practical) people to change
- An idea is to introduce a 'farming year' on alternative farms for young enthusiasts
- The incorporation of farming techniques such as direct seeding and no tillage could gradually transform existing conventional farms

Starting up a farm

It was mentioned above that there is a paradoxical movement of young people leaving rural areas to go to cities and young people coming from urban areas to the countryside to start farming. Multiple of the respondents claimed that change needs to come from entrepreneurs who dare to take the risks of starting up a new farm. Multiple respondents emphasised that they take many (financial) risks every day, which is part of starting up something new (being entrepreneur). Respondents named a few difficulties for people who want to start up a new alternative farm: high start-up costs, inexperience of young city enthusiasts, and difficulties in obtaining land (see Landownership below). A suggestion that was raised in multiple interviews was to create possibilities on existing alternative farms for enthusiasts to try out their ideas. One respondent called this 'super farms' and worked on offering possibilities on his own farm for people to start up a small enterprise. This makes sure that the initial extend and costs can be quite small, which lowers the boundary to start. This corresponds to the transition from phase 2 to phase 3, as described in section 4.2.1 (from confirmation to implementation). Lowering this boundary to start an alternative farm may be a leverage point for change of the food system.

Furthermore, another research that was conducted by the author of this research, confirms that worldwide, there is a considerably large group of people who are at this stage of starting up their own alternative farm. This research explored the potential for an international community of practice of land restorers amongst the respondents of a massive open online course, called: 'A Business Approach to Sustainable Landscape Restoration' enabled by the Erasmus University in the Netherlands. It was observed that there is a considerable group of people all over the world who are about to start up a farm or who are in the process of starting up. This group mainly wanted examples of other alternative (mainly regenerative) farms from around the world; to learn from the examples and to use this for their own farm/enterprise. The most wanted information were lessons learned about the starting-up process and practical aspects of certain farming techniques or small organisational structures on a farm. These findings correspond with the finding of this research that there is a small, but growing (international) network/community of people who are interested in and working with land restoration and regenerative farming.
To summarise, leverage points regarding alternative farming entrepreneurs:

- The boundary to start could be lowered by creating possibilities for start-ups on existing farms
- An internationally growing community of land restorers and alternative farmers are asking for more examples of starting alternative farms from all over the world

Missing facilities
Apart from the points above, a few things were mentioned in the interviews that were regarded as missing for the niche group of alternative farmers. This includes firstly: mid-sized facilities for processing and packaging (machines, producers, buildings) are almost not available (at least in Sweden) for producers who want to process their food relatively close to their farm and selling point. Secondly, a bigger network with all kinds of services for small/mid-sized alternative farms was named as missing at the moment. These services could be very specific and include tax-advice, programming, ecological monitoring, amongst many others. Multiple respondents stated to have several kinds of these collaborations between their farm and specialists, but that a bigger network in this could be very useful. The idea was raised that, in this regard, it could be useful to ask farmers what kind of services they need.

To summarise, other leverage points regarding missing facilities are:

- Mid-sized processing and packaging facilities (in Sweden)
- A bigger network of specialist services for (starting) alternative farms

Financial structures
Many respondents brought up the topic of the EU subsidy system and it seems to be an important aspect that holds the current system in place. The EU subsidy system distributes money per hectare, which means that large landowners receive more money than small landowners. Many respondents were very critical towards this system because it favours large farms, which often use intensive monoculture. Multiple respondents claimed to find it 'crazy' and 'unfair'. As one respondent explained:

"So the more you have already, the more you get. And the more you get, you can buy machines, and you can [fire] your employees and then you can do it all yourself. And then in the end you have 500 ha, can do it all yourself with your big machines, compress the soil, get rid of all biodiversity, get all monoculture, and then you get even more money for it!"

This respondent said that the EU subsidy often makes up more than 50% of a farmer’s income (although this is different per farm size). So it heavily affects farming enterprises and influences the decisions that farmers make about their production methods. This respondent further explained the effects of this system on ecosystem health and future generations:
"[...] big farmers have their 500 ha, let's say grain production. [...] because the grain prices are so low, [...] they have to use fertilizers, pesticides, herbicides, pollute the water, have monoculture, destroy biodiversity. Someone is going to have to pay for this one day."

It was often argued in the interviews that most farmers struggle to be economically healthy, both large farms and small farms. The EU subsidy system was described to negatively affect farmers in two ways: (1) Large farms are locked up in enormous debts to buy large land areas and expensive machinery, and they heavily depend on the EU subsidy for survival of the enterprise. (2) Small farms do not get as much EU money as large farms. This makes it difficult to employ the needed extra workers to get the more labour-intensive farming work done than on monoculture large farms. One respondent said that organic farms get more EU money per ha than conventional farms but that this is still relatively little because of the small surface area.

Many of the respondents stated that the EU subsidy system should be changed to support more small-scale farmers instead of large-scale farmers, as currently is the case. One of the respondents raised an idea to change the system from paying per hectare to paying per employee on a farm. This would support small-scale farmers because they often have to employ more people than large-scale farmers who can farm more in solitude with big machinery. Another constraining factor that relates to this point is that one respondent raised the issue that it is difficult for small-scale enterprises to access financial start-up capital (to lend money from the bank). So according to him, in order to support small-scale sustainable farms to start-up, financial structures should be put into place that enables them to access financial capital. Also, according to multiple of the respondents, certification policies are usually directed to larger farms and are difficult for small farms to obtain.

To summarise, leverage points regarding financial structures:
- EU subsidy system functions as a lock-in by favouring large-scale farms
- Paying per employee rather than per hectare (EU subsidy) is an idea to help small-scale farms
- Financial structures for small-scale farms are needed
- Certification policies for small-scale farms are lacking

Land ownership
A few respondents talked about the issue of land ownership and said that it is very difficult to buy land in Sweden. This was confirmed by other respondents when being asked about this. Two respondents said that they know from their own experience that it is especially difficult for newcomers to an area, who want to start up a farm, to buy land from land owners. They claimed that people who own land are generally not keen on selling their land, so they rather rent it out. But even renting land is difficult for newcomers, said these respondents. It was argued that this provides some difficulties for niche farmers because they often cannot farm on the best (most fertile) soil or obtain the most desired land from a social perspective (close to facilities). It requires a large investment to rent or buy land, which is a
threshold for people who want to start a farm. Relating this constraint to the above-described process of ‘excitement/confirmation/implementation’, it might constrain people who are in phase 3 of implementation and want to start an alternative farm. Thereby it could be seen as a systemic lock-in factor. However, the current situation of landownership can also accelerate the food transition towards more sustainable practices, as the example of another respondent shows: this respondent rents part of his land from the church. He practices regenerative and conservation agriculture on his land. The church board decided that they wanted to support this kind of farming more, so they asked the respondent to obtain more land to farm on it. In this case, the landowners decided to support more sustainable farming practices. But most respondents agreed that the current land ownership system supports the status quo and does not advocate a change of farming practices. In three interviews the idea was raised to change the land ownership to structures where land is owned by cooperatives. Two of the respondents work on a farm that uses such a structure. This system functions as an experimental ground for public funding and public ownership of regenerative farms. Furthermore, many respondents claimed that the people who own the land should be the ones who work on the land. It was also claimed that land ownership should be more long-term focused. One respondent gave the example of building a greenhouse for vegetables on his rented land, which is a risky investment in the current situation because of their short-term renting contracts.

To summarise, leverage points regarding land ownership:

- Difficulties to obtain land in Sweden constrains starting farming entrepreneurs
- Land owners could use their power to facilitate systemic change by renting their land to alternative producers
- (Public) Collective land ownership structures offer possibilities for change
- Longer-term renting contracts could provide more security for investments for alternative farms

4.4 Conclusion of findings

This chapter has presented the Swedish case study of niche practitioners who are trying to change the food system. It was researched in two research questions what their perceptions are on a food system transition. Firstly, ideas on a desired system were collected. Secondly, leverage points were collected to enable and accelerate the food system transition. Overall, the respondents’ ideas about a desired system (RQ1) seemed to align to a large extend. Underlying attitudes about the current food system seemed to be based on some common characteristics. The ideas about the transition towards such a system (RQ 2) seemed to be more diverse. However, this might have had to do with the broadness of topics that were discussed, because it seems that there were no major conflicting ideas about transition-characteristics. The topic of transition seemed to be discussed broader, whereby respondents focused on more different parts of this topic. The interviews revealed a process of personal change when niche actors talked about how they got to work in their alternative farming practice. This was abstracted into a three-phase process of
introduction/excitement, confirmation and implementation. The main findings to the two research questions are summarised below.

**A desired food system (RQ 1)**

This case study gave the perspectives of niche actors on the aims of a desired food system. Briefly summarised: small/medium sized farms which mainly engage in regenerative, diverse/multifunctional and chemical-free agriculture. Processing of food happens relatively close to the farms, in Sweden in mid- and small-sized facilities. Food distribution structures are emerging in different forms, but are all transparent, local (close to the farm), directly from producer to consumer, embedded in the local community and require consumers to order in pools. Food consumption is more plant-based, although limited animal-products are included, local in that it includes mostly Swedish produced products, assigns higher value to good quality of food and includes higher food prices than currently.

<table>
<thead>
<tr>
<th>RQ 1 A desired food system</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Production</strong></td>
</tr>
<tr>
<td>• Regenerative</td>
</tr>
<tr>
<td>• Diverse/multifunctional</td>
</tr>
<tr>
<td>• Small/medium-scale</td>
</tr>
<tr>
<td>• Chemical-free (or limited)</td>
</tr>
<tr>
<td><strong>Processing</strong></td>
</tr>
<tr>
<td>• Local (within Sweden)</td>
</tr>
<tr>
<td>• Mid- and small-sized</td>
</tr>
<tr>
<td><strong>Distribution</strong></td>
</tr>
<tr>
<td>• Emergent and desired in multiple forms</td>
</tr>
<tr>
<td>• Direct producer-consumer relations</td>
</tr>
<tr>
<td>• Merges local communities and farms</td>
</tr>
<tr>
<td>• Local (relatively close to the farm)</td>
</tr>
<tr>
<td>• Transparent</td>
</tr>
<tr>
<td>• Consumers order in pools together</td>
</tr>
<tr>
<td><strong>Consumption</strong></td>
</tr>
<tr>
<td>• More plant-based</td>
</tr>
<tr>
<td>• Local (with limited foreign products)</td>
</tr>
<tr>
<td>• Higher value to good quality food</td>
</tr>
<tr>
<td>• Higher food prices</td>
</tr>
</tbody>
</table>

**Perceptions of the current system**

- Rejection of the mainstream
- 'Going one's own way'
- Holistic, complex, regenerative thinking
- Negative towards the system, but positive towards individuals

Table 5. Summary of findings to research question 1: niche actors' perspectives on a desired food system.
**Leverage points for change (RQ 2)**

The empirical case of Swedish niche actors revealed multiple leverage points that could make the alternative farming niches become more mainstream (see figure 5). The interviews gave an overview of the process of how people came to work in their alternative farming niche. This is summarised in three phases: (1) introduction/excitement due to new information about alternative farming, (2) confirmation and a reality-check of what alternative farming entails, and (3) implementation of starting up an alternative farm.

A young and growing movement of alternative practitioners seems to expand and connect internationally. It was reported that mid-sized food processing and packaging facilities are needed close to the production area. Also a wider network of specialist services could help alternative farms to grow. It was found that there is a group in the alternative movement that have passed phase 1 (introduction/excitement) but have not yet gone from phase 2 (confirmation) to phase 3 (implementation). To actually start-up an alternative farm, two practicalities are requested: (1) examples of alternative farms (lessons learned) and (2) possibilities on existing farms to start-up a small enterprise to lower costs and land access.

It was often named that the EU subsidy system is a leverage point that locks the current system in, but if changed, could accelerate change. A suggestion is to pay farms per employee instead of per hectare. Also there is a lack of financial structures and certification policies that are directed towards small farms. Another point is that the reasons to change to alternative farming might be different per age group. Younger people might change for more idealistic reasons: for sustainability or ethical reasons. Older people, who have farmed conventionally for a long time, might be more likely to change for practical, economic reasons. To complement the idealistic ideas of young people with realism of farming, a farming period (not too short, for instance: a year) could provide this. On the other hand, this might help alternative farms that are in need of helping hands for the labour intensive farming. Existing conventional farms might change to alternative practices more gradually by introducing farming techniques such as direct seeding and no-tillage, or by practicing alternative farming on a part of the farm. A leverage point that currently inhibits change is the difficulty in Sweden to obtain land. This makes it difficult for new alternative farmer to start-up a farm. Because land is often leased in Sweden, landowners have the power to requesting their land to be farmed alternatively. A different form of land ownership is collective/public ownership, which could provide possibilities for alternative farms. Longer-term contracts could also facilitate alternative farms. The interviews also brought up that there is a lack of knowledge-flows about alternative farming to conventional farmers. This could influence people’s decisions to change to alternative farming. It was named that conventional farmers are more convinced by seeing, rather than hearing about alternative farming practices. It was reported that there is a lack of information about alternative farming practices in mainstream agricultural media, in formal agricultural education and from agricultural advisors. It was also named that alternative farming conventions should be more welcoming and directed towards conventional farmers.
to overcome the dualistic conventional-alternative debates. Lastly, farmers reported a wish for stronger consumers’ engagement towards alternative farms. It was also claimed that more alternative products need to be offered to consumers to change their eating habits. This supply of products should happen at the same time as the creating of a market for these products, but this is a difficult task.

<table>
<thead>
<tr>
<th>RQ 2 Leverage points for change</th>
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</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td><strong>Process of change</strong></td>
</tr>
<tr>
<td>Phase 1</td>
</tr>
<tr>
<td>Introduction/excitement</td>
</tr>
<tr>
<td>New knowledge</td>
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</table>

<table>
<thead>
<tr>
<th>Movement</th>
<th>Missing facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Small/ niche/ new</td>
<td></td>
</tr>
<tr>
<td>• Seems to grow unavoidably</td>
<td></td>
</tr>
<tr>
<td>• Swedish and internationally connected</td>
<td></td>
</tr>
<tr>
<td>• Professionally and personally connected</td>
<td></td>
</tr>
<tr>
<td>• Local mid-sized processing and packaging facilities</td>
<td></td>
</tr>
<tr>
<td>• A wider network of specialist services for (starting) alternative farms</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Farming entrepreneurs</th>
<th>Financial structures</th>
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</thead>
<tbody>
<tr>
<td>• Offering start-up possibilities on existing farms lowers the threshold to start</td>
<td></td>
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<tr>
<td>• Examples of starting alternative farms are requested by an international community of land restorers and alternative farmers</td>
<td></td>
</tr>
<tr>
<td>• The EU subsidy system could change from systemic lock-in to facilitator by paying per employee instead of per ha</td>
<td></td>
</tr>
<tr>
<td>• Financial structures (such as easier access to start-up capital) and certification policies for small-scale farms are needed</td>
<td></td>
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<table>
<thead>
<tr>
<th>Generational change</th>
<th>Land ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Young and older people might change for different reasons (sustainable/ethical vs. practical)</td>
<td></td>
</tr>
<tr>
<td>• Young people might change to alternative farming due to a 'farming year’</td>
<td></td>
</tr>
<tr>
<td>• Existing farmers might change to alternative farming due to gradually incorporating farming techniques such as direct seeding and no-tillage</td>
<td></td>
</tr>
<tr>
<td>• Difficulties to obtain land in Sweden constrains starting farming entrepreneurs</td>
<td></td>
</tr>
<tr>
<td>• Landowners have the power to request alternative farming on their land</td>
<td></td>
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<tr>
<td>• Public/collective landownership offers possibilities for alternative farms</td>
<td></td>
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<tr>
<td>• Longer-term renting contracts provides more security for investments in alternative farms</td>
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<table>
<thead>
<tr>
<th>Knowledge to conventional farmers</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Show, rather than tell about alternative farming</td>
<td></td>
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<tr>
<td>• Make alternative farming conferences more accessible to conventional farmers</td>
<td></td>
</tr>
<tr>
<td>• Incorporate information about alternative farming in mainstream agricultural media, formal agricultural education and agricultural advice</td>
<td></td>
</tr>
<tr>
<td>• Stronger consumer-engagement towards alternative farms is desired</td>
<td></td>
</tr>
<tr>
<td>• More alternative products are needed to change consuming habits</td>
<td></td>
</tr>
<tr>
<td>• It is important, but difficult, to align the creation of a consumers market with the supply of alternative products</td>
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</tr>
</tbody>
</table>

Table 6. Summary of findings to research question 2: leverage points for change
5. Discussion

This chapter discusses the findings of the case study of Swedish niche actors in relation to sustainability transition theory. The first section starts of with interpreting the findings through the glasses of the MLP framework. The next section discusses how this research contributes in a broader sense to literature on sustainability transitions and change.

5.1 A view on the food transition with MLP

Figure 2 gives an interpretation of the main findings of this research through the MLP framework. It is a subjective and debatable interpretation of the current state of a food transition, as it was perceived in this case study in Sweden. It includes relevant landscape trends, views on what the food system looks like currently (the regime on the left side of the graph), visions on a future desired and sustainable food system (right side of the regime), multiple concepts on the niche level that challenge the regime. The leverage points that block or enable change are not included in this graph in order to not give an overload of visual information. The model also includes concepts that are not explicitly addressed in this research but that are relevant to it, such as urbanisation and urban farming (named in Italic).

![Figure 2. An interpretation the food transition through the MLP framework](image-url)
The landscape level has driving trends such as globalisation, ecosystem degradation, population growth and increased wealth (Gladek et al., 2016). The regime level gives on the left side concepts that describe the current, unsustainable and mainstream food system. These include linear resource use industrial & conventional agriculture, monoculture agriculture and degenerative models/practices. As chapter 2 explained, there is relative consensus in the sustainability transition literature about the characteristics of the current unsustainable food system (Spaargaren et al., 2013). There is also little discussion about the idea that there needs be a food system transition (Belchior et al., 2016; Miles et al., 2017). However, as explained before, there is less consensus about where to go: what does a sustainable and desirable food system look like? And how to get there? This leaves the future open (right side of the regime level). Therefore, this research aimed to fill blank gap this with the perceptions of niche actors that try to change the regime with practicing alternative food practices. These are the ideas about desired and sustainable production, processing, distribution and consumption that were explained in the previous chapter. The multiple niches employed different practices such as regenerative farming, conservation agriculture, permaculture, organic agriculture and holistic management. There seemed to be relatively little conflicting ideas on characteristics of a desired and sustainable food system. This finding relates to subquestion 1: 'What does a sustainable and desired food system look like in the respondents' opinions'. Figure 2 only gives a brief summary of this described ideal system, but it shows the link between the findings of the case study and the MLP framework. The focus lies hereby on the future, as visions are described that could be a reality in the future.

Secondly, this research looked at the leverage points that could block or help the transition to a desired and sustainable food system. This relates to subquestion 2: 'How do niche actors envision the transition towards a sustainable and desired food system?'. As was discussed in chapter 2, leverage points could be seen as aspects that lock the regime in its current state, but also aspects that could be changed to make niche practices more mainstream and thus transform the regime. It was found that a process of personal change (introduction/excitement, confirmation and implementation) was important for niche practitioners to start. The multiple leverage points that were named in the previous chapter could be seen as proposed action-points to enable niche practices to become more mainstream and thus accelerate the food system transition. Even though these leverage points are not included in figure 2, it is possible to link leverage points to the MLP model. It is not obvious where leverage points exists: on a regime or niche level (a landscape level seem less likely, because this includes long-term and slow change). Because leverage points can be regarded as forces that block change or as forces that can enable change, it is debatable and perhaps personal to which level they should be assigned. Because of this duality, it seems logical to place leverage points in between the regime and niche level. In this place, when a leverage point is addressed, it can change the regime structure and at the same time allow a niche practice to enter the mainstream. There remain many possibilities in this approach and this research only provides an initial suggestion. Future research on sustainability transitions could investigate this topic further.
In addition, it seems that some concepts and practices are more used, more mainstream, than others. Concepts such as sustainability and organic agriculture seem to be more incorporated into Swedish (and European) society and thus more mainstream than concepts such as holistic management and regenerative agriculture. The case study findings imply that these latter ones are less known and employed by fewer people, and are therefore regarded as smaller niches that have not yet influenced the mainstream food system in the same extend as organic agriculture. In order to obtain an clearer systemic idea of the current state of the food transition, figure 2 gives an approximate interpretation of how mainstream these concepts are, influenced by the interviews with respondents and a literature research (niches closer to the regime are more mainstream). It remains of course very debatable how mainstream a practice or concept is, which also differs per place. However, it provides at the least an idea of how the MLP framework could be used in the case of a food system transition and perhaps it provides an initial and cautious overview of the current state of the food system transition (in Sweden or Europe). Further research could quantitively find out how much certain agricultural practices such as conservation agriculture are actually employed in Sweden (or other areas). This could also be dynamically mapped (e.g. by the use of GIS) to make the transition more visible and graspable. Furthermore, investigations of more perceptions from other niches and other actors could contribute to a further understanding of the food system transition and to more developed formulations of a desired and sustainable food system layout.

This research applied the MLP framework on a sustainable food system transition with a future perspective. The emphasis on visions for future food systems is lacking in academic debates, as chapter 3 explained. This research showed that the MLP framework seems to provide a useful approach to analyse visions on future food systems. By filling in the systemic MLP model with empirical findings, the understanding of sustainability transitions can be enriched and made more graspable in terms of real-world applications. Thereby it contributes to the sustainability transition theory in linking a systemic view with an empirical and personal view. Also this approach that figure 2 describes, changes the focus in analysing sustainability transitions from the past and contemporary to the future.
6. Conclusion

This research has shown that societal and personal transitions are very complex and chaotic. This research has aimed to contribute to a more complex understanding of change processes of societal and personal transitions by addressing three gaps in the sustainability transition and MLP framework literature: a lack of focus on (1) individual agency, (2) multiple change-pathways and (3) explicit normative descriptions of desired future aims. These three issues were addressed by the case study of researching niche actors’ perceptions in Sweden on a desired food system and the transition of how to get there.

The lack of individual agency in transition studies was addressed by taking a personal and empirical approach rather than a systemic and abstract approach through interviews and collecting personal opinions and stories. However, the described desired futures include ideas about large-scale change and it was found that all niche actors thought that the food system should radically change to a large extent. Furthermore emphasis was placed on the role of individual agency in creating change by investigating how the respondents came to work in their niche practice. The process of how and why someone changes her/his practices seems to be an important factor to let a niche practice grow (or not). The MLP framework describes that when niches grow and increasingly align with other niches, the regime or status quo of a system can be disrupted. So in order to understand how food transitions work, it is important to research the personal stories of why people change their practices and paradigms and what constrains or enables them in the process of change. Increased knowledge about these processes could help not only to understand how food transitions work, but also what can done to accelerate

The secondly research gap that this research addressed is the relative narrowness of researched change-pathways. This research expanded the view on change by providing the perceptions of the doing-pathway that is employed by niches. It remains important to realise that these suggested perspectives on desired and sustainable food systems and leverage points are from this particular group of niche practitioners. So findings might be completely different with other people. As stated above, more investigations need to be done to gather opinions and ideas to discuss and to find common ground amongst multiple groups in society in order to transition to a sustainable and desired system.

Thirdly, this research addressed the lack in sustainability transition literature of narratives and discussions on normative descriptions of desired futures. In order to reach common sustainable futures, it is required to have more conversations about what ideal systems might look like to have a direction of where to aim societal transition towards. The MLP framework has shown to provide a useful tool when it is filled with perceptions of desired futures. The ideas of niche actors that were researched here could differ considerably from the ideas on desired futures of people who pursue change through one of the other three change-pathways (collaborating, supporting, forcing). It could also differ considerably from people who
do not actively pursue change, from actors in other countries and continents (also in Sweden) and about other sustainability transition topics than food (such as energy, the build environment, transportation etc.). Lastly, ideas on desired futures might (and probably will) change in the future, as Gladek et al. (2016) emphasise: ideas of ideal systems are dynamic and plural, so it is important not to strive for a uniform and fixed solution-for-all. Therefore, future research on sustainability transitions should focus on collecting more stories and perspectives about desired futures and how to get there.

This research has shown that it is useful to adopt an expanded version of the MLP framework in order to get a complex view on change-processes of personal and societal transition to reach more desirable and sustainable futures. Hopefully future research will continue to strive for solutions that lead to a sustainable future.
References


Miles, A. Marcia S. DeLonge & Liz Carlisle (2017) Triggering a positive research and policy feedback cycle to support a transition to agroecology and sustainable food systems. *Agroecology and Sustainable Food Systems, 41*(7), 855-879, DOI: 10.1080/21683565.2017.1331179


Appendix I - Interview guide

Some of the questions were inspired by the research of Costa (2016).

Self
WHAT + HOW?
1. What kind of products are being produced and how? How large is the farm?
2. What is the farm's history? How did the farm start or how did you start farming?

WHY?
3. Why do you farm? What is your own history? - personal motivation
4. Why did you come to practice this 'alternative' way of farming?
5. Which specific events or experiences lead you to 'change' to this way of farming?
6. What is your vision for the future of your own farm?

Others
7. What kind of reactions do you get from people/farmers who do not practice 'alternative' ways of farming?
8. Do your neighbours farm? How?
9. Do you actively try to convince other farmers to change their ways?
10. Why do other 'mainstream' farmers not practice 'alternative' ways of farming? What is preventing them to change?

System
"I want to make a bit of a mental journey in time, into the future. If you imagine a world, decades or longer from now....if you could decide what the world looks like.... According to you, what would it look like ideally? What would the food system look like? Production/distribution/consumption?" (Roughly the author's introduction)

11. How do you envision a desired and sustainable food system in Sweden?
12. What steps are needed to get there? What barriers do currently exist? What is needed to overcome these barriers?