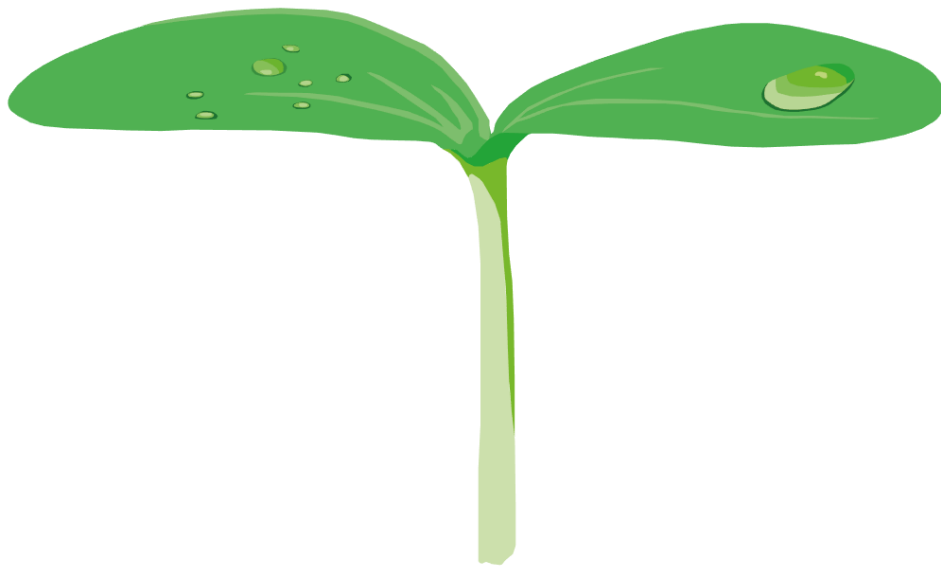


Generating conversion to organic farming

AN EVALUATION OF FACTORS INFLUENCING THE ADOPTION OF ORGANIC FARMING PRACTICES



Human Security Master Thesis

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Summary

Recently, the dissemination of organic farming has received much attention, both in the public sphere and in multilevel policy spheres, where several initiatives aim to increase the organically farmed area. This thesis works according to the following research question: “*What are the most important factors affecting adoption of organic farming in Europe and Denmark?*”. Hence, it addresses the adoption of organic farming and creates insight into the factors which influence farmers’ decision to convert to organic farming. Two theoretical frameworks guide the analyses of the thesis. The first conceptualizes three determinants of change; farmers’ ability, engagement, and willingness. The second addresses factors at three levels of influence; farm-level, community-level, and societal-level, which affect the willingness to change. The analyses are based upon a systematic literature review of 31 peer-reviewed papers about organic conversion in Europe published between 2010 and 2020 and four case studies based on semi-structured interviews with recently converted Danish dairy farmers. The systematic review shows that a range of factors is important to the decision to adopt organic farming. Subsidies, environmental concerns, considerations about the farm economy, and uncertainties about the stability of the organic market are recurring as influential factors. The most recurring factor is supportive social networks. In the four cases, considerations about farm economy are also found to be important; however, prospects of the organic market are a main driver. Interactions with both advisors and social networks are important in the four cases. Environmental concerns are also important in the cases, but to some, the concern developed after conversion, indicating that motivations change with time. During analysis of the empirical data, it became apparent that the ‘levels of influence’-framework cover many perspectives; however, part of the complexity is neglected when using three fixed levels. Based on observations in the empirical data, it is proposed to add a dimension of interlevel dynamics to the framework. This addition grasps the interrelationship between the three levels by creating a notion of how factors at one level may influence factors at another level, which in turn affect the farmers’ willingness to change. The findings of the thesis may be used to guide future efforts to increase the organically farmed areas further. In efforts to disseminate organic farming, it is suggested to create and support strong networks of organic farmers, stimulate the organic market through policy initiatives, maintain or increase organic subsidy levels, and support local communities and food chains.

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List of appendices

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Appendix A: Query string for Scopus search and coding chart (.docx)

Appendix B: Full Scopus search output (.csv)

Appendix C: List of references used for systematic literature review (.ris)

Appendix D: Interview guide (.docx)

1. Introduction

In the past few years, organic farming has received much attention, and politically it has been and still is a goal to expand the organically farmed area (European Commission, 2020, pp. 10–11; Ministeriet for Fødevarer, Landbrug og Fiskeri, 2021). This thesis offers an insight into some of the factors that affect farmers' decision to adopt organic farming and hence the dissemination of organic farming practices. With an offset in a social science tradition and by use of a qualitative research strategy, the thesis explores factors in an EU- and a Danish perspective. Recent policy objectives to increase the organically farmed area have motivated me and sparked a curiosity about how these political objectives could be met in practice. The following chapter introduces the thesis by first presenting the focus of the thesis, and hereafter it addresses the research context in which the thesis positions itself. Then, the research question and working questions, which the thesis evolves around, are presented, followed by a brief introduction to the methodological and theoretical approach. After this, the central arguments and the human security relevance are outlined. Lastly, the thesis's structure is presented to ease the reading experience.

1.1. Scope of thesis

Several policy initiatives, both national and international, aim to increase the organically farmed area, making it relevant to assess what influences the farmers' decisions when they contemplate whether to convert from conventional to organic production. Hence, the present thesis address farmer behavior and processes of agricultural change regarding organic farming. Through a literature review and semi-structured interviews, a spectrum of important factors to the decision-making process is included to maintain and convey the complexity of the decision to convert to organic farming. Hence, factors, such as political climate, attitudes, physical circumstances, and social networks, which affect farmers' behavioral change concerning organic agriculture, will all be addressed in this thesis. The analyses of this thesis are based on a literature review of European research published between 2010 and 2020 and four case studies based on interviews with four recently converted dairy farmers from Denmark.

This topic is relevant for several reasons. First, organic farming, agricultural policies, and research are ever-evolving, and thus farmers' motives and barriers for adopting organic farming may change with time making it relevant to reassess this topic occasionally. This

insight may form the basis for future efforts and measures, either policy or advisory, aiming to increase the organic areas. Second, the EU commission's Farm to Fork strategy set a goal that 25 % of the EU's agricultural area is managed organically in 2030 (European Commission, 2020, pp. 10–11). Hence, there is political support for further dissemination of organic farming in the EU. If one believes the Farm to Fork strategy is beneficial, this thesis may create insights into how the organic areas in the EU can be increased before 2030.

1.2. Contextual research setting

The literature review, which forms the basis of the analysis, is concerned with newer research; however, the subject of motives and barriers for conversion to organic agriculture has also earlier received much scholarly attention. A quite large body of literature has studied farm and farmer characteristics. Organic farmers have by some scholars been found to be younger (Burton et al., 1999; Genius et al., 2006; Rigby et al., 2001), manage smaller farms (Burton et al., 1999; Genius et al., 2006; Rigby et al., 2001), hold a higher education (Best, 2009; Genius et al., 2006; Koesling et al., 2008), and are more likely to be women (Burton et al., 1999, 2003; Rigby et al., 2001) compared to their conventional colleagues. However, other studies have found that organic farmers tend to manage larger farms than conventional farmers (Best, 2008; Koesling et al., 2008). Organic farmers' attitudes have also been widely studied, and especially environmental concern has been found to be a driver for conversion (Best, 2008, 2009; Burton et al., 1999, 2003; Ola Flaten et al., 2006; Genius et al., 2006; Koesling et al., 2008; L  pple, 2010; Padel, 2008; Rigby et al., 2001; Storstad & Bj  rkhaug, 2003; Tovey, 1997). Some scholars found increased food quality is a motivation for farmers to convert (Fairweather, 1999; Ola Flaten et al., 2006; Padel, 2008; Tovey, 1997), and access to appropriate and sufficient advice and technical information has been found to be an essential determinant for the decision to convert (Burton et al., 1999, 2003; Genius et al., 2006; Rigby et al., 2001). Considerations about market and subsidies are by some mentioned as a driver (Best, 2009; Genius et al., 2006; L  pple, 2010; Offermann et al., 2009); however, by other scholars, the uncertainty related to the stability of the market and subsidies is highlighted as a barrier for conversion (Darnhofer et al., 2005; Flaten et al., 2005; Flaten et al., 2006; Schneeberger et al., 2002). Besides from identifying influential factors, several studies have aimed at identifying archetypes of organic farmers. Darnhofer et al. (2005) identified five types of

farmers; the Committed Conventional, Pragmatic Conventional, Environmentally Conscious Non-organic, Pragmatic Organic, and Committed Organic, where the committed organic is driven by ideology and the pragmatic organic by economy. In New Zealand, Fairweather (1999) identified Organic Hopefuls, Frustrated, Pragmatic, and Committed as organic farmer archetypes. The hopeful organics hope to be able to convert in the future, and the Frustrated organics are farmers who presently want to convert but are unable to. The pragmatic and committed organics resemble those of Darnhofer et al. (2005). Flaten et al. (2006) and Padel (2001, 2008) found that early converters and late converters seem to differ from one another, where the early converters are more driven by ideology and late converters by economy. Based on a literature review Lamine & Bellon (2009) argued that research about organic conversion should use a multidimensional and interdisciplinary approach when assessing uptake of organic practices, which will enable research to more fully grasp the complexity of the field.

Before 2011 some studies addressed factors influencing the uptake of organic farming in Denmark. Frederiksen & Langer (2004) found that spatial concentration of organic farms could be explained by regional specialization and favorable local policies supporting conversion to organic farming., Risgaard et al. (2007) also studied the differential distribution of organic farming but found that the concentration of organic farming highly depends on prices of land, social and physical distance to relevant stakeholders, and access to organic pioneers and organic agricultural advisors. Some papers found that Danish farmers' decisions regarding conversion to organic farming are influenced by the market prospects (Daugbjerg et al., 2011; Jensen, 2007; Kaltoft & Risgaard, 2006) and subsidies (Daugbjerg et al., 2011; Kaltoft & Risgaard, 2006). Environmental concern has also been shown to affect the farmers' willingness to adopt organic farming (Jensen, 2007; Michelsen, 2001; Tress, 2001). Michelsen (2001) highlighted how early converters were driven by ideology and that late converters are more driven by utilitarian motives, such as the economy and the need for a professional challenge. However, in a comment to Michelsen (2001), Noe (2003) argued that these findings may be caused by the timing of the conducted survey and questions whether organic farming can still be considered a critique of conventional farming. In another paper, Noe (2006) argued that the mobilization of non-organic farmers in an effort to disseminate organic farming has resulted in a reduction in the gap between organic and conventional farming. Moreover, Noe (2008)

claims that the main barrier for conversion to organic farming is institutional rather than technical. Further, it is proposed to integrate organic farming into society, mobilize new and alternative actors, and actively participate in developing rural areas to disseminate organic farming further. To my present knowledge, there have not been published studies about Danish farmers' decision-making about organic conversion since 2011.

1.3. Research question and objectives

The following thesis has a social science point of departure and will answer the following research question:

“What are the most important factors affecting adoption of organic farming in Europe and Denmark?”

The following working questions will guide the effort to answer the research question:

1. What factors have been shown in recent research to affect European farmers' decision-making regarding organic farming?
2. At what levels do influential factors appear to originate?
3. What influential factors and perceptions regarding organic conversion can be found amongst recently converted Danish dairy farmers?
4. What similarities and differences exist between the influential factors found in the research and amongst the interviewed farmers?
5. How can these factors be addressed in future research?

Through a literature review, the first and second working questions about European farmers' decisions are answered. Four semi-structured interviews with Danish dairy farmers cast light on the third working question. A comparative discussion of the analytical results answers the fourth working question. A discussion about the theoretical framework of the thesis addresses the fifth working question. The final answer to the research question is found in the conclusion.

1.4. Methodological and theoretical approach

A qualitative methodological approach has been used to approach the topic, and the analytical work of the thesis is two-fold. The first section of the analysis is based on a systematic literature review of research about the adoption and dissemination of organic

farming in Europe published between 2010 and 2020. The purpose of the review is to identify factors that have previously been found to affect farmers' decisions regarding organic farming and the dissemination thereof. The approach is exploratory since it aims to identify categories of meaning and patterns within the existing body of literature (Marshall & Rossman, 2006, p. 34). The second section of the analysis takes a more deductive approach, where four cases based on semi-structured interviews with recently converted Danish dairy farmers are analyzed. The cases illustrate and provide examples of what influenced Danish practitioners' decision-making. Since the cases have a narrower scope than the literature review, both regarding timeframe, location, and production branch, they provide in-depth insight into the experiences of recently converted dairy farmers and what influenced their decision to convert. Two conceptual frameworks are applied to the empirical data to structure and focus the analyses. The first framework addresses the farmers' ability, engagement, and willingness to adopt a particular practice. The second framework addresses the levels from which the farmers' willingness is influenced, the levels being farm-level, community-level, and societal-level (Mills et al., 2017). After the analysis of the four cases follows a comparative discussion of similarities and differences between the findings of the literature review and the case studies. The theoretical framework and methodology are elaborated upon in chapter 2 and 3.

1.5. Key arguments

A central finding of the thesis is that farmers' decision to convert to organic farming is influenced by a complex set of interrelated factors originating at various levels. Subsidies were found to be a highly influential factor in the reviewed literature, while market conditions were of lesser importance. The four interviewed farmers, however, emphasized that market conditions had been crucial to their decisions. Social networks with farmers and neighbors played an important role in farmers' decision-making in the literature and cases, as networks may encourage and inspire change. Furthermore, the political sphere was a recurring theme in the literature and amongst the interviewed farmers, where there was skepticism towards the stability of the political sphere, which creates uncertainty and hesitation.

Another important outcome of the analyses was that it is valuable to add a concept of interlevel dynamics inspired by the theory of Communities of Practice to the framework

regarding levels of influence affecting farmers' willingness to adopt. This creates a notion that captures how factors at each level may influence factors at the other two levels and ensures that analyses grasp, preserve and articulate the complexity of the factors influencing the farmers' decision-making.

1.6. Organic agriculture as a Human Security subject

Since the present thesis is a human security thesis, it is relevant to reflect on why the dissemination of organic farming is a relevant human security subject. In UNDP's 1994 Human Development Report, the concept of Human Security was introduced as an extension or alternative to traditional approaches to security studies. Compared to traditional security studies, the human security concept differs as threats are considered universal and interdependent. Meaning that human security is a concern to all individuals in the global south and the global north, and threats to human security move across borders. Moreover, human security is people-centered, and security is argued to be easier ensured through early prevention rather than late intervention since it is less costly and may prevent the development and spread of serious threats (United Nations Development Programme, 1994, p. 22). Human security is made up of seven components which are economic-, food-, community-, political-, personal-, health-, and environmental security, which are all interlinked and creates spill-overs between each of the components (Tadjbakhsk & Chenoy, 2007, pp. 15–16; United Nations Development Programme, 1994, pp. 24–25). Therefore, multiple components should be addressed simultaneously (Tadjbakhsk & Chenoy, 2007, p. 18).

The International Federation of Organic Agriculture Movements (IFOAM) is an umbrella organization representing organic movements worldwide and maintaining the organic standards. Organic farming works and advances according to four core principles: health, ecology, fairness, and care (IFOAM, n.d.-b, p. 1). The four organic principles highly resemble the nine components of human security. The principle of health regards soil, human, and animal health (IFOAM, n.d.-b, p. 2), hence being relevant to both health-, environmental-, and food security. The ecology principle states that organic agriculture is conducted within various ecosystems, making it crucial to protect the ecosystems through responsible management and farming systems (IFOAM, n.d.-b, p. 2). This resembles the pillar of environmental security. The principle of fairness promotes "(...) equity, respect,

justice and stewardship” and states that organic farming must enhance food sovereignty and reduce poverty (IFOAM, n.d.-b, p. 3). This principle contributes to improving personal-, community-, food-, and economic security. The fourth principle about care states that organic agriculture must be conducted with precaution and care to maintain and ensure a healthy environment for future generations (IFOAM, n.d.-b, p. 3). This is well in line with human security’s principle to prioritize early prevention rather than late intervention. While organic farming may not be currently perfectly meet its own ideals, the principles are guiding the development of organic farming, meaning that organic farming may come to contribute to improving human security.

1.7. Reading guide

The structure of the thesis is as the following. In chapter 2, the two frameworks regarding farmers’ *ability, engagement, and willingness*, and *levels of influence* are presented as the theoretical framework of the thesis. In chapter 3, the systematic literature review and semi-structured interviews are represented as the methodological approach of the thesis. Chapter 4 briefly contains a contextualization and presentation of organic farming in the EU and Denmark. Chapter 5 consists of a literature review that is guided by the theoretical frameworks presented in chapter 2. In chapter 6, the four cases with Danish dairy farmers are analyzed in the same manner as in the literature review. Chapter 7 consists of two sections of discussion, first, the results of the analyses are compared and discussed, and second, the theoretical approach is discussed, and an additional component of interlevel dynamics is presented. Chapter 8 consists of the thesis’s conclusions. Chapter 9 presents relevant outlooks and suggestions for future policy focuses.

2. Theoretical framework

The following chapter presents the theoretical framework of this thesis, which is based upon two interrelated conceptual frameworks presented by Mills et al. (2017). The chapter is structured like the following. First, the work of Mills et al. (2017) is briefly introduced. Then, the first conceptual framework about farmers’ *ability, engagement, and willingness* to adopt is presented as central determinants in behavioral change. Hereafter, the second conceptual framework is presented, which concerns *levels of influences* affecting farmers’ willingness to change their behavior, the levels being societal-level, community-

level, and farm-level. Lastly, relevant critiques of the conceptual frameworks are reflected upon.

2.1. Interrelationships and multi-level concepts affecting farmer behavior

The two conceptual frameworks introduced by Mills et al. (2017), which form the theoretical framework of the thesis, are developed by use of qualitative data retrieved from a literature review and 78 in-depth interviews conducted by the authors. The first conceptual framework presents farmers' *ability*, *engagement*, and *willingness* as important determinants for behavioral change regarding uptake of alternative agricultural practices. The second conceptual framework address the multi-level interrelationships which affect farmers' willingness to adopt alternative agricultural practices, where farmers are influenced by various factors originating from either *societal-level*, *community-level*, or *farm-level of influence*. The purpose of the two conceptual frameworks is to create a clearer and deeper understanding of what affects farmers' motivations and behaviors in order to create long-lasting and durable agricultural policy and change. (Mills et al., 2017).

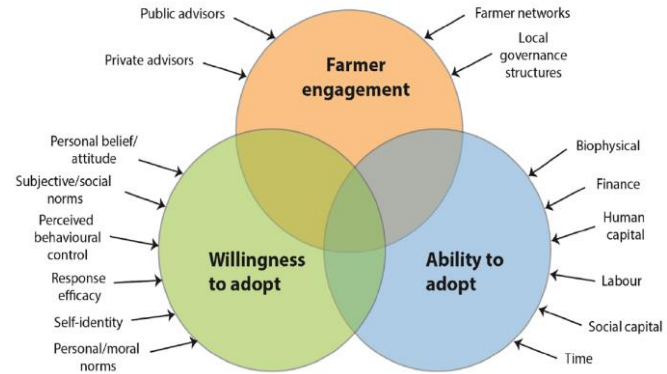
Mills et al. (2017) address farmers' environmental behavior and adoption of environmentally friendly practices; however, as the frameworks concern behavioral changes at the farm, it is also applicable for other types of agriculture-related behavioral changes, in this case, the conversion to organic farming. Both adoption of various environmentally friendly practices and organic farming call for changes at the farm and in the farmers' routines and changes in the personal sphere, such as what the farmer considers as 'good farming'. Further, one's social networks may also change concurrently with the uptake of a new practice.

2.2. Determinants of behavioral change

The three determinants for behavioral change presented in the first conceptual framework are farmers' ability, engagement, and willingness to adopt, which are essential to the farmers' decision to adopt an alternative practice. As Figure 1 indicates, the three determinants are interrelated and interact and affect the farmers' behavior regarding a specific practice, such as organic

Figure 1

Factors influencing farmers' environmental decision making



Note. Reprinted from Mills et al. (2017, p. 288)

farming. All determinants may not necessarily be equally present in a given situation; however, as the central part of the figure indicates, the most favorable circumstances for sustained and long-lasting change are created when all three determinants are present and in favor of conversion. The three determinants are based on previous research in farmer behavior (Mills et al., 2017).

2.2.1. Farmers' ability to adopt

The first determinant concerns a range of factors, which affect the farmers' ability to adopt a particular practice. The factors affecting farmers are heterogeneous and may vary between different production branches, spatial settings, and countries and regions. However, several studies have found that the farm's conditions, e.g., regarding the financial situation, labor intensity, and time constraints, affect the farmers' ability to adopt a specific practice. Furthermore, other studies have found that farm size, tenure, bio-geographical conditions, and income dependence influence the adoption of alternative practices. In extension to this, personal characteristics, such as level of education or imminent succession of the farm, have also been found to play a significant role in farmers' ability to adopt in some cases (Mills et al., 2017, p. 285).

2.2.2. Farmers' willingness to adopt

When assessing farmers' willingness to adopt alternative practices, scholars have naturally used different theoretical approaches, such as Value-Belief-Norm theory and Theory

of Planned Behavior. The Value-Belief-Norm approach is based on the Norm Activation Theory and argues that behavior is determined through a causal chain beginning with a set of personal core values, which lead to a particular behavior. The concept of willingness leans towards the tradition of Theory of Planned Behavior, which argues that behavioral intentions are based upon a set of personal attitudes, according to which actors are making their choices. The attitudes or information an actor acts according to are based on facts and experiences. In Theory of Planned Behavior, the goal is to predict or determine behavior based on personal attitudes, which reflect belief systems, subjective norm, which is created through social influence, and perceived behavioral control, which is the farmer's perceptions of the adoption of alternative practice and its efficacy. Furthermore, some scholars argue that the farmer's self-identity, in this case "(...) the extent to which a certain behavior is considered to be part of the self", is a valuable addition to Theory of Planned Behavior, as it fosters sustained change (Mills et al., 2017, p. 285). Hence, a farmer's willingness to adopt a specific practice depends, according to Mills et al. (2017), upon attitudes, self-identity, perceptions, personal beliefs, and values.

2.2.3. Farmers' engagement

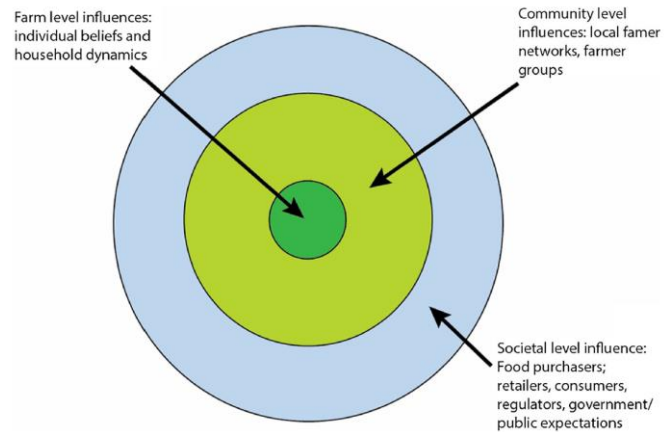
The third determinant is farmers' engagement, which concerns a farmer's engagement with advisory services and various support networks, which may spark an interest, deepen the farmer's understanding, and affect personal and social norms. Previously, research has suggested that farmers engage differently with advisory services and support networks, which may affect their environmental behavior and decision-making. Further, this engagement varies between countries as available advisory options depend on the national context. The farmers' relationship to and trust in advisory services varies from farmer to farmer and may play a key role in determining the farmer's behavior. The farmers' engagement can consist of engagement with advisory services, support networks, informal networks, and online information, amongst other things. Generally, this determinant affects the farmers' engagement with information (Mills et al., 2017, p. 286).

2.3. Levels of influence affecting willingness

The second conceptual framework introduced by Mills et al. (2017)

concerns different levels of influence affecting farmers' willingness to adopt an alternative practice; the three interrelated levels are farm-level influences, community-level influences, and societal-level influences, which are illustrated in Figure 2. Of the three determinants mentioned above; ability, engagement, and willingness to adopt, the

Figure 2
Levels of influences affecting farmers' willingness to change



Note. Reprinted from Mills et al. (2017, p. 291)

farmer's willingness to adopt alternative practices are the most challenging to affect, hence making it relevant to evaluate how farmers' willingness is and can be influenced and from what levels, which may pave the way for sustained systemic changes within agricultural systems (Mills et al., 2017, p. 290).

2.3.1. Farm-level of influence

Numerous factors are important at each level, and at farm-level vital factors may be spouses, family members, personal beliefs, or biophysical circumstances at the farm. Family members tend to have a considerable influence on farmers' willingness to adopt alternative practices, meaning that, e.g., significant others' opinions of the alternative practice in question may largely influence the willingness to adopt the practice. Similarly, intergenerational relationships may also influence willingness. Many farms succeed from one generation to the next, meaning that older generations, e.g., parents who still work at the farm, and their opinions, either positive or negative, may influence farmers' willingness to adopt a particular practice. These intergenerational factors may slow changes, as different generations may hold different beliefs of farming practices. The farmers' personal beliefs and core values are also principal factors at farm-level, influencing farmers' willingness to adopt. These beliefs may concern considerations about successions and leaving the farm in good conditions for the next generation or considerations regarding the environment and wildlife conservation. Besides affecting willingness to adopt, such

beliefs or values may also affect how a farmer engages with advisory services (Mills et al., 2017, pp. 290–292). While the second conceptual framework presented by Mills et al. (2017) mainly considers personal beliefs and intergenerational influences at the farm-level, it is also valuable to consider biological and physical circumstances as farm-level influences. The physical structure at farm-level may originally stem from personal beliefs; nevertheless, the physical structures or current production may increase willingness, e.g., by easing transitions from one system to another. This may be the case with conversion to organic farming, e.g., if the cattle are already outside during summertime. Hence, the biological and physical conditions are also considered as a farm-level influence during the later analyses.

2.3.2. Community-level of influence

Farmers' networks, either personal or professional, and other reference groups, but also the farmers' thoughts about how their practices are perceived through the lens of others' social norms, are considered a community-level influence. A widespread social norm is that farmers whose farms are neat and productive are often considered as 'good farmers' by others (Burns, 2021; Sutherland & Darnhofer, 2012). This perception of 'good farming' may affect the farmers' willingness to adopt alternative practices. The social norm may also change over time, affecting the farmers' behavior and adoption of certain practices (Mills et al., 2017, pp. 292–293). In the subsequent analysis, the concept of community includes local communities, comprised of, e.g., neighbors and neighboring farms, as well as more specialized and non-local communities, such as farmers' groups, discussion groups, and organizations, which may influence the farmer's decision. It ought to be noted that there exists a range of diverse types of communities. The communities might be based on either activities or ideology. Further, they may be anchored by place or be dispersed in space (Brint, 2001, p. 10). The different types of communities can be divided into further sub-categories, but in this context, it is important to highlight that the concept of community is used broadly in the following chapters. This means that various types of communities are included in the analysis of community-level influences.

2.3.3. Societal-level of influence

The way farmers perceive consumers' demands and public opinions can be considered as societal-level influences. The societal-level influences contribute to change subjective

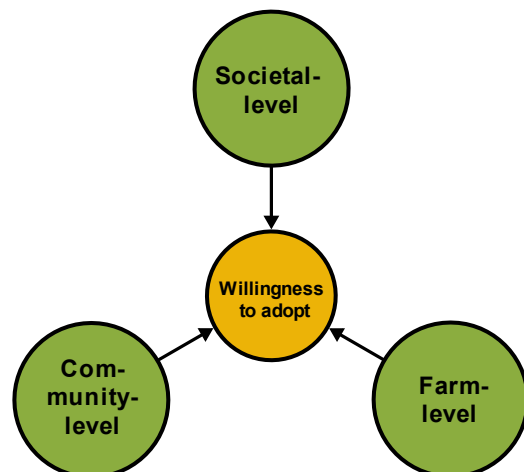
norms of the farmers, meaning that public opinion contributes to shaping the farmers' opinions about what is considered the 'right thing to do'. Especially negative publicity may affect the farmers' subjective norm. Mills et al. (2017) also argue that the post-war productivity-era still affects some farmers as they remain to consider it their social responsibility to produce as much food as possible (Mills et al., 2017, p. 293). In the thesis's analyses, the farmer's perceptions of consumer demands and public opinions will be included as a societal-level influence. Furthermore, organic conversion may have financial effects on the farm's economy, and therefore economic factors, such as subsidies and market conditions, will be included at societal-level in the subsequent analysis. Moreover, research and politics are also included as societal-level influences since decisions and actions within either of the two spheres may vastly affect farmers' behavior.

2.4. Critical reflections about levels of influence

Mills et al.'s (2017) theoretical framework regarding levels of influence is indeed a valuable tool to throw light on the multi-level influences, which affect willingness to adopt organic farming. However, the visual representation of the framework may be somewhat misleading for two reasons (see Figure 2). First, the structure of the circles may indicate a hierarchy between the three levels; however, the order of the hierarchy may be interpreted differently. One may interpret the societal-level as the most influential since it is the outer circle and has the largest surface

area. Another may interpret farm-level as being the most influential since farm-level is at the core of the figure. Second, since the three circles touch one another, it may insinuate an interaction between the three levels. However, such hierarchies and interactions are not present in the description of the framework. Hence, to restore clarity regarding the visualization of the framework, a revisualization of the framework is presented in Figure 3. Compared to the original visualization, this revisualization

Figure 3
Revisualization of 'levels of influence'



Note. Adapted from Mills et al. (2017, p. 291)

is more accurate since it does not insinuate any hierarchical structures or interactions

between the three levels, which correspond better to the written description of the framework. The reader should therefore keep Figure 3 in mind when reading the remainder of the thesis.

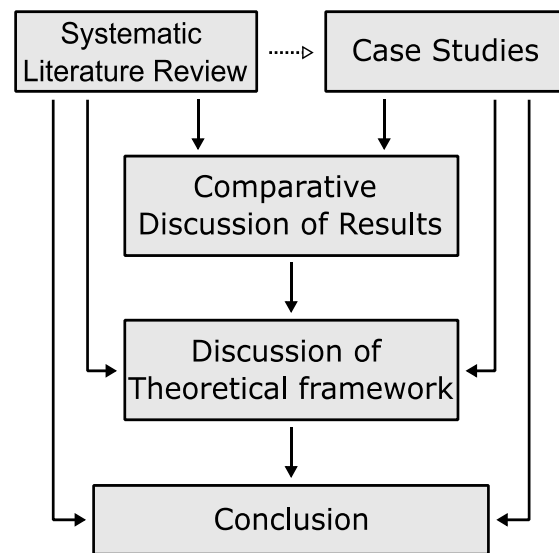
3. Methodology

Different methodological approaches have been used to collect different types of empirical data for this thesis. The methods used are a systematic literature review and semi-structured interviews, which will be presented and reflected upon throughout the following chapter.¹ The following section presents the preparation for data collection, the data collection itself, and the coding and analysis of the data.

3.1. General methodological approach

The research strategy of the thesis is visualized in Figure 4. The analysis of the systematic literature review and the case studies are guided by the theoretical frameworks regarding determinants of change and levels of influence and are analyzed separately. The interview guides used to guide the four semi-structured interviews, which form the cases, were inspired by preliminary findings of the literature review, hence creating an implicit interaction between the two sections of analysis, as indicated in Figure 4. The two sections of analysis are explicitly linked in a com-

Figure 4
Research strategy of the thesis



Note. The dashed arrow connecting the systematic literature review to the case studies indicate and implicit effect on the case studies

parative discussion of the findings of the analyses. The analyses and the comparative discussion form the basis for discussing the theoretical framework regarding ‘levels of influence’. This discussion results from an iterative process in which the encounter between theoretical framework and empirical data fostered new realizations and ideas, which resulted in a proposal for an expansion of the framework regarding levels of influence. All sections of analyses and discussions will finally be summarized in the conclusion.

¹ The following chapter is a reworked edition of the author’s Research Project Design exam

Throughout the analyses and discussion, quotes from the empirical data will be used to clarify important arguments. When quoting the empirical data, the following symbols will be used:

[] Word/letter added to create a meaningful quotation, e.g., “it had to be adapted as well” to “[the barn] had to be adapted as well.”

(...) A part of the original sentence has been left out of the quotation

3.2. Literature review

The literature review takes a somewhat explorative approach and is structured according to the conceptual frameworks of Mills et al. (2017). The approach is explorative since Mills et al. (2017) merely provides a set of concepts used to create a notion of the dynamics found in the literature.

3.2.1. Doing a systematic literature review

As previously mentioned, there is currently an interest, both in the political sphere and in the broader public sphere, in increasing the organically farmed area, making it relevant to analyze existing research on the subject in order to synthesize the existing knowledge within the field (Fink, 2005, p. 11). Different methodological approaches to literature reviews exist, and systematic and traditional reviews are the most common ones, serving different purposes. There are different sub-categories to the traditional review, e.g., the narrative, conceptual, state-of-the-art, scoping, meta-narrative, and realist review (Greenhalgh et al., 2018, p. 6; Jesson et al., 2011, p. 76). Common to all types of traditional reviews are that the review is open and flexible and usually is “(...) exploring issues, developing ideas, [and] identify research gaps” (Jesson et al., 2011, p. 76). The traditional review is often concerned with interpreting a specific issue or providing critique, thereby creating a deeper understanding of a given subject (Greenhalgh et al., 2018, p. 3). The systematic review has a narrower scope and is based on predefined and transparent inclusion and exclusion criteria. These reviews are typically based on exhaustive literature searches, which are then narrowed down by the selection criteria (Greenhalgh et al., 2018, p. 2). In this case, the process must be transparent and thoroughly documented (Jesson et al., 2011, p. 105). The systematic literature review creates transparent, comprehensive, and reproducible knowledge about a subject (Fink, 2005, p. 17). The

systematic review increases the clarity of the research and easily allows the reader to assess the quality of the analysis. Further, it improves the study's validity by reducing selection bias, as the selection of publication follows a rigorous protocol with inclusion and exclusion criteria. Moreover, it allows for quality control and scrutiny, as the entire review process must be transparent (Booth et al., 2016, p. 19).

The systematic literature review was chosen for this thesis due to the abovementioned characteristics. The purpose of this literature review is, as described by Booth et al. (2016), to identify any consistencies and inconsistencies within the present body of literature, meaning the identification of trends (p. 11) regarding factors affecting the adoption of organic farming in Europe. Furthermore, the literature review allows for the later analysis of the four cases to be carried out in the context set by the literature review (Booth et al., 2016, p. 14). The systematic review was carried out according to the following six phases presented by Jesson et al. (2011, p. 108):

1. *Mapping the field through scoping review*: Before initiating the systematic review, a flexible and open scoping review was carried out with broad searches to become familiarized with the field of study. Furthermore, this allowed for narrowing the subject and preparing for the systematic review.
2. *Comprehensive search*: The database Scopus were searched for relevant publications using a fixed query string, and results were then screened using a set of inclusion and exclusion criteria (see chapter 3.2.2).
3. *Quality assessment*: During the last step of the screening process, abstracts were read and assessed as to whether the given publication was relevant or not (see chapter 3.2.3). This assessment continued during the reading of articles.
4. *Data extraction*: While reading articles, important data were thematically coded in NVivo and written into a chart to ease analysis (see chapter 3.2.4).
5. *Synthesis*: The findings of the systematic literature review is synthesized in chapter 5 and is structured according to Mills et al.'s (2017) frameworks.
6. *Write up*: The final phase creates transparency of the process, making it possible for others to replicate the review. The rest of chapter 3.2 is dedicated to this purpose. Further documentation of the process can be found in appendixes A, B, and C.

Since systematic reviews are often time-consuming, they are often conducted in collaboration between several researchers, preventing selection biases. However, the present literature review is carried out solely by the author of this thesis, making the transparent and rigorous selection vital as it minimizes the risk of selection bias while allowing for scrutiny of the process.

3.2.2. Searching for literature

A query string was created with a set of inclusion or exclusion criteria for the literature search. The entire string can be found in appendix A. The title-abstract-keyword search was the following:

“(TITLE-ABS-KEY (organic AND farm* AND conver*) OR TITLE-ABS-KEY (organic AND farm* AND adopt*) OR TITLE-ABS-KEY (adopt* AND organic AND *agricultur) OR TITLE-ABS-KEY (conver* AND organic AND agriculture*) OR TITLE-ABS-KEY (farmer* AND behavior*) OR TITLE-ABS-KEY (farmer* AND behaviour*) OR TITLE-ABS-KEY (farmer* AND decisions*))”

The TITLE-ABS-KEY-search searched titles, abstracts, and keywords for the given search words. By adding “*” at the end of a word, the search engine included results with different inflections or suffixes, e.g., a search for “farm*” will include results of “farm”, “farms”, “farmer”, and “farmers”.

The search focused on organic conversion, farmer behavior, and farmer decision-making, and further, only articles conducted in contexts similar to the Danish context were included; hence articles with country affiliation to countries outside of the EU were excluded. Furthermore, only articles that had already been published were included. Lastly, articles about “organic carbon” and “rice”, categories suggested by Scopus’ search engine, were excluded, as those are affiliated with studies that are not relevant to the present area of research. All non-English articles were also excluded. On the 20th of November 2020, this search had 1908 hits on Scopus, and all references were exported as a CSV-

file (see appendix B). The enclosed CSV-file is a reformatted version, which is more suitable for review than the original CSV-file².

3.2.3. Selecting articles

The Scopus output was manually screened several times, each time with different exclusion criteria, to avoid excluding relevant articles. Therefore, the irrelevant, relevant, and potentially relevant articles were color-coded and not deleted to avoid missing relevant references. In the first screening, articles were excluded based on geography by using the search function in Excel to search for continents, regions, and countries which not relevant to the purpose of the literature review, meaning areas outside of the EU. In the second screening, irrelevant production types, such as tobacco, aquaculture, coffee, tea, cocoa, and GMO, were excluded. These production types are generally associated with countries outside of Europe, except aquaculture, which was not a relevant production branch. In the third screening, a search for articles containing irrelevant terms such as phosphorous, biophysics, and health was made, and most of the hits were excluded. In the fourth screening, a search for terms such as ‘consumer’, ‘alternative food networks’, and ‘farmers’ markets’ was done, and irrelevant articles were excluded. In all screenings, all hits’ article information was assessed manually before excluding or including articles. All ambiguous cases were reassessed at late screenings to ensure that exclusions were made cautiously. During the first four screenings, the citation list was cut to around 900 articles. Then all articles were manually screened by title, and articles that did not relate to farmer behavior or decision making were excluded, bringing the citation list down to around 400 articles. To further narrow the citation list, abstracts were manually screened to assess whether the articles were relevant or not. After screening abstracts, the list was down to 182 articles. After this point, only articles concerning the adoption of organic farming were included. While some articles about behavioral changes regarding, e.g., Agri-environmental schemes or conservation agriculture, potentially could be of interest to the present topic, they were excluded due to the time constraint of the thesis. After all screenings, the list of references held 23 references.

² The original Scopus output (.csv) and Python-script used to reformat the output can be handed over by request (201509380@post.au.dk)

Snowball sampling was also used to supplement with other relevant articles to ensure that relevant articles that were not found through the Scopus search were included in the literature review. The additional references were found through broader searches, screening of bibliographies, and citing papers. As the thesis aims to create knowledge relevant to the present situation, only articles published between 2010 and 2020 were included. After excluding articles published before 2010 and adding the articles found through snowball sampling, the final list consisted of 31 papers (see appendix C).

3.2.4. Coding and analysis of articles

The software NVivo was used to code all reviewed articles. The coding of the articles was inspired by Saldaña's (2014) description of coding of qualitative data analysis, especially the type of coding called 'to categorize'. This type of coding reorganizes data into meaningful categories, making it easier to identify interrelationships, patterns, and discrepancies in the data and between different sets of data (Saldaña, 2014, p. 587). In this case, the categories made it easier to create an overview of and compare the articles. All articles were coded in the software NVivo, which allowed for creating a system where articles could easily be compared according to categories, recurring trends, findings, methodological approaches, and theories, thus easing the analysis. While reading the articles, a thematic coding based on methodology, theoretical approach, societal-level influence, community-level influence, farm-level influence, ability, willingness, and engagement were applied. The codes were based on the frameworks of Mills et al. (2017)³. In extension to this, charted coding was also used, where the most notable points concerning each category were emphasized and summarized, which is valuable, as it creates an overview of the most notable analytical points of each article and allows for easy comparison (Imel, 2011, pp. 157–158). After reading the articles, the charted coding was also made according to the theoretical frameworks. The chart template is enclosed in Appendix A.

³ The coded articles (.QSR) and the charted coding (.docx) can be handed over by request

3.3. Qualitative interviews with farmers

After the systematic literature review follows an analysis of four qualitative interviews with four Danish dairy farmers who recently converted from conventional to organic dairy farming. The following introduces and reflects upon the applied methodology.

3.3.1. Semi-structured interviews

All four interviews were carried out as semi-structured interviews, allowing the interviewer to participate actively in generating knowledge (Brinkmann, 2014, p. 286). Kvale & Brinkmann (2009) describe the semi-structured lifeworld interview as: “(...) an interview with the purpose of obtaining descriptions of the lifeworld of the interviewee in order to interpret the meaning of the described phenomena” (p. 3). Despite having acted within similar circumstances, the farmers may have had different experiences and opinions of conversion. The semi-structured interview allows for follow-up questions and the pursuit of unforeseen subjects and experiences, which have been important to the individual and compared to the structured interview, this reduces the risk, that the interviewer's potential prejudice or expectations dominate the outcome of the interview (Poulsen, 2016, p. 76). The semi-structured interview generates knowledge about the lifeworld of the interviewees, meaning their lived experiences of everyday life in order to interpret and understand a given phenomenon (Kvale & Brinkmann, 2014, p. 49); in this case, what affected the farmers' decision to convert to organic farming. The concept of the lifeworld is a frame of reference within which all humans act, and it is an intersubjectively shared and meaningful arena, which is often taken for granted (Brinkmann, 2014, p. 287; Juul, 2012a, p. 80). The semi-structured interviews conducted for this thesis create insight into the interviewee's lifeworlds of their everyday lives by asking questions about their stories, opinions, experiences, and behavior (Kvale & Brinkmann, 2014, p. 49). While this is the purpose, it is essential to note that I do not have an agricultural background, meaning that I do not share the same lifeworld as the farmers. Hence, I will never fully grasp their lifeworlds; however, the semi-structured interview allowed me to approach an understanding hereof.

3.3.2. The semi-structured interviews as a case-studies

The four semi-structured interviews should be considered as four cases, meaning that each interviewee represents a case. Case studies may take several different forms and

have different purposes, but roughly speaking, the case may be an independent research methodology or an illustrative case (Thualagant, 2016, p. 326). Initially, the cases were meant to illustrate how some practitioners have experienced the most prominent factors in the literature and how their experiences are similar and different. However, in practice, the cases became more of an independent methodology, guided by the theoretical framework and by the farmers' experiences and opinions, thus providing insight into what influenced the individual farmers in his context. In a comparative discussion, the approach is more deductive, as the findings of the two analyses are evaluated against one another. The four interviews allow for the generation of an in-depth understanding of the participants' lifeworlds, and the use of more cases would have limited the unfolding of each case during the analysis. There are different approaches to case studies, e.g., a retrospective, snapshot, or longitudinal. As the four cases deal with an event, the conversion to organic farming, which happened in the past, and the conversations centered around past decisions and actions, the cases can be characterized as retrospective (Thomas, 2011, p. 517; Thualagant, 2016, p. 324).

The interviews build on the hermeneutic tradition as they are interpreted in relation to one another and later to the literature review's findings (Juul, 2012b, pp. 109–110). In line with the hermeneutic tradition, the cases provide a thick description, which refers to the thorough description of both actions, contexts, unwritten rules, and subjective explanations. Hence, this contributes to creating a deeper understanding of the interviewees' behaviors and choices (Geertz, 1973). The context of the farmers' behavior is set through descriptions of organic agriculture in Denmark and Europe, the literature review, and the farmers' narratives. The thick descriptions create insight into the participants' complex lifeworlds; however, as cases may be difficult to summarize due to the complexity (Flyvbjerg, 2011, p. 311), the reporting of the cases were based on and structured according to a set of codes derived from the theoretical framework (see chapter 3.3.7)

3.3.3. Selecting interviewees

In contrast to the literature review, which had a broader scope, the semi-structured interviews had a narrower scope and created in-depth knowledge. Compared to other production branches, the market conditions for organic milk are somewhat favorable as organic milk has a market share of 32 % in Denmark (Christensen & Sandøe, 2018, p. 21).

Therefore, a study of organic dairy farmers interesting, as the barriers to conversion to organic farming seem easier to overcome, at least at first glance, making it interesting to investigate what currently affects the farmers' decision. To ensure that the interviewees had acted in similar conditions, the selected farmers converted between 2015 and 2017. Organic conversion of dairy farms often happens in waves, and the most recent one was between 2015 and 2018 (Landbrugsstyrelsen, 2020, p. 15). The narrow timeframe ensures that the farmers have acted within a similar economic and political climate, making their opinions and experiences comparable, and further, it creates knowledge about what presently affects dairy farmer's decision-making. The geographical location and herd size were not crucial to the selection; instead, it was considered valuable to include farmers with different spatial characteristics.

The farmers were selected through snowball sampling since the Danish GDPR legislation restricts companies and organizations from handing out member's personal information. During my project placement at the Danish Agriculture and Food Council, I developed a network, which helped establish contact with relevant people and potential interviewees. Three interviewees were found through my professional network. Hence, my project placement acted as a gatekeeper, allowing me access to interviewees. One interviewee was found through my private network. However, either of the interviewees exists within my direct network; therefore, there is no personal bias.

3.3.4. Developing the interview guide

The development of the interview guide was inspired by Kallio et al.'s (2016) framework for the development of interview guides for semi-structured interviews. The framework consists of five phases. First, it is assessed whether and why a semi-structured interview is appropriate to the topic and research question (Kallio et al., 2016, p. 2959). Semi-structured interviews are relevant since the aim is to generate knowledge about the farmers' lifeworlds (see chapter 3.3.1). Second, research within the field is reviewed to create a research context, identify research gaps and needs for complementary knowledge (Kallio et al., 2016, p. 2959). In this phase, existing research within the field was reviewed through broad searches (see chapter 1.2) and through preliminary findings of the literature review to become familiar with the most prevalent findings, methodologies, and theoretical approaches within the field. Third, the preliminary interview guide is developed in

accordance with the findings of the previous phases. The questions must be clear, non-leading, participant-oriented, open-ended, and only address one thing at a time (Kallio et al., 2016, pp. 2959–2960). Inspired by preliminary findings of the literature review, seven themes were formulated, each with a range of sub-questions. The main themes being factual information, general experiences with conversion, the organic market, advisory services, social networks, environment and climate, and plans for the future. This phase was inspired by a deductive approach since the interview guides were inspired by the preliminary findings of the literature review. Nonetheless, the interviews were not strictly deductive since the themes and questions were intended to guide the interview; but were open to and encouraged unexpected twists and turns. In phase four, the interview guide is pilot tested by consulting experts or field testing the interview (Kallio et al., 2016, pp. 2960–2961). A colleague at the Danish Agriculture and Food Council and experts from AU were consulted in this phase, and the interview guide was revised accordingly. The final interview guide is enclosed in Appendix D.

3.3.5. Conducting the semi-structured interviews

The four semi-structured interviews were conducted in February 2021 with dairy farmers who converted from conventional farming to organic farming between 2015 and 2017. The interviews lasted between 30 minutes and 1 hour 20 minutes. All interviews were conducted and transcribed in Danish; hence all quotations have been translated into English.

When initially contacting the farmers, the farmers chose, due to Covid-19, whether the interview should be in-person, as a video conference, or as a telephone call, thus choosing the type of interview they felt most comfortable and giving them the best possible experience in the given circumstances. Two interviews were conducted as a video conference, one as a telephone call, and one in person. The in-person interview was carried out at the farm, which allowed for experiencing the physical circumstances and atmosphere. Before and afterward the in-person interview, I made small talk with the interviewee, his family, and a couple of employees, setting the stage of his lifeworld and loosening the atmosphere. The interviews conducted as a video conference and telephone did not to the same degree invite for small talk, and the interview became slightly more formal and ‘straight to business’. On the other hand, the video conference and telephone interview were more

flexible regarding the interviewees' preferred time as they could more freely choose a time that fitted their schedule. Comparable to the in-person interview, the video conferences allowed the interviewer and interviewee to read and respond to one another's body language (Nehls et al., 2014, p. 146). The video conferences worked well in the given circumstances, and the farmers were engaged and interested in the subject, making the interview situation smooth and beneficial. Regarding the type of interviews, several studies have found the outcome of video conference interviews to equal the quality of in-person interviews (Deakin & Wakefield, 2014; Dowling, 2012). The telephone interview was the shortest interview, which might be caused by the fact that the telephone interviews, to a lesser degree, invite for an informal and longer interaction (Brinkmann, 2014, p. 290). However, the dynamic of the interview was good, and the farmer was engaged and interested in the subject.

3.3.6. Interview ethics

All interviewees are anonymized throughout the thesis in order to respect the interviewees' privacy. While the interviews did not concern any sensitive personal information, anonymization limits the risk that interviewees face any consequences of their participation. However, with this decision follows a responsibility to ensure that reported information is correct, as the interviewees' anonymity may act as an alibi for the researcher (Kvale & Brinkmann, 2014, p. 118). It was agreed upon with the interviewees that if there were any uncertainties or confusion, they would be willing to provide clarifications and answer follow-up questions to avoid misquotation.

When initially requesting an interview and at the beginning of each interview, all interviewees were briefed about the thesis's purpose, anonymity, use of the interview, and my background. During interviews, the interviewees were asked follow-up questions to avoid misunderstandings, and towards the end of the interview, the interviewees were asked whether they felt that anything had been forgotten or if other factors had affected their decision (Kvale & Brinkmann, 2014, p. 116). Before formally beginning the interviews, the interviewees orally consented that the interview would be recorded, transcribed, and quoted, and analyzed in this thesis.

3.3.7. Transcription, coding, and analysis of interviews

All interviews were recorded and transcribed to ease the coding and analysis. As the interviews are not used for conversation or language analysis, all ‘empty words’, such as “hm” and “øh”, were left out of transcripts. Likewise, breaks or sighs were left out. However, the transcripts were not written in strictly written language, meaning that grammatical errors or ‘wordy’ sentences were reported as phrased by the interviewees. Hence, the transcriptions are an intermediate between spoken language and the correct written language⁴. This procedure was chosen to ease the reading, coding, and analysis of the interviews while remaining true to the interviewees' statements as described by Poulsen (2016, p. 88).

The coding of the interviews was conducted similarly to the coding used in the literature review (see chapter 3.2.4). The coding was also carried out in the software NVivo, and the coding categories were also based on the framework of Mills et al. (2017), and sub-categories were added to all categories to ease the analysis⁵. The categories allowed for easier comparisons of the interviewees' statements and later for comparison to the literature review findings.

⁴ Transcriptions (.docx) can be handed over by request

⁵ Coded transcriptions (.QSR) can be handed over by request

4. Organic farming in the EU and Denmark

This section briefly introduces the current state of organic farming in the EU and Denmark to create a contextual setting for the following analyses and discussions. The section includes an introduction to the Common Agricultural Policy, the development in the organically farmed area, and the market conditions for organic milk. Current policy goals and initiatives in both the EU and Denmark will also briefly be introduced. While these things may not be vastly important for the thesis's analyses, it is the context and historical background in which farmers act.

In 2005, the organic area covered 6,5 million hectares of the European agricultural area, and within the last ten years, the organic area has grown by 70 % (European Commission, 2019, pp. 2–3). In 2019 14,6 million hectares in Europe were under organic management, which equals 8,1 % of the total agricultural area. In Denmark, 10,9 % of the agricultural area was managed organically in 2019, which is above the average for Europe; however, the organic share is 26,1 % in Austria, 22,3 % in Estonia, and 20,4 % in Sweden. In 2019 Denmark ranked 10th in organic share (IFOAM, n.d.-a). In Europe, the Common Agricultural Policy (CAP) has played an essential role in developing the European agricultural landscape. In 1962 the CAP was first agreed upon to ensure availability and access to food in the EU. Direct payments to producers were first introduced in 1992. After 2003, the farmers received direct payments, provided that they adhered to a set of standards related to animal welfare, environmental protection, and food security. The overall goal of the CAP is to enhance rural development, sustainable agriculture, and stable agricultural production (European Commission, n.d.). The CAP is built on two main pillars. The first pillar contains a set of direct payments consisting of a basic payment per hectare, a 'greening' payment, payment to young farmers and smallholders, payment to farmers in unfavorable areas, amongst other direct payment arrangements (European Parliament, n.d.-a). The second pillar is the EU's rural development policy, which purpose is to generate agricultural competitiveness, ensure sustainable management of natural resources and improve and sustain rural economy and communities. Subsidies for organic farming and organic conversion fall within the second pillar. The funds are allocated to the nation-states, which redistributes the funds to eligible farmers and rural development projects (European Parliament, n.d.-b). In Denmark, the Danish Agricultural Agency allocate

different types of organic payments but most importantly to this thesis is the basic organic payment of 870 DKK per hectare, which runs in five-year terms and is renewed after five years, and the organic conversion payment of 1200 DKK per hectare in the first two years after conversion (Landbrugsstyrelsen, n.d.).

In Denmark, the organically managed area rose from 182.930 hectares managed by 2603 farms in 2012 to 310.210 hectares managed by 4121 farms in 2019. Similarly, the number of cows in Danish agricultural production rose from 183.262 to 224.348 in the same period. The increase of organic area and number of organic cows also reflects in the increase of produced organic milk, which has increased since 1996; however, there has been a sharp increase between 2017 and 2019 (Danmarks Statistik, n.d.). The market share of organic milk is around 35 percent, which is relatively high compared to the market share of other organic products (Christensen & Sandøe, 2018, p. 21).

5. Driving organic change: a literature review

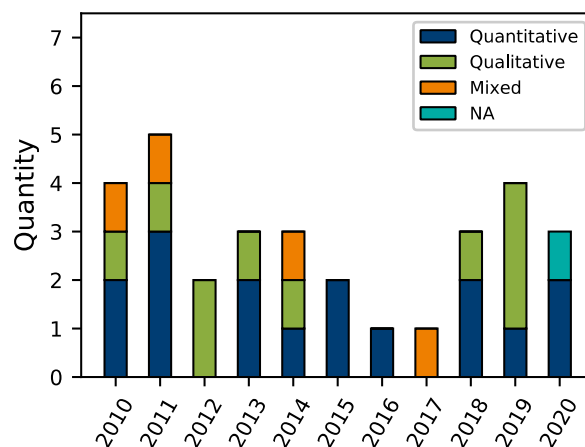
The following chapter consists of a literature review of papers dealing with behavioral change and decision-making regarding conversion to organic farming in Europe. The two theoretical frameworks structure the review regarding determinants of change and levels of influence (see chapter 2). First, the reviewed papers are presented descriptively. Second, the presence of the three determinants: farmers' ability, engagement, and willingness to adopt, is presented and analyzed. Third, factors at the three levels of influence, which affect willingness, are outlined and analyzed.

5.1. Introducing the reviewed literature

For the subsequent literature review, 31 papers have met the selection criteria, as described in chapter 3.2.3, and have been reviewed. All papers are published between 2010-2020 and are based and research conducted in Europe.

All years between 2010-2020 are represented in the reviewed papers (see Figure 5). Five papers were published in 2011, making it the most represented year. Four papers were published in respectively 2010 and 2019. Three papers were published in 2013, 2014, 2018, and 2020. Two of the reviewed papers were published in 2012 and 2015, and only one paper was published in 2016 and 2017.

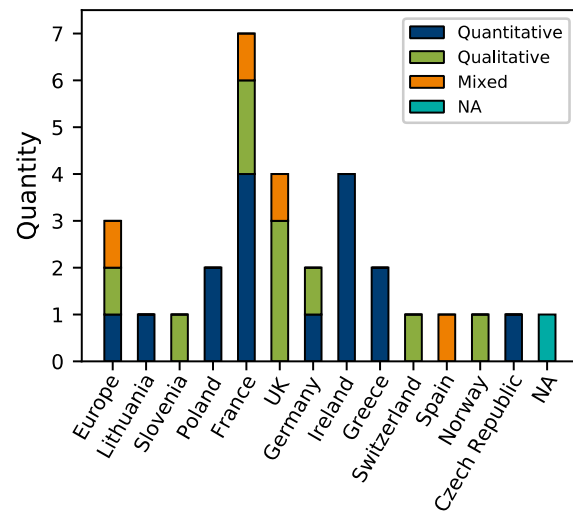
Figure 5
Distribution of papers according to year of publication



Note. Layered by methodology

While all reviewed papers are based on research conducted within Europe, the geographical distribution is still important to note (see Figure 6). Seven studies were conducted in France (Allaire et al., 2015; Bouttes et al., 2019; Lamine, 2011; Lamine et al., 2014; Mzoughi, 2011; Xu et al., 2018, 2020), making it the by far most represented country. Four of the reviewed papers are based on research conducted in the UK (Ilbery & Maye, 2011; James & Brown, 2019; Kings & Ilbery, 2010;

Figure 6
Distribution of papers according to place of research

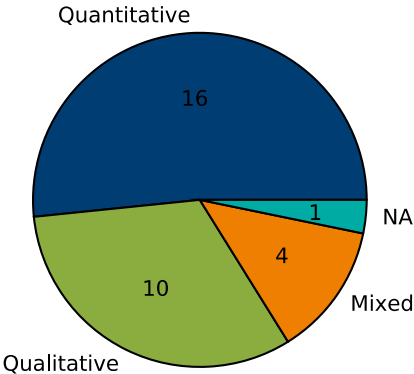


Note. Layered by methodology

Sutherland & Darnhofer, 2012), and three papers were based on a European study (Brzezina et al., 2017; Konstantinidis, 2016; Sahm et al., 2013). Four papers are based on studies in Ireland (Läpple, 2013; Läpple & Kelley, 2013, 2015; Läpple & Rensburg, 2011), and it should be noted that Doris Läpple has written all four Irish papers. Two papers are based on research from respectively Greece (Alexopoulos et al., 2010; Papadopoulos et al., 2018), Germany (Best, 2010; Siepmann & Nicholas, 2018), and Poland (Chmielinski et al., 2019; Kociszewski et al., 2020). Lastly, one paper is based on research from respectively from Lithuania (Kaufmann et al., 2011), the Czech Republic (Pechrová, 2014), Switzerland (Home et al., 2019), Spain (Kallas et al., 2010), Norway (Koesling et al., 2012), and Slovenia (Bartulović & Kozorog, 2014). The Rigolot (2020) paper is a comment to James & Brown (2019) and is not based on research conducted in a specific location.

As shown in Figure 5 and Figure 6, the methodologies used are quite scattered. However, in Figure 6, it is evident that in all the Irish, Greek, and Polish studies, quantitative methodologies have been applied. Conversely, qualitative or mixed methods have been applied in all four UK studies. As shown in Figure 7, sixteen papers used a quantitative methodology, and ten articles used a qualitative methodology. Allaire et al. (2015) conducted a territorial analysis of the distribution of organic farming, which is categorized as quantitative analysis. Sahm et al. (2013) conducted a literature review with a qualitative approach. Four papers used mixed methods applying both qualitative and quantitative methods. The Rigolot (2020) comment is based on the author’s research experiences; hence no specific methodology was used in this publication.

Figure 7
Frequency of methodologies in the reviewed papers



During reading, coding, and analysis of articles, numerous factors were found to be important for the uptake of organic farming practices. To provide an overview of recurring and noticeable factors, these have been summarized in Table 1 below.

Table 1*Noticeable findings of the literature review*

| Category | Description | Effect on adoption | No. of articles | Articles |
|----------------------------------|--|--------------------|-----------------|--|
| Ability | | | | |
| Subsidies | Direct payments of any kind | + | 8 | Bartulović & Kozorog (2014), Home et al. (2019), James & Brown (2019), Siepmann & Nicholas (2018), Allaire (2015), Bouttes et al. (2019), Koesling et al. (2012), Pechrová et al. (2014) |
| Additional costs | Costs and investments related to the conversion | - | 4 | Alexopoulos et al. (2010), Best (2010), Siepmann & Nicholas (2018), Sutherland & Darnhofer (2012) |
| Strict legislation | Organic legislation which farmers must adhere to | - | 3 | Kociszewski et al. (2020), Siepmann & Nicholas (2018), Koesling et al. (2012) |
| Political climate | Political debate and interventions related to agriculture | +/- | 8 | Brzezina et al. (2017), James & Brown (2019), Kings & Ilbery (2010), Rigolot (2020), Bouttes et al. (2019), Kallas et al. (2010), Koesling et al. (2012), Lamine et al. (2014) |
| Engagement | | | | |
| Use of advisory services | Use of public and/or private agricultural advisory services | + | 6 | Kaufmann et al. (2011), Kociszewski et al. (2020), Läßle (2013), Allaire et al. (2015), Alexopoulos et al. (2010), Bouttes et al. (2019) |
| Local cooperation | Cooperation with local community/farmers | + | 3 | Allaire et al. (2015), Bartulović & Kozorog (2014), Lamine (2011) |
| Alternative marketing strategies | Marketing outlets such as direct marketing, farmers markets, and barn sales | + | 5 | Ilbery & Maye (2011), Kociszewski et al. (2020), Sutherland & Darnhofer (2012), Siepmann & Nicholas (2018), Lamine (2011) |
| Supportive network | Networks with organizations, non-farmers, and farmers | + | 7 | Alexopoulos et al. (2010), James & Brown (2019), Siepmann & Nicholas (2018), Xu et al. (2018), Koesling et al. (2012), Läßle & Kelley (2015), Lamine (2011) |
| Critical information seeking | Active and critical engagement with information, e.g., magazines and newsletters | + | 4 | Kaufmann et al. (2011), Kings & Ilbery (2010), Läßle (2013), Läßle & Rensburg (2011) |
| Willingness | | | | |
| Positive economic prospects | Perceived positive economic effects | + | 4 | Brzezina et al. (2017), Bartulović & Kozorog (2014), Kaufmann et al. (2011), Läßle & Kelley (2013) |
| Distrust economic stability | Perceived economic disability | - | 2 | Home et al. (2019), Kociszewski et al. (2020) |
| Ideology | Attitudes towards and beliefs about organic farming and farming in general | +/- | 7 | Papadopoulos et al. (2018), Kings & Ilbery (2010), Brzezina et al. (2017), Bartulović & Kozorog (2014), Koesling et al. (2012), Läßle & Kelley (2013), Lamine (2011) |
| Logistics | Logistic related to production and sales, e.g., buying inputs, physical access, delivery to processors | +/- | 3 | Bartulović & Kozorog (2014), Ilbery & Maye (2011), Lamine (2011) |
| Less risk-averse | Farmers' willingness to take risks related to conversion | + | 7 | Läßle (2013), Läßle & Rensburg (2011), Sutherland & Darnhofer (2012), Bouttes et al. (2019), Lamine et al. (2014), Läßle & Kelley (2015), Kallas et al. (2010) |
| Farm-level influences | | | | |
| Younger age | Organic farmers are younger than conventional | + | 7 | Kaufmann et al. (2011), Kociszewski et al. (2020), Läßle (2013), Läßle & Rensburg (2011), Papadopoulos et al. (2018), Kallas et al. (2010), Läßle & Kelley (2015) |
| Older age | Organic farmers are older than conventional | + | 2 | Alexopoulos et al. (2010), Pechrová (2014) |
| Larger farms | Manage larger farms than conventional | + | 4 | Kaufmann et al. (2011), Kociszewski et al. (2020), Konstantinidis (2016), Alexopoulos et al. (2010) |
| Smaller farms | Manage smaller farms than conventional | + | 6 | Läßle (2013), Läßle and Rensburg (2011), Best (2010), Xu et al. (2018, 2020), Kallas et al. (2010), Pechrová (2014) |
| Farm location | Farm location encourage uptake of organic farming | + | 3 | Bartulović & Kozorog (2014), Chmielinski et al. (2019), Kallas et al. (2010) |

| | | | | |
|-------------------------------|---|-----|----|---|
| Appearance | The appearance of fields after ceasing to spray | - | 3 | Home et al. (2019), Sutherland & Darnhofer (2012), Koesling et al. (2012) |
| Professional challenge | New challenges and acquiring new skills | + | 3 | Siepmann & Nicholas (2018), James & Brown (2019), Bouttes et al. (2019) |
| Utility perceptions | Perceptions of the utility and productivity of organic systems | +/- | 5 | Best (2010), Kaufmann et al. (2011), Brzezina et al. (2017), Xu et al. (2018), Sutherland & Darnhofer (2012) |
| Farm economy considerations | Perceived positive economic effects related to conversion | + | 10 | Bartulović & Kozorog (2014), Ilbery & Maye (2011), Sutherland & Darnhofer (2012), Best (2010), Sahm et al. (2013), Kallas et al. (2010), Koesling et al. (2012), Lamine et al. (2014), Läpple & Kelley (2013), Pechrová (2014). |
| Environmental concern | The farmers' environmental awareness and related adaptability | + | 13 | Kings & Ilbery (2010), Kociszewski et al. (2020), Läpple (2013), Läpple & Rensburg (2011), Siepmann & Nicholas (2018), Sutherland & Darnhofer (2012), Bartulović & Kozorog (2014), Xu et al. (2018), Best (2010), Bouttes et al. (2019), Kallas et al. (2010), Läpple & Kelley (2015), Mzoughi (2011) |
| Ideology and attitude | Personal ideology, beliefs, and attitude toward organic farming and its benefits | +/- | 10 | Home et al. (2019), James & Brown (2019), Siepmann & Nicholas (2018), Kings & Ilbery (2010), Sutherland & Darnhofer (2012), Kallas et al. (2010), Koesling et al. (2012), Läpple & Kelley (2013), Mzoughi (2011), Lamine (2011) |
| Community-level influences | | | | |
| Value chain integration | Collaboration with various actors along the value chain such as supermarkets, consumers, and processors | +/- | 6 | Allaire et al. (2015), Bartulović & Kozorog (2014), Konstantinidis (2016), Sahm et al. (2013), Lamine et al. (2014), Lamine (2011) |
| Supportive farmer networks | Supportive networks with farmers, including farmer organizations and informal farmer networks | + | 16 | Alexopoulos et al. (2010), Best (2010), Siepmann & Nicholas (2018), James & Brown (2019), Sutherland & Darnhofer (2012), Kaufmann et al. (2011), Läpple (2013), Läpple & Rensburg (2011), Xu et al. (2018; 2020), Bartulović & Kozorog (2014), Rigolot (2020), Bouttes et al. (2019), Lamine et al. (2014), Mzoughi (2011), Lamine (2011) |
| Lack of farmer networks | Lack of networks with other farmers | - | 4 | Alexopoulos et al. (2010), Siepmann & Nicholas (2018), Koesling et al. (2012), Läpple & Kelley (2015) |
| Supportive neighbors | Support from neighbors, both non-farmers and farmers | + | 8 | Allaire et al. (2015), Xu et al. (2020), Home et al. (2019), Bartulović & Kozorog (2014), Sutherland & Darnhofer (2012), Bouttes et al. (2019), Läpple & Kelley (2015), Lamine (2011) |
| Unsupportive neighbors | Lack of support and/or critique from neighbors | - | 5 | Kings & Ilbery (2010), Home et al. (2019), Bartulović & Kozorog (2014), Sutherland & Darnhofer (2012), Koesling et al. (2012) |
| Societal-level influences | | | | |
| Price premiums | Higher prices on organic products than conventional products | + | 6 | Alexopoulos et al. (2010), Ilbery & Maye (2011), Bartulović & Kozorog (2014), Best (2010), Bouttes et al. (2019), Koesling et al. (2012) |
| Doubts about market prospects | Distrust instability of the organic market | - | 10 | Siepmann & Nicholas (2018), Kaufmann et al. (2011), Kociszewski et al. (2020), Papadopoulos et al. (2018), Läpple (2013), Läpple & Rensburg (2011), Sahm et al. (2013), Home et al. (2019), Brzezina et al. (2017), Koesling et al. (2012) |
| Subsidies | Direct payments of any kind | + | 10 | James & Brown (2019), Allaire et al. (2015), Bartulović & Kozorog (2014), Home et al. (2019), Papadopoulos et al. (2018), Brzezina et al. (2017), Läpple (2013), Bouttes et al. (2019), Koesling et al. (2012), Pechrová (2014) |
| Bureaucracy | Bureaucracy related to, e.g., organic control or application for subsidies | - | 3 | Kaufmann et al. (2011), Kociszewski et al. (2020), Chmielinski et al. (2019) |
| Distrust in political climate | Dissatisfaction with agricultural policies and distrust in political stability | - | 7 | James & Brown (2019), Kings & Ilbery (2010), Home et al. (2019), Sahm et al. (2013), Siepmann & Nicholas (2018), Sutherland & Darnhofer (2012), Koesling et al. (2012) |

| | | | | |
|--|---|---|---|---|
| Collaboration with public institutions | Various types of collaboration with public institutions | + | 3 | Bartulović & Kozorog (2014), Lamine et al. (2014), Kallas et al. (2010) |
|--|---|---|---|---|

Note. Regarding ‘effect on adoption’. + indicates that the factor is a driver of organic conversion, while the - indicates that the factor is a barrier

5.2. Determinants of change

The following section analyzes the farmers' ability, engagement, and willingness to convert to organic farming as found in the literature. The section is structured according to the three determinants: farmers' *ability*, *engagement*, and *willingness*, which are further divided into sub-sections to keep a sense of perspective.

5.2.1. Ability to convert to organic farming

As the body of literature is based upon research conducted in different countries, the farmers' abilities to adopt organic farming are heterogeneous and depend on the specific context. However, presented below are *subsidies*, *farm structure*, and *legislation*, which are the most recurring themes of the farmers' ability to convert found in the reviewed papers (see table 1).

5.2.1.1. Subsidies

Eight papers mentioned subsidies as important for the farmers' ability to convert to organic farming (see table 1). In a pre-alpine Slovenian village, it was found that subsidies played a crucial role in the ability to adopt organic farming, as subsidies allowed the farmers to escape a difficult economic situation (Bartulović & Kozorog, 2014, pp. 94–95). When discussing economic imperatives as the primary driver of conversion, one farmer said that: “(...) [farmers] who claim differently are lying” (Bartulović & Kozorog, 2014, p. 94). Similarly, some Swiss farmers also considered subsidies as very important for farmers' abilities to convert and remain organic (Home et al., 2019, p. 577). This consideration corresponds to James & Brown's (2019) observations that subsidies were a window of opportunity, which allowed farmers to cease conventional production (p. 141), a quite similar description to the one presented by Bartulović & Kozorog (2014). Nonetheless, in Greece and Lithuania, subsidies may limit the ability to convert since the timing of payment, end of payments, or associated bureaucracy were considered a barrier for adoption (Alexopoulos et al., 2010, p. 1088; Kaufmann et al., 2011, p. 533). Some authors argued that subsidies need to be altered to enhance farmers' ability to convert in the future. Siepmann & Nicholas (2018) suggested increasing subsidy levels and include farmers in policy processes (p. 13), and Allaire et al. (2015) argued that future subsidies must consider local contexts, as the ability to convert depends on the spatial setting (p.79).

5.2.1.2. Physical settings and additional costs

Farm structure or additional costs are described as essential factors to the ability to convert, or lack thereof, in several papers. Regarding farm structure, it was especially the farms' productivity level that was found to be important. In France, small and large farms converted the most; however,

productivity levels also influenced farmers' decision-making process (Xu et al., 2018, pp. 15–16), and in the Czech Republic, efficient farms were most likely to convert (Pechrová, 2014, p. 117). Bouttes et al. (2019) found that French farmers in unfavorable areas considered themselves unable to continue conventional farming due to competitive pressures (p. 238). Along similar lines, Sahm et al. (2013) found that production constraints due to lack of agricultural land led some farmers to revert to conventional production (p. 272), and productivity constraints led some British organic farmers to reassess their perceptions of 'good farming' (Sutherland & Darnhofer, 2012, p. 238). Konstantinidis (2016) found that organic farms in the EU tend to be larger than conventional farms, which the author attributed to a lack of marketing options for small farms (p. 188). However, Chmielinski et al. (2019) found that organic farms tend to be smaller as it eases conversion (p. 1363). Several articles found that if additional cost related to conversion was covered, it enabled the farmers to convert and remain organic (Alexopoulos et al., 2010, p. 1088; Best, 2010, p. 460; Siepmann & Nicholas, 2018, p. 13; Sutherland & Darnhofer, 2012, p. 236). Best (2010) did, however, point to that lack of coverage of additional cost may be compensated by strong environmental concern (p. 460).

5.2.1.3. *Legislations and political climate*

Three articles mentioned legislation, and eight papers mentioned the political climate as enablers or disablers for conversion to organic farming (see table 1). Strict legislation and bureaucracy were described as a barrier to the farmers' ability to convert and remain organic (Kociszewski et al., 2020, pp. 14–15; Koesling et al., 2012, p. 112; Siepmann & Nicholas, 2018, pp. 11–12). Furthermore, the political climate was also crucial to the uptake of organic farming, but it may be either favorable, unfavorable, or uncertain and hence affect farmers' ability to convert (Brzezina et al., 2017, pp. 15–16; James & Brown, 2019, p. 145; Kings & Ilbery, 2010, p. 445). Other authors argued that farmers should be included in the political sphere since it may foster policies that improve the ability for conversion (Kings & Ilbery, 2010, p. 445; Rigolot, 2020, pp. 697–698).

5.2.2. *Farmers' engagement*

As shown in table 1, the most prominent types of farmers' engagement in the literature regard *advisory services and technical support*, *interaction with actors within the supply chain*, and *social network*. Besides these three themes, several articles found that organic farmers tend to engage actively and critically in information seeking (Kaufmann et al., 2011, p. 537; Kings & Ilbery, 2010, p. 443; Läßle, 2013, p. 335; Läßle & Kelley, 2015, p. 330; Läßle & Rensburg, 2011, p. 1410).

5.2.2.1. *Advice and technical support*

The farmers' engagement with advisory services and technical support was referred to as important to the conversion process by six papers. In Lithuania, organic farmers used private on-farm training sessions and sought advice from other farmers more than conventional farmers (Kaufmann et al., 2011, pp. 531–532). Likewise, both organic Polish and Irish farmers engaged more with advisory services than conventional farmers, which may help overcome conversion barriers (Kociszewski et al., 2020, pp. 12, 15; Läpple, 2013, p. 333). Amongst interviewed French farmers, the organic advisory services were assessed as being of high quality and essential in the conversion process (Bouttes et al., 2019, p. 241). Allaire et al. (2015) noted that the spatial distribution of organic farming in France depends on the availability of local advisory services (p. 76), and in Greece and Norway, lack of access to technical advice were found to influence farmers' decision to revert to conventional farming (Alexopoulos et al., 2010, p. 1088; Koesling et al., 2012, p. 109) (p. 1088). Generally, the literature found that farmers' engagement with advisory services plays a vital role during the decision-making process and the conversion to organic farming.

5.2.2.2. *Interaction with actors within the supply chain*

Engagement with other actors within the supply chain, including local cooperation and alternative marketing strategies, was also highlighted as important during and after the conversion process. In France and Slovenia, it was found that cooperation with other local farmers was important for uptake of organic farming (Allaire et al., 2015, p. 76; Bartulović & Kozorog, 2014, p. 89). Other papers pointed to that organic farmers interact differently with marketing opportunities compared to conventional farmers. Lamine et al. (2014) found that organic farmers in France interact more with various marketing networks consisting of actors across the levels of the supply chain (p. 433). Another study exemplified how a farmer's interaction with actors within the value chain caused him to join a box scheme and then convert to organic farming (Lamine, 2011, p. 213). Ilbery & Maye (2011) found that most organic producers preferred to sell most of their produce through one marketing channel; however, only four of 22 interviewees did so, meaning they used various marketing channels (p. 37). It was also found that amongst Polish and UK farmers, that compared to conventional farmers, organic farmers were more prone to use alternative marketing strategies, such as direct marketing, leading to closer interaction with consumers (Kociszewski et al., 2020, p. 12; Sutherland & Darnhofer, 2012, p. 236). This consumer contact was also found amongst organic German Winegrowers who 'sell a story', implying a closer interaction with the consumers (Siepmann & Nicholas, 2018, p. 12).

5.2.2.3. *Social networks*

The farmers' engagement with social networks and organizational affiliations was also an important factor in converting and remaining organic and was mentioned by seven articles. Several papers found social networks and interactions with other farmers, e.g., neighbors or through organizational affiliation, to be crucial to the decision to convert, as one's social network may encourage and inspire to convert to organic farming. This was found by Alexopoulos et al. (2010, p. 1090), James & Brown (2019, p. 141), Siepmann & Nicholas (2018, pp. 12–13), Koesling et al. (2012, p. 111), Läßle & Kelley (2015, p. 330) and Xu et al. (2018, p. 26), which means that farmers engage in social learning processes with their peers, which may encourage conversion. Alexopoulos et al. (2010) further emphasized that a lack of supportive social networks positively related to reconversions amongst Greek farmers (p. 1090).

5.2.3. *Willingness to adopt*

Mills et al. (2017) described that the farmers' willingness to adopt an alternative practice is the most difficult of the three determinants to affect. In the literature, the farmers' willingness to adopt organic farming was impacted simultaneously by multiple factors, the most recurring ones being *economic prospects* and *ideology and attitude* (see table 1). Several papers also highlighted willingness to take risks as important (Bouttes et al., 2019, p. 239; Lamine et al., 2014, pp. 430–431; Läßle, 2013, p. 335; Läßle & Kelley, 2015, pp. 330–331; Läßle & Rensburg, 2011, p. 1410; Sutherland & Darnhofer, 2012, p. 238). The farmers' physical settings and changes in physical management were also found to influence farmers' willingness to convert (Bartulović & Kozorog, 2014, p. 91; Ilbery & Maye, 2011, p. 38).

5.2.3.1. *Economic prospects*

The economic prospects related to organic conversion were found to be essential to the farmers' willingness to adopt organic practices by several papers. Brzezina et al. (2017) pointed out that late adopters of organic farming in the EU tend to be more profit-oriented than earlier adopters, meaning that if organic farming has positive economic prospects, farmers tend to be more willing to adopt organic farming (pp. 16-17). This finding is supported by the findings from a Slovenian village, where farmers were willing to adopt organic farming due to market options, despite not believing that organic products are of better quality (Bartulović & Kozorog, 2014, p. 97). Surveyed Lithuanian farmers were also more willing to adopt organic farming if the value of their land were likely to increase as a result of conversion (Kaufmann et al., 2011, pp. 537, 539). Amongst Irish dairy farmers

with a positive attitude towards organic farming, the economic prospect was also a driver of conversion (Läpple & Kelley, 2013, p. 15). However, amongst Swiss and Polish farmers, a lack of trust in the stability of agricultural policies, and thereby the subsidy schemes, resulted in less willingness to take the economic risk associated with conversion (Home et al., 2019, p. 577; Kociszewski et al., 2020, pp. 13–14).

5.2.3.2. *Ideology and environmental attitude*

The farmers' ideology and environmental attitudes were highlighted by seven papers as important for the farmers' willingness to adopt organic farming (see table 1). Environmental attitudes have been found to influence willingness to convert to organic farming in Greece (Papadopoulos et al., 2018, pp. 19–20), Norway (Koesling et al., 2012, p. 112), and Ireland (Läpple & Kelley, 2013, pp. 15–16). In Central-southern England, organic farmers tended to participate more in conversation work, indicating that environmental attitude correlated with adopting organic farming (Kings & Ilbery, 2010, p. 443). Conversely, an EU study found a devaluation in environmental attitude, meaning that the farmers are becoming less dedicated to the environmental ideal as presented in the organic principles (Brzezina et al., 2017, pp. 16–17). Some Slovenian farmers perceived organic farming as neither better nor worse compared to their previous traditional practices, which increased their willingness to adopt organic farming, as they did not perceive it as a significant change, although they did employ new techniques and innovations (Bartulović & Kozorog, 2014, p. 92). In a French study, the farmers' decision pathways were described as either rapid, where the farmers suddenly and quickly decided to convert, or progressive, where the farmer made a slower transition towards organic farming. Hence, the farmers' farmer ideology changes at different speeds affecting the pace of the uptake of organic farming (Lamine, 2011, p. 212).

5.3. Levels of influence

The following sub-chapter is guided by the second framework presented by Mills et al. (2017) regarding levels of influence affecting the farmers' willingness to adopt an alternative practice. First, farm-level influences are presented, then community-level influences, and finally, societal-level influences.

5.3.1. Farm-level of influence

A variety of factors at farm-level were present in the literature, the most common factors being *farm and farmer characteristics, physical settings and productivity, farm economy, environmental concern, and ideology and attitude* (see table 1).

5.3.1.1. *Farm and farmer characteristics*

Various demographic factors and production types were highlighted as important determinants for conversion, with variation regarding their effects. The age of the farmers was found to be important by nine papers. Organic farmers were found to be younger in Lithuania (Kaufmann et al., 2011, p. 531), Poland (Kociszewski et al., 2020, p. 13), Ireland (Läpple, 2013; Läpple & Rensburg, 2011), Spain (Kallas et al., 2010, p. 420) and Greece (Papadopoulos et al., 2018, p. 18). However, contrary to the findings of Papadopoulos et al. (2018), Alexopoulos et al. (2010) found amongst surveyed farmers in Western Greece that organic farmers were older than non-converters (pp. 1087-1088). The same was found in the Czech Republic (Pechrová, 2014, p. 118). In addition to the age differences, late adopters were found to be significantly older than pioneers in Ireland, meaning that farmers' age increased during the diffusion process (Läpple & Rensburg, 2011, p. 1410). Contrary to the studies mentioned above, age was an insignificant variable regarding the adoption of organic farming amongst farmers in Western Germany (Best, 2010, p. 462) and France (Mzoughi, 2011, p. 1541). Hence, whether farmers' age was an important factor may depend on the timing of the conducted research and the national and regional context.

The size of the farms was highlighted as an important factor at farm-level by ten papers. Some studies claimed that adopters tend to manage larger farms than conventional farmers; this was found in Lithuania (Kaufmann et al., 2011, p. 531), Poland (Kociszewski et al., 2020, p. 7), and in a study of the EU (Konstantinidis, 2016, pp. 179–180). Moreover, larger farm size was significantly related to Greek organic farmers' intentions to remain organic (Alexopoulos et al., 2010, pp. 1087–1088). On the contrary, several other studies found that organic farms tend to be smaller than conventional farms, this was found in Ireland (Läpple, 2013, p. 332; Läpple & Rensburg, 2011, p. 1410), Western Germany but only of minor significance (Best, 2010, pp. 461–462), Poland (Chmielinski et al., 2019, p. 1361), Spain (Kallas et al., 2010, p. 420) and France (Xu et al., 2020, p. 238). Other studies found farm size to be unimportant to the decision to convert (Läpple & Kelley, 2015, p. 328; Siepmann & Nicholas, 2018, p. 11).

5.3.1.2. *Physical setting and productivity*

Biophysical factors and productivity level have also been found to be important factors. In two pre-alpine Slovenian villages, the farmers faced heterogeneous biophysical challenges to which they adjusted their practices depending on the micro-territory they were located within (Bartulović & Kozorog, 2014, p. 98). Unfavorable agricultural areas were also found to be a driver for adoption of

organic farming in Poland (Chmielinski et al., 2019, p. 1364) and in Spain (Kallas et al., 2010, p. 419). Other paper's considerations regarding biophysical focused mainly on weeds, pests, diseases, and quality of soils. Some interviewed Swiss farmers emphasized that they were surprised by the amount of weeds that appeared after ceasing to spray the fields. However, it was not a productivity issue but rather an appearance issue (Home et al., 2019, p. 575). Reservations about appearances were also found amongst interviewed farmers in England (Sutherland & Darnhofer, 2012, p. 236). Sahm et al. (2013) found that production issues, e.g., weeds, diseases, and pests, were often mentioned in the literature as issues but only played a minor role in most cases of reversion (p. 272). However, both organic and conventional German Winegrowers considered pest and disease control a major barrier for conversion. Nonetheless, other German winegrowers said that such challenges motivated conversion, as it creates a professional challenge due to the more complex production systems (Siepmann & Nicholas, 2018, p. 10). Likewise, organic farmers in Cornwall, England, perceived the increased understanding and agency of soil biology, which came with the conversion to organic farming, as a motivation for the continuation of organic farming (James & Brown, 2019, pp. 139, 142–143). Bouttes et al. (2019) also found amongst French farmers that the increased autonomy and professional challenge were motivating conversion. Further, a wish to be self-sufficient were also a contributing factor (Bouttes et al., 2019, pp. 239–240, 242). Hence, while some articles mentioned that biophysical changes may pose a barrier, other indicate that it was only a minor barrier or that the related professional challenge was even motivational.

The farmers' perceptions of productivity or utility changes related to conversion may also affect the farmers' willingness to adopt organic farming. Two-thirds of conventional German farmers perceived organic farming as having a negative utility compared to conventional farming, and, unsurprisingly, organic farmers perceived organic farming as having the best utility (Best, 2010, p. 459). A similar difference was found in Lithuania, where organic farmers considered organic farming as providing an opportunity for more effective management of the farm (Kaufmann et al., 2011, pp. 533, 537). Brzezina et al. (2017) highlighted how organic farming practices are related to increased labor intensity, which may either be considered a possibility to reduce unemployment in the local community or as a barrier to conversion due to potentially reduced profits (p. 11). In France, small conventional farms were more likely to evaluate organic farming because they are less productive than medium and large farms, hence having a negative subjective norm, meaning that productivity levels were crucial for the decision-making process (Xu et al., 2018, p. 18). Concerning the speed of change, it was found that some farmers made gradual conversions, where the farmers experimented with organic

practices ahead of the formal conversion, which means that the farmers had time to assess and adjust to the consequence of the new practices and decide whether or not organic farming was a viable option (Lamine et al., 2014, pp. 429–430; Sutherland & Darnhofer, 2012, p. 236).

5.3.1.3. *Farm economy*

Economic considerations at the farm-level were described as an important driver or barrier to conversion to organic farming by ten papers. In one of two studied pre-alpine Slovenian villages, the farmers adopted a narrative that organic farming is an effective means to care for future generations, an argument closely related to the economic viability of organic practices (Bartulović & Kozorog, 2014, pp. 95, 99). Similarly, farmers' decision to convert to organic farming has been found to be driven by economic considerations in the UK (Ilbery & Maye, 2011, p. 39; Sutherland & Darnhofer, 2012, p. 239), France (Lamine et al., 2014, p. 431), Ireland (Läpple & Kelley, 2013, p. 16), the Czech Republic (Pechrová, 2014, p. 118) and Spain (Kallas et al., 2010, p. 416). Amongst German farmers, the decision to convert depended on economic as well as environmental considerations. However, the environmental considerations became unimportant if the economic prospects were favorable (Best, 2010, pp. 464–465). In line with these findings, economic issues have been found to be important factors to the decision to revert to organic farming (Koesling et al., 2012, p. 108; Sahm et al., 2013, p. 267). Conversely, personal values were more important to Greek farmers than economic considerations (Papadopoulos et al., 2018, p. 19), and economic prospects drove only 16 % of converted farmers from Central-Southern England, whereas 50% were driven by environmental concern (Kings & Ilbery, 2010, p. 442). Other studies even found that profit-oriented farmers were less likely to convert to organic farming (Läpple & Kelley, 2015, p. 331; Mzoughi, 2011, pp. 1539–1540).

5.3.1.4. *Environmental concern*

Thirteen papers highlighted environmental concern as crucial for the adoption of organic farming (see table 1). Farmers in Central-Southern England pointed to environmental concern as an important driver for the uptake of organic farming (Kings & Ilbery, 2010, p. 442). Similar findings were made in Poland (Kociszewski et al., 2020, p. 14), Ireland (Läpple, 2013, p. 334; Läpple & Kelley, 2015, p. 330; Läpple & Rensburg, 2011, p. 1410), Germany (Siepmann & Nicholas, 2018, p. 10), Mid- and Southern England (Sutherland & Darnhofer, 2012, p. 234), one of the studied Slovenian Villages (Bartulović & Kozorog, 2014, p. 99), Spain (Kallas et al., 2010, p. 420) and France (Bouttes et al., 2019, pp. 242–243; Mzoughi, 2011, p. 1540; Xu et al., 2018, p. 19) where environmental concern was identified as a key motivation for conversion. However, environmental concern was also a driver

to remain conventional for some farmers (Siepmann & Nicholas, 2018, p. 10; Sutherland & Darnhofer, 2012, p. 234). For German farmers, environmental concern affected willingness to convert to organic farming, but the correlation ceased when strong economic incentives were present. Hence, environmental concern was mainly crucial if conversion to organic farming was costly (Best, 2010, p. 460). Brzezina et al. (2017) highlighted how farmers' environmental concern was the primary driver for conversion to organic farming during the origin of the organic movement. These efforts were later economically compensated by consumers, thus creating an economic incentive for further adoption of organic farming (p. 7).

5.3.1.5. *Ideology and attitude*

Ten papers mentioned ideology or attitudes, which are rather abstract concepts and are very context-dependent, as vital to the decision to convert. Amongst Swiss and UK farmers, it was found that organic farmers had to change their agricultural ideology and make an 'internal conversion' before converting the farm (Home et al., 2019, p. 575; James & Brown, 2019, p. 139). A 'pro-organic ideology' was also an important determinant regarding conversion to organic farming amongst German Winegrowers (Siepmann & Nicholas, 2018, p. 10) and Spanish farmers (Kallas et al., 2010, pp. 419–420). Considerations about what 'good farming' practices are have also been found to be influential for decisions regarding organic farming (Koesling et al., 2012, p. 108; Läpple & Kelley, 2015, p. 16). Some papers observed that organic farmers tended to have different attitudes about how farmers should behave. For instance, some organic farmers described that farmers have to 'behave responsibly' (Kings & Ilbery, 2010, p. 443), do the 'right' thing (Mzoughi, 2011, p. 1539), and put more emphasis on the environmental aspects and being a 'good employer' (Sutherland & Darnhofer, 2012, p. 234). This indicates that organic farmers have different attitudes and morals concerns compared to conventional farmers. However, a French paper found that conversion was not a matter of ideology (Bouttes et al., 2019, p. 244). Another French paper found that farmers who converted to organic farming all had antecedent with the practice, e.g., through experimentation at the farm or by talking to other farmers. This familiarity created a smoother and more gradual transition in ideology towards organic farming (Lamine, 2011, p. 216).

5.3.2. *Community-level of influence*

In the following, the factors at community-level are presented and analyzed. *Integration in the value-chain*, *farmer networks*, and *neighbors* were found, as shown in Table 1, to be the most recurring themes at community-level.

5.3.2.1. *Integration in the value-chain*

Collaborations and networks with non-farmers were, by six papers, mentioned as a vital factor influencing willingness to adopt organic farming. Generally, these papers argued that a logistically well-organized value chain and good organizational connections are central. In France, the collaboration between actors throughout the value-chain makes milk production is especially favorable for organic conversion due to a well-organized production, collection, and processing industry (Allaire et al., 2015, p. 78). In another French study, it was found that organic farmers tend to participate in interrelationships across different levels of the value chain, hence interacting with other farmers and alternative market outlets (Lamine et al., 2014, p. 433). The same was found in a pre-alpine Slovenian village, where collaboration and logistical conditions regarding dairy production were important to the motivation to convert, and the farmers' took turns in making cheese to all four dairy farms in the village, hence collaborating along different steps of the value chain (Bartulović & Kozorog, 2014, pp. 89–90). Along similar lines, Konstantinidis (2016) argued that it is essential for especially smallholders to establish networks with actors along the value chain to remain organic. Direct sales, sales agreements with supermarkets, and establishments of farmer-consumer associations are highlighted as important potentials for smallholders to sustain organic production as they may not have similar options for market outlets as large farms (p. 189). Sahm et al. (2013) also found that some European farmers reverted to conventional farming because processors were located far away, and some only accepted large quantities of produce, and thus poor logistics forced them to abandon organic practices (p. 272).

5.3.2.2. *Farmer networks*

Networks with other farmers were a major recurring factor at the community-level, and 18 papers mentioned that supportive networks or lack thereof are important to the decision to convert to organic farming. Alexopoulos et al. (2010) found that farmers with supportive social networks were more likely to convert to organic farming (p. 1088). Similar findings were made by several other articles, which stress the significance of social networks concerning conversion. This was found amongst German farmers (Best, 2010, p. 462; Siepmann & Nicholas, 2018, p. 11), UK farmers (James & Brown, 2019, p. 142; Sutherland & Darnhofer, 2012, p. 236), Lithuanian farmers (Kaufmann et al., 2011, pp. 537, 539), Irish farmers (Läpple, 2013, p. 333; Läpple & Kelley, 2013, p. 16; Läpple & Rensburg, 2011, p. 1411), Norwegian farmers (Koesling et al., 2012, p. 110) and French farmers (Bouttes et al., 2019, p. 243; Lamine, 2011, p. 217; Lamine et al., 2014, p. 432; Mzoughi, 2011, p. 1540; Xu et al., 2018, p. 26, 2020, p. 236). Bouttes et al. (2019) highlighted how organic farmers'

willingness to share previous mistakes and solutions was important to farmers who considered conversion (Bouttes et al., 2019, p. 243). In a pre-alpine Slovenian village, farmers made a successful collective conversion to organic farming, which was based on mutual collective action to create a sustainable community (Bartulović & Kozorog, 2014, p. 99). Regarding getting inspired by other farmers, Rigolot (2020) emphasized the importance of interactions with ‘pioneers’, which can create epiphanies and inspire change (pp. 696–697). In line with these findings, Alexopoulos et al. (2010) found that Greek farmers with unsupportive social networks were more likely to revert from organic farming to conventional farming (p. 1088). Amongst German Winegrowers, disagreement with organic social networks may decrease willingness to convert (Siepmann & Nicholas, 2018, p. 11). Contrary to other UK papers, Ilbery & Maye (2011) found that interviewed farmers in East and West Sussex did not participate in informal networks, such as forums or discussion groups, even though such networks have existed in the past (p. 39). An absence of social networks with other farmers was also found in Poland, where only 12,3% of surveyed organic farmers were a member of a producer group compared to 11,5 % of conventional farmers (Kociszewski et al., 2020, p. 12).

5.3.2.3. *Neighboring farmers and non-farmers*

In extension to the farmers’ social networks with other farmers, the neighboring farmers and non-farmers are highlighted as important to organic conversion in nine papers. Both Allaire et al. (2015) and Xu et al. (2020) conducted research in France, and both indicated that uptake of organic farming practices seems to be affected by a neighborhood effect. The spatiotemporal analysis conducted by Allaire et al. (2015) showed that some areas had a larger concentration of organic farms, indicating a neighborhood effect, which seemed to be driven by the length of time which organic farming has been present in the area, local policy incentives and amount of inter-farm cooperation (Allaire et al., 2015, p. 76). Moreover, the concentration of organic farming was found to be caused by inter-farm interactions, which were strongest in areas with a high amount of extensive production. If there are many small farms in an area, they may, in time, affect medium and large farms to convert to organic farming (Xu et al., 2020, p. 239). These findings correspond to the findings of Lamine (2011, p. 216). Similarly, a Neighborhood effect was found in Ireland, where the presence of organic farms spill over into conventional farmers’ decision-making regarding organic conversion (Läpple & Kelley, 2015, p. 328). Contrary to these findings of neighborhood effects in France, a neighborhood effect was absent amongst farmers in the UK, which was attributed to a lack of inter-farm cooperation (Ilbery & Maye, 2011, p. 39). Bouttes et al. (2019) also found that newly converted organic farmers in France were inspired and motivated by successful organic neighbors despite skepticism from conventional

neighbors. Further, the organic farmers were committed to continuing to be an active part of the local community (Bouttes et al., 2019, pp. 239, 243–244). In Spain, organic farmers were also found to be committed to contributing to rural development in their area (Kallas et al., 2010, p. 420). Regarding interactions with neighboring farms, some Swiss farmers had experienced conflicts with neighboring farmers, who reported negative effects when their newly organic neighbors ceased spraying. These reactions were perceived as a barrier by organic farmers (Home et al., 2019, p. 577). However, while Swiss organic farmers initially felt closely observed by neighbors, many of the farmers still had close collaborations with local conventional farms and experiences mutual respect between organic and conventional farmers (Home et al., 2019, p. 578). Other papers also highlighted that the local community and local consumers may play an important role and may either encourage or discourage changes and maintenance of changes at the farm (Bartulović & Kozorog, 2014, p. 92; Koesling et al., 2012, p. 111; Sutherland & Darnhofer, 2012, p. 238). In Central-Southern England, interviewed farmers highlighted that the large farms bought smaller local farms and increased their farm sizes, hence interacting with neighboring farms in a vastly different way than described above (Kings & Ilbery, 2010, p. 446). Hence, when farmers convert to organic farming or intend to, they participate in a complex interaction with their spatial surroundings, affecting the farmers' willingness to convert to organic farming.

5.3.3. Societal-level of influence

The following sub-chapter deals with factors at societal-level, which affected the farmers' willingness to adopt organic farming. The most prominent themes at societal-level are *market conditions*, *subsidies*, and *political spheres* (see Table 1). The three factors are highly interrelated, and while it may seem forced to divide factors such as subsidies and the political sphere into two different categories, a division is valuable to keep a sense of perspective.

5.3.3.1. Market conditions

The market conditions, such as prices, demand, and market prospects, were a recurring factor concerning adopting and sustaining organic farming, mentioned by a total of 15 papers. Amongst interviewed German winegrowers, most perceived the risk of a decrease in profit to be a significant barrier for conversion (Siepmann & Nicholas, 2018, p. 11). This finding corresponds to findings in several other papers. In Lithuania, conventional farmers considered the development of the organic market as being too slow, thus creating a barrier for conversion (Kaufmann et al., 2011, p. 533). For Polish farmers, price premiums and profitability were not considered incentives but rather barriers to

conversion (Kociszewski et al., 2020, pp. 10–11). Papadopoulos et al. (2018) found amongst surveyed Greek farmers that most respondents did not sell their products as organic and did not consider the demand for organic products as an important driver (p. 10). Amongst Irish farmers, it was found that conventional farmers were more profit-oriented compared to organic farmers, especially organic pioneers (Läpple, 2013, p. 334; Läpple & Rensburg, 2011, p. 1410). In one of two pre-alpine Slovenian villages, organic farmers were not initially financially rewarded, indicating that economic considerations had not been their primary motive for conversion. However, the other village was mainly driven by economic incentives (Bartulović & Kozorog, 2014, pp. 92, 94). Some Swiss farmers were worried about the organic market's stability and believed that the import of cheap products could lead to price pressures (Home et al., 2019, p. 577). According to Brzezina et al. (2017), the Swiss farmers' worries are well-founded, as the organic production in the EU does not meet the market's growth, which may increase import, thus lowering organic prices and incentives for EU farmers to convert to organic farming (pp. 7, 14–15). In the EU, a lack of price premiums to cover increased production costs were suggested as a reason for reversion by several authors (Sahm et al., 2013, p. 267), which has also been found to be a reason for deregistration in Norway (Koesling et al., 2012, p. 107). In France, farmers continuously adapted to the present market conditions, demand from consumers, and competition from producers from other countries; however, the author highlighted that changes must be made within the food systems to maintain and create organic market outlets (Lamine, 2011, p. 217).

Other papers found the market conditions to be a driver of organic conversion. In England and Wales, increased prices were found to be important for the uptake of organic practices (Ilbery & Maye, 2011, p. 35). In France, organic farmers perceived the organic market to be more secure and profitable (Bouttes et al., 2019, pp. 239–240), and some farmers chose organic farming to reduce production costs (Mzoughi, 2011, p. 1539). Greek organic farmers perceived prices on organic products as higher than conventional prices and perceived the organic market as more stable than conventional farmers' perceptions. These factors were also found to be a driver of conversion (Alexopoulos et al., 2010, pp. 1087–1088). This is well in line with the findings in Germany, where environmental consideration showed to be an important motive in cases where economic incentives do not create a clear heuristic motive (Best, 2010, pp. 463–464). Hence, farmers' considerations about the organic market vary considerably, indicating that the market considerations vary depending on the farmers' specific contexts.

5.3.3.2. *Subsidies*

Direct payments, especially related to the CAP, were a recurring theme for the farmers' motivation to convert to organic farming and was mentioned by 13 papers. While this can be considered a determinant important to farmers' ability to convert (see chapter 5.2.1.1.), it can also be considered a factor affecting willingness as the economic prospects because subsidies may motivate conversion. James & Brown (2019) argued that the availability of UK subsidies which are available through the CAP, played a crucial role for the UK farmers as it "(...) fortuitously enabled them to escape the constraints of their conventional systems." (p. 141). In France, Mzoughi (2011) found that organic subsidies did not significantly influence farmers' uptake of organic farming (pp. 1540–1541). However, contrary to this and similar to James & Brown's (2019) argument, Allaire et al. (2015) argued that subsidies is an effective means for generating conversion in France, however, the authors argued that the effectivity highly depends on spatial settings, as conversion may be more expensive in unfavorable areas (p. 78). The finding that subsidies played an influential role for uptake of organic farming corresponds with findings in a pre-alpine Slovenian village (Bartulović & Kozorog, 2014, p. 92), Switzerland (Home et al., 2019, pp. 576–577), Greece (Papadopoulos et al., 2018, pp. 18–19), Norway (Koesling et al., 2012, p. 112), France (Bouttes et al., 2019, p. 239), the Czech Republic (Pechrová, 2014, p. 117), and in EU in general (Brzezina et al., 2017, pp. 8–9). In extension to this, Läßle & Rensburg (2011) argued that the introduction of organic subsidies created a shift towards more profit-oriented organic conversion (p. 1411).

Other papers found that the subsidies may discourage some farmers from converting. Surveyed Lithuanian farmers found the timing of the subsidy payments and the bureaucracy related to the subsidies to be a shortcoming of the subsidies. However, the farmers were satisfied with the payment levels (Kaufmann et al., 2011, p. 533). Similarly, subsidies were an important driver for conversion in Poland. However, the related bureaucracy was considered a barrier to conversion (Kociszewski et al., 2020, p. 15). In another Polish study, direct payments negatively affected the decision to convert to organic farming (Chmielinski et al., 2019, p. 1363). Nonetheless, it was argued that an increase in subsidies was a potential for further dissemination of organic farming (Kociszewski et al., 2020, p. 15; Siepmann & Nicholas, 2018, p. 14). Increased subsidy levels would contribute to preventing reversion due to lack of or low subsidy levels, which was found to be a reason for reversion by Sahm et al. (2013, p. 267) and Alexopoulos et al. (2010, pp. 1089–1090).

5.3.3.3. *Political sphere*

Market conditions and subsidies are inevitably interrelated and overlapping with the political sphere. However, ten papers addressed the political sphere, e.g., regarding political changes, legislation, and organic standards, as crucial for the adoption of organic farming. In one Slovenian pre-alpine village, collaboration with the local public institutions generally encouraged and motivated the farmers to convert to organic farming and preserve the cultural landscape (Bartulović & Kozorog, 2014, p. 90). This finding corresponds to findings in France (Lamine et al., 2014, pp. 433–434) and Spain (Kallas et al., 2010, p. 417). Brzezina et al. (2017) highlighted how legislative measures, such as organic standards, and subsidies have been important drivers of the diffusion of organic farming in the EU (pp. 9–10). Furthermore, it was argued that policymakers should stimulate the market and competitiveness and that it is policy makers' responsibility to create a meaningful balance between the organic principles, rules, and practice, which may then develop organic farming in the EU further (Brzezina et al., 2017, pp. 11, 16). However, many other papers had a more critical approach to the political sphere regarding its impact on conversion to organic farming, and policymakers and policies were found to be unstable and unpredictable by farmers in the UK (James & Brown, 2019, p. 144; Kings & Ilbery, 2010, pp. 444–446), Switzerland (Home et al., 2019, p. 577), Norway (Koesling et al., 2012, pp. 112–113) in EU in general (Sahm et al., 2013, p. 271) and as being too harsh by German Winegrowers (Siepmann & Nicholas, 2018, pp. 11–12). Farmers considered changing ministers to cause instability in the UK, and especially organic farmers did not consider governmental policies to be environmentally friendly (Kings & Ilbery, 2010, p. 444). Furthermore, Sutherland & Darnhofer (2012) argued that clear and easily adoptable policies most often make practices shift consistently with the policies (p. 237). The critique of the political sphere was reflected in some papers' suggestions for changes in the political spheres. The suggestions covered improvement and simplification of legislation and bureaucracy (Kociszewski et al., 2020, p. 15; Sahm et al., 2013, pp. 271, 273), an increased political focus on environmental education of farmers and the public (Kings & Ilbery, 2010, p. 446), policies favoring small organic farms (Konstantinidis, 2016, p. 189), stable and predictable policies (Sahm et al., 2013, p. 273) and ensuring market access and price premiums for organic farmers (Läpple & Rensburg, 2011, p. 1412).

5.4. Summarizing remarks

Based on the analysis above, it is impossible to make any clear-cut conclusion as to what influences farmers' decision to convert to organic farming. Rather, it may be concluded that a multitude of context-dependent factors influences farmers. Along similar lines, the factors that affect the farmers may

also be influenced by the timing of the conducted research and the methodological approach used to study the phenomenon. Hence, while the varying motivation provided by prospects related to the organic market and price premium may be rather surprising, the importance of subsidies was somewhat expected. Nonetheless, the analysis has shown that the farmers interact with a complex interplay of determinants and factors at a different level, influencing the farmers' decision-making regarding conversion and other factors at other levels of influence.

6. Recently converted dairy farmers: four case studies

The following analysis revolves around the four case studies with Danish dairy farmers. The purpose of the analysis is to evaluate how the farmers experience important determinants and factors in practice, not to create any definitive conclusion but rather to gain insight into some farmers' lived experiences. Similar to the literature review, the following analysis of the four cases is structured according to the two frameworks regarding determinants of change and levels of influence. Hence, the following chapter is structured like the following. First, the four farmers are briefly presented. Second, the farmers' ability, engagement, and willingness to adopt organic farming are introduced and evaluated. Third, the factors, as perceived by the farmers, at farm-level, community-level and societal-level are analyzed.

6.1. Introducing the farmers

The following table presents the key characteristics of the four interviewees.

Table 2
Key characteristics of interviewed farmers

| Co de | Pseudo- nym | Date of inter- view | Year of fin- ished con- version | No. of dairy cows | Hectares (owned and leased) | Dairy |
|------------------|------------------------|--------------------------------|--|----------------------------------|--|--------------|
| F1 | Farmer 1 | 19 th Feb, 2021 | Fall of 2017 | 70 | 125 ha | Arla Foods |
| F2 | Farmer 2 | 25 th Feb, 2021 | August 2016 | 330 | 600 ha | Arla Foods |
| F3 | Farmer 3 | 25 th Feb, 2021 | Fall of 2017 | 180 | 250 ha (50 ha un- touched) | Naturmælk |
| F4 | Farmer 4 | 26 th Feb, 2021 | August 2017 | 230 | 300 ha | Arla Foods |

In 2019 the average Danish organic dairy farm had 193 dairy cows and managed 258 hectares (Danmarks Statistik, 2020, p. 18); hence farmer 3 is close to the average size of Danish organic dairy farms. Farmer 1 manages a smaller farm than the average Danish organic farm, while both Farmer 2 and Farmer 4 manage larger farms than the average Danish organic dairy farm, both in terms of the number of cows and hectares. Three farmers deliver milk to Arla Foods, the largest producer of organic dairy products in the world (see Arla Foods, 2017). Farmer 3 delivers milk to Naturmælk, a smaller Danish dairy exclusively producing organic products (see Naturmælk, n.d.). When Farmer 3 converted in 2017, he delivered milk to Arla Foods but started to deliver milk to Naturmælk on January 1, 2020. Farmer 3's farm is located on a small island, where it is the only farm. All four farmers were fully converted in either 2016 or 2017. The farms are located in different geographical areas in

Denmark; however, specifications are not included due to the preservation of the farmers' anonymity. Furthermore, the geographical location was not crucial to the analysis. All four interviewed farmers were men.

6.2. Determinants of change

The farmers' descriptions of their ability, engagement, and willingness to convert are presented and analyzed in the following.

6.2.1. Farmers' ability to adopt organic farming

Because the four interviewees had already converted to organic farming at the time of the interviews, they have all had the ability to adopt. Hence, it should be emphasized that determinants regarding ability are merely experiences of farmers who were able to convert in practice.

Economic conditions were considered an essential determinant for the ability to convert to organic farming by all four farmers. The assessment of the economic prospect related to converting to organic farming was essential to the ability to adopt, as it influenced the farmers' ability to run an economically viable production. While talking about the ability to convert, all four farmers mentioned an economic arrangement with Arla Foods as very important to their ability and decision to convert. In the last six months of the conversion period, Arla Foods pays the full organic price for the produced milk, even though the milk is still sold as conventional milk (Landbrugsavisen, 2015). Farmer 4 described the arrangement as "(...) very lucrative. Really good arrangement (...) It, after all, means upwards of half a million [DKK] more for us annually." (F4, 2021). The remaining three farmers also mentioned this arrangement as economically beneficial for the farmers and making the conversion more economically favorable. Concerning this, Farmer 3 highlighted the critical importance of support from both the dairy and the bank, as the bank must agree to support the conversion before the farmer is able to convert (F3, 2021). Also, regarding financial ability, Farmer 1 expressed frustration regarding the legislative standards for both organic farmers and agriculturalists in general, as standards continuously demand more of the farmers, while the economic compensation does not increase simultaneously. However, he still considered organic farming more profitable compared to conventional farming (F1, 2021).

While all four farmers emphasized the importance of the economy regarding their ability to convert, Farmer 1 and Farmer 2 also stressed the importance of the farmers' ability to manage the soils

properly after ceasing to spray the fields. Farmer 2 described that the management of animals was not difficult but that

(...) it is more about managing the soil. That is where you have to crack the code. It is a problem if you are not capable of managing the soil properly because then you will not be able to make food for your animals, and then you must buy way too much. So that's where the large battles must be fought in order to become a skilled organic farmer (F2, 2021)

This statement corresponds to Farmer 3 and Farmer 4's descriptions, who in addition emphasized that farming has become more professionally challenging and interesting after conversion due to the need to acquire new skills and management strategies (F3, 2021; F4, 2021).

Because Farmer 3's farm was located on a small island, he experienced physical restraints that meant that he could not make large expansions, and therefore he continuously adjusted his number of cows; further, his daily routine was adjusted to the ferry's departing times. Therefore, the physical settings have influenced Farmer 3's abilities regarding his practices at the farm. He also mentioned how he and his wife have considered various alternative agricultural practices, which they could not put into practice due to the physical settings (F3, 2021).

6.2.2. Farmers' engagement

Between the four farmers, there are similarities and differences in how they engage with other actors. All four farmers engaged with advisory services, and Farmer 2 and Farmer 4 also emphasized that the dialogue with agricultural advisors during the conversion was an important determinant for the decision to convert to organic farming. After accidentally having made a spraying damage on a neighboring farm, Farmer 2 came into dialogue with an agricultural advisor, and he described the encounter with the agricultural advisor:

He said: 'Well, with this farm you have here, are you a complete moron? Are you not even interested in making money?' Oh well. That triggered me a bit because, of course, I was. So, he thought it would be a good idea to convert to organic farming (F2, 2021)

This story was described as a pivotal moment for his decision to convert, and similarly, Farmer 4 decided to convert when his advisor assessed that organic farming would be more profitable than conventional farming (F4, 2021). While Farmer 1 and Farmer 3 also used advisory services, they were more reluctant to express their contentment than the other two. They both expressed that they

had more trust in other practitioners than in advisors, as the practitioners have knowledge based on practical experiences. Instead, Farmer 3 used discussion groups with other farmers when in need of advice and consulted other farmers before consulting an agricultural advisor (F3, 2021). Farmer 1 did not engage with discussion groups either but instead used informal networks with other farmers. This engagement was especially important to him regarding practical things such as weeds, where he “(...) try to listen to the experiences from those who have been organic for a long time, as to how we can get rid of the weeds and simultaneously avoid having to buy too expensive machinery for it” (F1, 2021).

Furthermore, Farmer 1 argued that the advisors should increasingly pass on other farmers’ knowledge and experiences, which would make the farmers able to learn more from farmers who manage farms similar to their own (F1, 2021). Farmer 1 and Farmer 4 also emphasized the need for increased integration of farmers, researchers, and the surrounding society regarding future agricultural policies to increase understanding of challenges faced by farmers under the present policies (F1, 2021; F4, 2021).

Moreover, Farmer 3 engaged in a marketing project with Naturmælk and, previously, Arla Foods, where they sold cheese made from milk from the island where the farm was located (F3, 2021). Furthermore, Farmer 1 and Farmer 4 engaged with their local municipality in different projects (F1, 2021; F4, 2021). Hence, the farmers engage with or wish to engage with different actors, which may influence their decision-making.

6.2.3. Willingness to adopt organic farming

Important factors related to the farmers’ willingness to adopt organic farming are more diverse than the farmers’ ability and engagement. Both Farmer 3 and Farmer 4 had considered converting for some time before they converted to organic farming. Farmer 4 had had three conversion checks before deciding to convert to organic farming, and the thing that made him willing to convert after the third check was the positive economic prospects (F4, 2021). Farmer 3 and his wife had been willing to convert for quite a while but could not convert because they did not have the necessary support from the dairy and the bank. Farmer 2 also emphasized the economic prospects as highly important to his decision to convert to organic farming, and his decision seemed to have been more rapid compared to the other farmers. He mentioned that he was willing to get a conversion check of the farm because it was free, and further, he was willing to quickly adopt organic farming due to the positive economic outcome presented by his advisor (F2, 2021).

Rather than economic prospects, Farmer 3's willingness was mainly driven by a desire for a new professional challenge (F3, 2021). A professional challenge, which Farmer 4 also had a positive experience with after the conversion, where he said that

(...) it has become more fun to be a farmer [after the conversion]. It has become much more interesting, in a very different way. You have to use the plants to fight each other (...). You have to figure that out (F4, 2021)

Farmer 2 also emphasized that he was sure that it was the right decision to convert to organic farming and that farming had become more interesting after conversion (F2, 2021). All four farmers mentioned the economic prospects related to organic conversion as an important factor regarding their willingness to convert.

Furthermore, Farmer 1 described that the decision to convert to organic farming were equally motivated by the economic prospects and environmental concern and mentioned that he had long had reservations about spraying his fields:

(...) I had been tired of having to get out and spray the fields for the last five years at least. Because you had to get up early and find weather, which quiet or else it was late at night (...), and often it started raining half an hour later anyways (...). So, in that way, I have always thought about the environment and been irritated about using so much money on chemistry which may only have half the effect (F1, 2021)

Hence, Farmer 1's frustration about spraying both because of the environmental consequence and the economic consideration further increased his willingness to convert to organic farming. Farmer 4 also mentioned how environmental concerns were important for his willingness to adopt organic farming and elaborated that climate considerations mainly became important to him after converting to organic farming (F4, 2021). Similarly, Farmer 2, who also stressed the importance of economic prospects, also mentioned that he, after conversion, became more interested and enthusiastic about how organic farming can limit environmental and climate impacts (F2, 2021). Farmer 1 also expressed high levels of interest in improving the environment and climate (F1, 2021), which means that the farmers' motivation and willingness to remain organic after conversion is dynamic and may change throughout time, so factors that were not important to the decision to convert may become essential to the decision to remain organic.

6.3. Levels of influence

In the following sub-chapter, factors at the three levels of influence are presented as described by the four farmers.

6.3.1. Farm-level influences

The farmers' experiences at the farm-level were naturally diverse, and hence the influential factors at farm-level were also heterogeneous. During the coding of the interviews, the most noticeable factors at farm-level were *practicalities at the farm*, *personal beliefs and ideology*, and *economic considerations*. Besides these factors, Farmer 2, Farmer 3, and Farmer 4 mentioned their spouses as important to their decision to convert to organic farming.

6.3.1.1. *Practicalities at the farm*

All four farmers mentioned different types of practicalities at the farm related to the conversion as an influential factor at the farm-level. None of the four farmers perceived the changes made regarding animal management as being problematic. Farmer 2 did, however, mention that the pathways, which the cows use do require quite a lot of maintenance, which is unsurprising since his 300 cows use the pathway frequently (F2, 2021). Farmer 1, who manages 70 cows, highlighted how his smaller holding has been favorable for the conversion since it has only necessitated smaller investments compared to larger holdings' investments (F1, 2021). Moreover, all four farmers considered the management of the fields to be more of a challenge compared to animal management, although not in a negative way (F1, 2021; F2, 2021; F3, 2021; F4, 2021). As previously mentioned, Farmer 2, Farmer 3, and Farmer 4 highlighted the change in practicalities at the farm as a valued professional challenge.

To Farmer 1, his existing practices were important regarding his willingness to convert. Since 2000 he had utilized microorganisms that are sprayed onto the fields and put in fodder and milk, which are supposed to improve plant growth and animal health. This technique was not a widely used practice; however, in Farmer 1's experience, they positively affect his results, and since the microorganisms do not work well in conventional systems, he became more willing to convert to organic farming (F1, 2021).

As previously mentioned, Farmer 3's farm was located on a small island, where it was the only farm. As described in chapter 6.2.1, the physical setting had shaped his options for creating change and hence also his willingness to adopt organic farming. While the location created constraints, he considered the location advantageous, e.g., regarding inspections (F3, 2021).

6.3.1.2. *Personal beliefs and ideology*

Three farmers had ideologies or attitudes, which seems to have affected their willingness to adopt organic farming. Farmer 2 said that he has been somewhat critical towards organic farmers in the past as he did not consider organic farming as a good alternative to conventional farming. At the time of conversion, he claimed that he was not ‘organic by heart’. However, five years after his conversion, he had changed his attitude and told that “(...) it has gotten completely under my skin. I am very much organic. I mean, not with knitted sweaters and a long beard (...) but I really do think organically now” (F2, 2021). Hence, Farmer 2’s attitude towards organic farming has evolved since he converted, and he also expressed enthusiasm about future challenges as he believes organic farming is part of the solution (F2, 2021). Farmer 4 also claimed that he does not consider himself as ‘organic by heart’, especially compared to organic pioneers who were more driven by ideology. Instead, he claimed that both ideology and economy drove him, which was also true for Farmer 3, who mentioned how he was different from the pioneers of organic farmers, who may have a stronger organic ideology than himself (F3, 2021; F4, 2021).

6.3.1.3. *Economic considerations*

The state of the farm’s economy, although diverse, has been an important factor regarding the farmers’ willingness to convert to organic farming. Farmer 2 highlighted two events related to the farm’s economy, which were important to his willingness to convert. The first event was related to interest rate swaps fixing the interest rate, which has been problematic for many Danish farms (see Thomsen, 2019), making it, according to Farmer 2, difficult to earn money and pay off debt. The second event was related to a spraying damage on a neighboring field, which got Farmer 2 in contact with an advisor who, as previously mentioned, recommended organic farming for financial reasons (F2, 2021). Farmer 1 did not go into details regarding his previous economic situation; and he made it very clear towards the end of the interview, where he claimed that he “(...) did it because of the economy. (...) it is better economically for me as a smaller producer. I mean, I would not have been here today if I was still farming conventionally” (F1, 2021). Hence indicating that he would have gone bankrupt had he not converted. Farmer 3 also highlighted how the economy at the farm had improved after conversion and further emphasized how he and his wife were inspired by more experienced organic farmers, who have a good economy without ‘working themselves to death’ (F3, 2021). Farmer 4 also mentioned how he converted due to economic consideration and stated that he continuously makes decisions according to what is most economically feasible for the farm’s economy (F4, 2021).

6.3.2. Community-level influences

In the following sub-sections, the farmers' perceptions of factors existing at community-level are presented. During coding of the interview, the most prominent and recurring factors at this level were found to be *farmer networks*, *conventional colleagues*, and the *local community*.

6.3.2.1. Farmer networks

All four farmers addressed their networks with other farmers as an important factor for their conversion to organic farming. Farmer 1 was the only one who did not participate in any discussion groups as he previously had experienced that the other participants managed farms that were vastly different from his own. Instead, he found it more valuable to network with farmers through his organizational work, where he sat on several boards, making him familiar with many farmers in the whole country, which he uses for professional discussions (F1, 2021). Farmer 2 was also elected for several boards, which he found useful for networking with other farmers with whom he could have professional discussions. He did not often participate in informal discussion groups, but his employees did (F2, 2021). Conversely, Farmer 3 found discussion groups with other farmers very valuable. He also made much use of visiting experienced organic farmers and discussing difficulties with other new organic farmers (F3, 2021). Farmer 4 also found farmer discussion groups very valuable, as they enable the farmers to exchange experiences regarding various challenges. While he did not participate in any formal discussion groups, he participated in a local informal discussion group with farmers in the area, where they mainly discussed arable farming (F4, 2021).

6.3.2.2. Conventional colleagues

Both farmer 1 and Farmer 4 mentioned their relationship to their conventional colleagues. Farmer 1 was keen to emphasize that he did not believe that it would be realistic to convert all agricultural land to organic farming and hence did not believe that Roundup should be completely phased out. His rationale was that Roundup is required in some production branches, such as conservation agriculture, and underlines this point by saying that

(...) we have to help each other out no matter what because we have to make room for all of us. I mean, I will not belittle conventional farmers at all because (...) I believe that it is (...) about how good we are at our craft (F1, 2021)

Hence, Farmer 1 claimed to consider conventional farmers as just as good farmers as organic farmers are. However, Farmer 4 mentioned that his relationship with some of his conventional colleagues had changed after he converted to organic farming. While he did not belittle the conventional farmers, he

did mention that some conventional farmers did not wish to stay in touch with him anymore because they disapproved of his choice to convert to organic farming (F4, 2021).

6.3.2.3. *Local community*

To Farmer 3 and Farmer 4, their local community seems to have been important to their willingness to adopt organic farming. As previously mentioned, Farmer 3's farm was located on a small Danish island, where it was the only farm. The organic conversion of the island's only farm made the island a completely organic island, which was received positively and with support from the island's population. After the conversion, the local kiosk and coffee house also became organic, meaning that the conversion of the farm generated a sense of community and a collective change. This story of a completely organic island also opened for alternative marketing options; one where locals can come and collect milk for free; another with the dairy, first Arla Foods and later Naturmælk, who produced a cheese made from milk from the island; and a third with a restaurant at the mainland, who also used the story of the organic island in their marketing (F3, 2021).

Farmer 4 mentioned two different types of interactions with his local community. The first interaction was his experience with 'Økodag', the day in spring where the cows are let outside on the grass, and the public is invited to visit organic farms. On Økodag in 2019, 4000 people visited the farm, which had been very successful and a good experience, where neighbors helped with the logistical work. Farmer 4 considered this as being a valuable experience with the local, although possibly extended, community. The second interaction with the local community highlighted by Farmer 4 was an example of an interaction between farmers, both organic and conventional, and people living in larger cities. In this interaction, the people living in cities seemed to be significantly more critical of conventional farmers, especially due to spraying and keeping the animals indoors. However, Farmer 4 also highlighted that organic farmers cannot just lean back and relax, as organic farmers still have much work to do regarding emissions of greenhouse gasses (F4, 2021). The abovementioned narratives indicate that the local communities, which the farmers are a part of, have influenced the farmers' willingness to remain organic after conversion.

6.3.3. *Societal-level influences*

In the following sections, the essential factors at societal-level, as highlighted by the farmers, will be presented and reflected upon. During coding of the interviews, the most important factors at societal-level were found to be *market and price premiums* and *environmental and climate initiatives*. However, the farmers also mentioned other factors at societal-level. For instance, Farmer 1 was vocally

skeptical towards the political sphere and argued that policymakers need to understand and engage in dialogue with farmers; otherwise, policies risk being impossible to implement in practice (F1, 2021). Along similar lines, Farmer 4 criticized the spraying legislation as being influenced by the producers of pesticides (F4, 2021). Furthermore, Farmer 3 spoke very positively about the organic inspections, which he had very good experiences with compared to the inspections he had when he was farming conventionally. He even described the inspectors as valuable advisors regarding the management of animals and the farm in general (F3, 2021).

6.3.3.1. Market and price premiums

For the four interviewed farmers, the prospects of the organic market and the appertaining prices on organic products were the most important factor at societal-level. They all emphasized that the economic prospects related to price premiums on organic milk have been an important factor affecting their willingness to convert to organic farming. Farmer 1 mentioned that ahead of his decision to convert to organic farming, he contemplated a lot whether the current demand for organic milk was stable or not, but, in the end, he decided to take the leap and convert (F1, 2021). Similarly, Farmer 4 also decided to convert when his advisor assessed that a conversion would increase the profitability of his production. He also emphasized that he will only continue to farm organically as long as it is economically viable (F4, 2021). Farmer 2 made, as previously mentioned, a relatively quick conversion, which was considered a great risk by several people in his network. However, the timing of Farmer 2's conversion matched the peak of the milk prices, making it a profitable decision to convert. Furthermore, he firmly believed that organic milk to have a bright future regarding marketing possibilities (F2, 2021). Marketing options and their effect on the economic viability of conversion were also highlighted by Farmer 3 (F3, 2021).

As market conditions may be a rather abstract concept, the dairies were, amongst the four farmers, a more tangible manifestation of the market conditions. Farmer 4 mentioned that it is crucial to be careful not to overstimulate the market by letting too many farmers convert to organic farming, thus creating an oversupply. Hence, they believed it to be important that the dairies continue to assess and dictate when the farmers can convert to organic farming based on whether there is a demand for more organic milk. This assessment would ensure that the organic milk price does not decrease dramatically. Farmer 3 also reflected upon the risk of an oversupply of organic products (F3, 2021; F4, 2021). While the farmers emphasized the importance of the opportunity for conversion provided by Arla Foods, Farmer 1 and Farmer 3 also had critical remarks towards Arla Foods. Farmer 1 was critical of

the lack of transparency related to Arla Food's decision to decrease milk prices on January 1st, 2021, due to Brexit and the corona crisis (F1, 2021; Springborg, 2020). Farmer 3 was also skeptical towards the pricing and questioned the value of Arla Food's mode of pricing, where the farmers receive a fixed price per liter and then receive bonuses if any additional value-adding initiatives are made (F3, 2021). However, Farmer 1, Farmer 2, and Farmer 3, who deliver milk to Arla Foods, were overall satisfied with the dairy, although Arla Foods pays a lower milk price than other Danish dairies. The lower milk prices seemed to be compensated because the three farmers perceived Arla Foods as a stable marketing outlet (F1, 2021; F2, 2021; F4, 2021).

Regarding market conditions for organic products, Farmer 1 and Farmer 4 also mentioned the supermarkets' responsibility regarding pricing. Farmer 1 mentioned that consumers' lack of willingness to pay a certain price is not a problem, but rather the supermarkets' pricing is a problem, which puts pressure on the organic farmers. Further, he acknowledged that Danish prices are highly related to international prices and EU legislation. Moreover, he also problematized that the consumers use a smaller share of their income on food than earlier (F1, 2021). This statement seems somewhat contradicting to his statement about the supermarkets' pricing, hence, underlining the complexity and ambiguity regarding the organic market and the distribution of responsibility. Farmer 4 also pointed to that the consumers do not have much influence on the prices of organic products as the prices are more or less dictated by the supermarkets, hence distributing a large portion of the responsibility to the supermarkets, who must make sure to market sustainable products to a fair price (F4, 2021). While the farmers did have some reservations about the organic market's future, they all generally seemed satisfied.

6.3.3.2. Environmental and climate initiatives

Environmental and climate initiatives exist at societal-level because of the public debate and public demand for initiatives regarding climate mitigation in agricultural production, and this may affect the farmers' willingness to adopt organic farming. Both Farmer 1 and Farmer 4 addressed the vast differences between countries in Europe. Farmer 1 highlighted how different European countries make different strategies regarding climate and environmental initiatives and how the Danish consumers may not appreciate specific initiatives, referring to deposits on plastic milk packaging used in the UK amongst other countries (F1, 2021). Hence he argued that some positive initiatives might not be successful if the consumers disapprove. Concerning differences between European countries, Farmer 4 pointed to that there are vastly different levels of sustainability when comparing agricultural practices

in different European countries. Furthermore, he argued that investment in sustainability should focus on EU countries with the poorest agricultural sustainability to get the most value for money; however, Farmer 4 also argued that pesticides in the groundwater, related to the spraying of agricultural fields, are a major problem that should be addressed, and he believed that the producers of pesticides are primarily to blame for the present conditions (F4, 2021).

For Farmer 2 and Farmer 3, the environmental and climate debate was not the main driver of their conversion to organic farming (F2, 2021; F3, 2021). Nonetheless, as previously mentioned, Farmer 2 became motivated by initiatives to mitigate climate change after conversion, and he mentioned that

The next 5-10 years are going to be wildly exciting (...) and especially regarding how the journey is going to play out for organic farming. Because we must be pioneers. I mean, it is in our DNA to be leading the way (F2, 2021)

Hence, while Farmer 2 was initially motivated by economic considerations, he expresses that he is motivated by challenges agriculture and the world face in the future.

6.4. Summarizing remarks

As was the case in the literature review, the four interviewed farmers' decision to convert to organic farming seems to have been influenced by various factors. Economic considerations related to the prospects of the organic markets seem to have been important to all four farmers regarding farmers' ability and willingness to convert. This factor was vital at both farm-level and societal-level. Furthermore, the farmers' interaction with advisors has also been influential; however, the farmers are not unconditionally satisfied with the advisors and highlighted the importance of having professional discussions with other farmers. Furthermore, environmental concern was also important to the farmers; however, for some, this became important after conversion, hence motivating them to remain organic. Professional challenges related to the adoption of organic farming were also important to some farmers.

7. Discussion

The following chapter consists of two sections of discussions. The first section is a comparative discussion of the results of the literature review and the case studies. The second section is a theoretical discussion of the framework regarding levels of influence.

7.1. Comparing results

The analysis of the European literature and interviews with Danish dairy farmers contains both similarities and differences. The following chapter compares the two sections of analyses, where key points are highlighted and discussed.

7.1.1. Farmers' ability to convert to organic production

For the four interviewed farmers, the economic prospects were a crucial incentive for the farmers' ability to convert to organic production, and the economic conditions were also found to be of importance in the literature (see chapter 5.2.1.1.). However, there was also a frustration regarding a perceived discrepancy between the legislation and economic compensation from consumers, which continuously increase requirements to which farmers must adjust while not increasing economic compensation simultaneously, creating economic difficulties for the farmers. This frustration was similar to reports by Kociszewski et al. (2020) and Siepmann & Nicholas (2018), where some farmers also considered the legislation to be too strict. However, amongst the four interviewed Danish farmers, there were also a willingness to adhere to the strict requirements, as long as they were economically rewarded for their effort, allowing them to continue running a viable business. Similarly, it was found in several papers that it was crucial for the farmers' ability to convert that additional costs are covered to avoid or minimize economic loss during conversion (see chapter 5.2.1.2.). While the subsidies were of high importance in the literature, the four farmers' narratives focused more on the positive market prospects and Arla's arrangement, where farmers are paid full organic price half a year before finished conversion. Thus, limiting economic risks related to conversion was essential in both the literature and amongst the interviewed farmers; however, the farmers' means to do so stand out compared to the findings of the literature review.

7.1.2. Farmers' Engagement

Regarding farmers' engagement, there was a similarity between the findings in the literature and the interviews regarding the importance of the farmers' interaction with organic advisory services and other farmers. Two of the interviewed farmers' experiences with advisory services had generally been

positive and highly influential on their decision to convert and their management of organic production. These experiences are well in line with the findings in the literature, where engagement with agricultural advisory services was generally considered a crucial determinant for the farmers' decision to convert to organic farming (see chapter 5.2.2.1). The other two interviewed farmers, however, differ from the general findings in the literature, as they were more reluctant to refer to the agricultural advisors as an important influence on their decision-making (see 6.2.2). While they both used advisory services, they were keener to highlight the importance of other organic farmers when seeking advice. The literature review also revealed that interaction with other organic farmers was important to the decision to convert to organic farming (see chapter 5.2.2.3. and 5.3.2.2.). Farmer 3 collaborated with his dairy, where he marketed a cheese produced of milk from his cows, which was used to sell a story of the cheese made of milk from a fully organic island. Hence in collaboration with his dairy, Farmer 3 sold a story, like the Organic German Winegrowers studied by Siepmann & Nicholas (2018).

7.1.3. Willingness to convert to organic production

In the reviewed literature and amongst the four interviews, the economic prospects were an important factor in the willingness to adopt organic farming practices. However, in the literature, the prospect of receiving organic subsidies was the most noticeable economic factor, while considerations about the organic market were considered more of a barrier by some papers. Contrary to this, the four interviewed farmers emphasized the organic market as a driver for organic conversion (see chapter 6.2.3.). Still, the economic prospects and profit-orientation which influenced the four Danish farmers' willingness to adopt organic farming, corresponds to some of the reviewed papers, which found that late adopters of organic farmers, a category which the four interviewed farmers falls within, tend to be more profit-oriented than early adopters (see chapter 5.3.3.1. and 5.3.3.2.). While the interviewed farmers fit this notion of late adopters, this would need more investigation to confirm this correlation.

There are also some interesting points regarding changes in what affected willingness to remain organic when comparing the literature and interviews. The interviewed farmers all mentioned that they have become more aware and concerned of the environmental aspects of farming after conversion and how farming has become more challenging and fun after conversion. For some of them, the organic way of thinking had grown more on them than expected. Hence, the factors affecting their willingness to convert to organic farming and the willingness to remain converted are not static, and the influential factors may change throughout time (see chapter 6.2.3.). The dynamic changes in

opinions fall well in line with some papers' findings (e.g., Kings & Ilbery, 2010; Papadopoulos et al., 2018). In a French study, the farmers' attitudes and positions were described as a "(...) stage in a longer trajectory and are subject to change and also to overlapping" (Lamine, 2011, p. 216). Hence the interviewed farmers' attitudes may change according to how they move along their trajectory. However, as the four farmers' statements were based on their self-perception regarding their environmentally-friendly beliefs, it would be necessary to compare the statements to more experienced organic dairy farmers' beliefs in order to make any definitive conclusions in this regard.

7.1.4. Farm-level influences

The interviewed farmers all had considerations regarding the farm's economy, which was well in line with the findings in the literature, where farm economy also was an important factor influencing willingness to convert (see chapter 5.3.1.3.). However, the interviewed farmers emphasized the market prospects while the literature mainly highlighted subsidies as important.

Amongst the interviewed farmers, it was clear how required changes in field management were more complicated than the required changes in animal management. However, it was not perceived as problematic, which matches the findings in the literature, where physical challenges were generally not described as a big problem (see chapter 5.3.1.2). The farmers, both the interviewed farmers and in the literature, used various strategies to adapt to the changes in management. Hence, the conversion may be rapid or slow, depending on the context and preferences of the farmer (see chapter 5.3.1.2. and 6.2.3).

Another similarity between the cases and the literature was how organic farming was described as a professional challenge, increasing agency and making farming more fun. While the interviewed farmers all believed that organic farming was the right choice, some also emphasized how they differ from experienced organic farmers, who were described as almost 'religious'. Hence, they considered themselves to be more pragmatic (see chapter 6.3.1.2). This finding was well in line with some of the findings in the literature.

7.1.5. Community-level influences

To some of the interviewed farmers, the local community played an important role in their willingness to remain organic, as they have received positive feedback from the local community, which encourages them to remain organic. This influence from the local communities corresponds well with the reviewed literature, where several papers highlighted the local communities as important. However, none of the interviewed farmers mentioned any neighborhood effect, like the one described by some

papers where organic neighbors influenced farmers' decision-making (see chapter 5.3.2.3). Rather, the non-farmer neighbors seem to have been more important, which is similar to other papers that found interactions with the local community and local consumer to be important to the decision to convert (see chapter 5.3.2.3.). In the literature and interviews, social networks with other farmers were among the most recurring factors influencing the farmers' decision-making. All the interviewed farmers mentioned their farmer networks as important, which corresponds to the findings in the literature.

7.1.6. Societal-level influences

The factors at societal-level may differ between studies since the regional and national policies may vary and influence the farmers. Both amongst the interviewed farmers and in the literature, it was found that it was perceived as important to ensure that the market was not oversaturated with producers since it could damage the organic market and price premiums. An oversaturation would lead to lower prices on organic products, which is favorable from a consumer standpoint. However, it would decrease the profit realized by farmers, hence damaging the market conditions from the farmers' point of view. In Denmark, Arla Foods regulate the number of organic dairy producers, and all interviewed farmers utilized a window of opportunity provided by Arla Foods. Some papers also described how the farmers seized an opportunity for conversion provided by external factors, e.g., subsidies (see chapter 5.2.1.1.). Therefore, the external circumstance must allow for conversion, and in the case of the four interviewed farmers, the opening was provided by the dairy.

Regarding societal-level influences, there was also a notable discrepancy concerning farmers' considerations of the market conditions. While the four farmers were not unconditionally positive towards the organic market, they all expressed overall satisfaction with the market conditions and prospects thereof. This contrasts with the findings of the reviewed literature, where several articles found uncertainties surrounding the market conditions to be a barrier for the farmers' uptake of organic farming. Instead, the prospect of receiving direct payments during and after conversion was found to be a more important driver in the literature compared to the market conditions (see chapter 5.3.3.1. and 5.3.3.2.).

7.1.7. Theoretical and methodological reflections on results

Based on the findings presented in the analyses and the comparative discussion above, it is relevant to address a few methodological and theoretical implications. The applied methodology and theoretical framework influence the focus and findings of the research. That goes for both the analyses in

the reviewed papers and for the analyses of this thesis, which means that research utilizing quantitative methods may tend to focus more on farm(er) characteristics, such as age, level of education, farm and herd size, and labor intensity, and further trying to make generalizations based on the findings. Contrary, qualitative research tends to focus more on in-depth knowledge while not aiming to generalize any findings. This tendency was also reflected in the findings of this thesis' analyses, as the papers which highlighted farm(er) characteristics as important tend to be based on quantitative research. Contrary, the papers that addressed attitudes and networks may be based on either qualitative or quantitative research. Since the four case studies used in the thesis were based on qualitative interviews, the findings of this section focused on generating more in-depth knowledge rather than reproducible finding. It would not be meaningful to make any definitive conclusions regarding factors such as farm and herd size, age, or education, since such conclusions would require the use of much larger samples. Hence the methodology and theoretical framework create a perspective for what conclusions can be made since the methodological and theoretical choices are concurrently deselection of other perspectives, which means that in the case studies, a perspective regarding, e.g., farm size, has not been included in the analysis of the cases as a result of the methodological choices.

Another relevant reflection should be considered regarding the decision to make a literature review of research in the EU and four Danish case studies. Because how are these two sections relevant to one another when the contextual settings across the EU are so vastly different? Firstly, the literature on the subject in a Danish context is very sparse and published before 2011, making it limitedly relevant to the present Danish context. Secondly, the structural circumstances for organic farmers in the EU are somewhat similar, especially regarding the availability of direct payments, making the uptake of organic farming comparable across Europe. However, comparisons should be made with caution since the context still varies greatly, e.g., regarding political environment, present dissemination of organic farming, physical circumstances, and climate.

7.2. Expanding 'levels of influence': Introducing interlevel dynamics

While analyzing and coding the empirical data for the present thesis, it became apparent, both in the analyzed papers and in the four farmers' narratives and experiences, that factors at one level may come to influence factors at another level. Hence, there are interlevel dynamics that seem to be highly

relevant when addressing farmer behavior. Nevertheless, this perspective is lost when strictly applying the conceptual framework regarding levels of influence, as described by Mills et al. (2017).

7.2.1. Shortcomings of the ‘level of influences’-framework

The two frameworks presented by Mills et al. (2017) do indeed cover many aspects of what affects farmers’ behaviors and decisions when adopting alternative practices, such as organic farming. While Mills et al. (2017) mention that “[a] complex set of inter-relationships influences willingness to change which can be usefully considered at three different levels (...)” (p. 292), a part of the complexity of these interrelationships is lost when dividing influential factors into three fixed levels of influence. Instead, the factors which affect farmers’ willingness to adopt a specific practice cannot be isolated at a single level, as both actors and factors are present at multiple levels affecting circumstances at the other levels. Hence, factors, ideas, and narratives travel between the three levels. During coding and analysis of interviews and articles, it became clear that the interrelationship between the three levels was lost when coding according to which level a particular factor existed. An example is how a farmer’s belief systems and core values will indeed affect the farmer’s willingness to adopt a certain practice. However, personal beliefs may also affect the networks one turns to or engage with. These networks may then again influence or reinforce one’s perceptions of certain practices; thereby, the farmer’s willingness is influenced by community-level. Hence, in this case, farm-level affects community-level, which again affects willingness to adopt organic farming. Another example would be how networks of farmers, e.g., farmer associations and boards, which exist at community-level, engage with politicians or scientists, either through lobbying activities or by administering research funds, hence influencing factors at societal-level which may, in turn, affect willingness to adopt specific practices. Based on these considerations, it is valuable to add a layer to the second framework introduced by Mills et al. (2017), making it possible to create a notion of interlevel dynamics.

7.2.2. Observations of interlevel dynamics in empirical data

In the reviewed papers and the interviews, there are several examples of interlevel dynamics. In the following sections, key examples of interlevel dynamics found in the reviewed papers and narratives told by the interviewed farmers are presented to provide insight into the missing perspective of the ‘level of influences’-framework. First, factors spilling over from farm-level are outlined. Second, examples of interlevel dynamics stemming from community-level are presented, and third, interlevel dynamics originated at societal-level is highlighted.

7.2.2.1. *Interlevel dynamics originated at farm-level*

Factors at farm-level were, compared to the remaining two levels, the level which generated the least interlevel dynamics, and in some cases, there seemed to be a lock-in, where farmers were unable to create bottom-up changes. In a focus group discussion in the UK, most participants showed little faith in the government's ability to make quality policies, with organic farmers being the most skeptical. These attitudes were reinforced by a sense of lack of agency and ability to influence governmental policies. However, GM-policies were highlighted as a success story, where farmers affected policy (Kings & Ilbery, 2010, p. 445). In another UK study, some farmers expressed that national and EU policies are non-participatory, thus limiting farmers' ability to influence policies outside their local catchment area. However, a farmer believed that the organic movement influence of the broader agricultural systems as organic farmers "(...) put a domino against a slightly bigger domino, against a bigger tower block and the little domino can make the tower block fall over" (James & Brown, 2019, p. 144). Despite the statement above, Rigolot (2020) argued, in a comment to James & Brown (2019), that the authors understated the farm-level's influence on the societal-level. Based on previous studies conducted by the author, it was argued "(...) that transformations in the personal sphere can powerfully scale-out to effect transformations in the political sphere, through political agency in the broad sense" (Rigolot, 2020, p. 697). The scale-out happens as personal and societal changes are, according to the author, deeply interrelated, and thus, the political sphere is a reflection of the personal sphere (Rigolot, 2020, p. 697). Along similar lines, Brzezina et al. (2017) highlighted that organic farming primarily developed without any political or economic incentives, meaning that farmers' environmental considerations mainly drove organic conversion. The organic practices motivated the consumers to compensate the farmers' efforts economically; hence factors at farm-level fostered a demand at societal-level (Brzezina et al., 2017, pp. 7–8). Lamine et al. (2014) similarly argued that farmers are intertwined in relationships with non-farmer actors and that the farmers' decisions, e.g., regarding organic conversion, may influence other actors and contribute to the generation of diverse market outlets, at either community- or societal-level (pp. 431–432). Lamine (2011) provided a concrete example of how a recently converted organic farmer influenced his new professional network of organic farmers by introducing elements from his previous networks with conventional farmers (p. 213). Hence, individual farmers and their previous experiences, ideologies, and ideas may affect networks at community-level upon entering (Lamine, 2011). Discussions about farmers' political agency, or lack thereof, are interesting discussions it touches upon the origin of a change. Farmers' abilities to influence politics vary across farmers' and other stakeholders' perceptions and geographical

contexts. However, it is vital to support an ongoing dialogue about the farmers' political agency and continuously and openly reflect upon how and how much influence farmers should have on the political agenda.

Some of the tendencies found in the literature can also be found in the interviewed farmers' narratives, although they have different views and experiences of these interlevel dynamics. Farmer 3 and Farmer 4 both told stories, which suggested that factors at farm-level had influenced factors at community-level, since they had both experienced local interest in their organic conversion (F3, 2021; F4, 2021). As mentioned earlier, the local community at the island was very supportive of Farmer 3's conversion, and local shops decided to become organic as well, which was motivating for Farmer 3 to remain organic (F3, 2021). Farmer 4 experienced an increased interest from local landowners who were interested in leasing land to him as they wanted their land to be managed organically. Hence, reinforcing and acknowledging his ideology and economic considerations at farm-level (F4, 2021). While the literature mainly addressed the interaction, or lack thereof, from farm-level to societal-level, Farmer 3 and Farmer 4 suggested an important interaction between factors at farm-level to community-level since the farmers' ideologies have influenced attitudes in the local communities. In turn, the farmers received an affirmation from the community, which may increase their willingness to continue organic farming. Similar to the finding in the UK, Farmer 1 also expressed frustration regarding the lack of ability to create bottom-up changes.

7.2.2.2. Interlevel dynamics originated at community-level

In the literature, there are several examples of interlevel dynamics stemming from community-level. Rigolot (2020) argued that farmers organize according to personal beliefs and that these farmer networks influence policy development. Hence, factors at farm-level spill over into community-level, which again spill over into societal-level, making the community-level a means for farmers to influence the societal-level (Rigolot, 2020, p. 697). Kociszewski et al. (2020) argued that networks of farmers are crucial as it allows for improvement of the organic market and processing and distribution logistics; hence factors at community-level may contribute to improving the structural circumstances at societal-level (p. 16). This argument corresponds to Konstantinidis's (2016) argument that smallholders in the EU may increase their likelihood of survival if they organize through farmers' associations and make deals with, e.g., supermarkets, thus influencing the market conditions at societal-level (p. 189). Mentioned above are factors at community-level influencing factors at societal-level. However, there were also spill-overs into farm-level. In one pre-alpine Slovenian village, collective

actions and cooperation between farmers and villagers were crucial in the effort to create a ‘community of sustainable farmers’ and “(...) [t]he collective step to organic farming thus presents a circumstance in which an action has gained additional meanings and has profoundly influenced farmers’ self-perception” (Bartulović & Kozorog, 2014, p. 99). Likewise, it was found amongst French farmers that through interaction with farmer groups and non-farmer actors, the newly converted farmers discovered their ‘core identity’ (Lamine et al., 2014, pp. 432–433). In another paper, it was found that amongst English farmers who established new income streams, e.g., through direct sales or non-farming activities, the farmers’ values and farmer-identity were altered by their new networks and collaborations (Sutherland & Darnhofer, 2012, p. 237). Along similar lines, Koesling et al. (2012) found that some organic farmers who deregistered from organic farming were highly influenced by skeptical external networks, such as neighbors and colleges, who influenced beliefs at farm-level (pp. 113–114).

As was the case with the reviewed literature, the interviewed farmers also present examples of interlevel dynamics that originated at community-level. The four interviewed farmers’ attitudes and ideologies also seem to have been influenced by interactions with their networks. Farmer 3 emphasized that he engaged in discussion groups with recently converted organic farmers and more experienced organic farmers. Especially his engagement with the latter group have influenced his economic considerations at farm-level and increased his willingness to convert to organic farming:

It is not because they have a big, new farmhouse and an up-to-date barn where everything works flawlessly, and every corner is swept clean (...). It may be puzzling because it might look like rubbish, but they just have a darn good economy (F3, 2021).

When the farmers engage in professional discussions, they exchange ideas and experiences, which inherently creates social learning and affects both the community-level and factors at the farm-level, such as ideology and attitudes. Farmer 1 and Farmer 2 did not engage in formal discussion groups personally but rather engaged with other farmers through organizational work (F1, 2021; F2, 2021). Farmer 3 also engaged in organizational work. The farmers’ organizational networks may reinforce their personal beliefs creating an interrelationship between the farmer’s beliefs and the social norm in the community. Furthermore, since the farmers engage in organizational work and are members of farmer associations, which engage in lobbying activities, they may affect the political sphere through farmers’ associations at community-level.

7.2.2.3. *Interlevel dynamics originated at societal-level*

As is the case with farm-level and community-level influences, the societal-level influences interact with the remaining two levels of influence in different ways. In one Slovenian pre-alpine village, which was located in a sparsely populated area, the farmers were, according to public authorities and farmers, the ‘managers’ of the landscape. The farmers engaged in close interactions with the local authorities who encouraged and supported the farmers to convert to organic farming, and the responsibility to preserve the physical and cultural landscape was internalized in the farmers’ self-perceptions as they took pride in this responsibility (Bartulović & Kozorog, 2014, p. 92). Similarly, the public perceptions also affected some French farmers’ decision-making since they “(...) would like to be valued and respected for their work” and thus, they adapt, to some degree, to the public opinion (Bouttes et al., 2019, p. 242). Hence in these cases, the public institutions and public opinions at the societal-level empowered and affected the farmers’ self-perceptions at farm-level. In Ireland, the farmers’ attitudes towards organic farming were influenced by the prospect of receiving subsidies (Läpple & Kelley, 2013, p. 16), and Läpple & Rensburg (2011) found, as previously mentioned, that subsidies have created more profit-oriented conversion, meaning that farmers to a higher degree convert due to economic considerations at farm-level (p. 1411). Similarly, Sutherland & Darnhofer (2012) found that farmers adjusted their perceptions of what was considered good farming, e.g., regarding yields and neat fields, in adherence to new rules and economic incentives originating from societal-level (pp. 235, 238). In extension to this, Mzoughi (2011) proposed implementing non-economic benefits to encourage farmers to adopt organic practices, which could entail awards for good-farming practices and hence influence the farmers’ attitudes and ideologies at farm-level through non-economic means (p. 1543).

While the examples mentioned above present how institutions at societal-level may encourage and empower farmers at farm-level, other papers present a more critical perspective of the interlevel dynamics originating from the societal-level. In Poland, changes in the CAP limited farmers’ abilities to join smaller producer associations, as larger farmer associations were financially favored, hence influencing the existence of producer groups and networks at community-level, which may come to affect the farmers’ willingness to adopt organic farming (Kociszewski et al., 2020, p. 16). Some UK farmers believed that governmental policies dictated what and how practices were carried out at farm-level, thus influencing the farmers’ agency (Kings & Ilbery, 2010, p. 444). Furthermore, James & Brown (2019) argued that policies ‘drive, enable, and constrain’ farmers and shape their options for creating bottom-up changes, which may also influence the farmers’ willingness to make changes (pp.

144–146). Hence, various factors originated at societal-level spill over into farm-level and community-level.

Compared to the interlevel dynamics from societal-level found in the reviewed papers, the interlevel dynamics stemming from societal-level were less clear-cut in the narratives of the interviewed Danish farmers. Nonetheless, the most noticeable point in this regard would be the farmers' considerations about farm economy, which were influenced by their positive perceptions of the market conditions (see chapter 6.3.3.1.). Hence, the farmers' stories resembled the findings of Läßle & Rensburg (2011) regarding the increased profit orientation amongst newly converted farmers. Besides market conditions, two farmers also argued that they have limited abilities to create bottom-up changes, which resembled James & Brown's (2019) descriptions. Both Farmer 1 and Farmer 4 called for increased integration of farmers into both research projects and in the public dialogue in general in order to create increase understanding of the challenges the farmers face, and henceforth foster a more equal interaction between factors at farm-level and societal-level (F1, 2021; F4, 2021). Both argued that the farmers' current opportunities to affect factors at societal-level are limited, and thus, the societal-level has a considerable influence on farm-level in their opinions.

7.2.3. Communities of Practice: an addition to 'levels of influence'

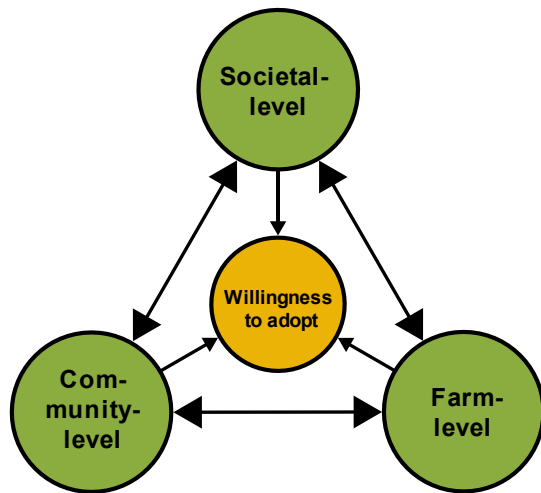
Based on the observations in the empirical data presented above, it is clear that it is valuable to add a dimension of interlevel dynamics to the framework about levels of influence. As the conceptual frameworks presented by Mills et al. (2017) concern behavioral changes, it is implicit that the farmers must undergo a process in which they assess their present situation and evaluate relevant alternatives, making it valuable to reflect on social learning processes in this regard. Leeuwis and Van den Ban (2004) argue that farmers exist and work within ever-changing circumstances and may, in time, face problems that require a change in practice or uptake of a specific innovation. When actors use a specific practice, they most often learn through failures, successes, and experiences, and the learning process can be described as an iterative experiential learning process, where an experience leads to reflections, fostering a cognitive change leading to action, which again creates new experiences, and thus, the circle is repeated (Leeuwis & Van den Ban, 2004, p. 149). While the learning cycle tends to be similar in different learning processes, actors have varying learning 'styles' and are affected by different kinds of stimuli (Leeuwis & Van den Ban, 2004, p. 150). Furthermore, it is also useful to reflect upon the theory of Communities of Practice, in which all actors participate. An actor's learning processes are influenced by participation in Communities of Practice, where knowledge is produced

through actions and interactions that are placed within a cultural and historical context. These interactions and learning processes may, in time, transform and evolve existing social systems (Wenger, 1998, p. 13, 2000, p. 229). Communities of practice's structural dimensions consist of a domain, community, and practice. The domain is the common ground for the Community of Practice's participants and creates a sense of common identity. Meaning that the domain is a bounded area of knowledge in which the participants share a common interest and thus, guides learning processes (Madsen & Noe, 2012, pp. 26–27). The community consists of the 'social fabric of learning', where participants interact, e.g., by sharing ideas, listen and learn from others. The participants may come to affect the community through meaningful actions (Madsen & Noe, 2012, p. 27; Wenger et al., 2002, p. 28). The third component, the practice, encompasses "(...) a set of frameworks, ideas, tools, information, styles, language, stories, and documents that community members share" (Wenger et al., 2002, p. 29). Therefore, the practice is developed by the community and is preserving and evolving the core of the Community of Practice, e.g., its knowledge and purpose. Hence, the practice consists of more than mere actions and may include unwritten rules, social norms, and subtle gestures.

Considerations regarding social learning and Community are meaningful to the framework regarding levels of influence presented by Mills et al. (2017), as it allows for adding a notion of interlevel dynamics, where the three levels alter one another. A Community of Practice does not exist in a vacuum; instead, it is part of a landscape of Communities of Practice, meaning that each Community of Practice contributes to creating broader social systems (Wenger, 2010, pp. 3–4). In continuation hereof, people exist in multiple communities at any given time (Wenger, 2010, p. 6). Meaning that a Community of Practice may be influenced by factors internally from the Community of Practice and externally, e.g., by other Communities of Practice, and thereby develop new narratives, information, or ideas (Krzywoszynska, 2019, p. 6). Considering Mills et al.'s (2017) framework regarding levels of influence, Communities of Practice exist at all three levels; therefore, a Community of Practice, which exists at one level, may overlap and influence Communities of Practice at the other two levels. These interactions between levels may affect the actors' learning cycles and decision-making. For instance, the Communities of Practice at community-level may overlap with Communities of Practice at societal-level and come to affect, e.g., discourses, narratives, and decisions at societal-level, which in turn may affect farmers' willingness to adopt a certain practice. Hence, by adding perspectives of Communities of Practice, the concept about levels of influence becomes more dynamic, as the extension creates a notion of interlevel dynamics, where the different levels affect one another. Hence, based on this, I propose to add this perspective to Mills et al.'s (2017) conceptual framework. The

interaction between the three levels is added to Figure 3, which was presented in chapter 2.3. This would make the visualization look like the following (Figure 8).

Figure 8
Levels of influence and interlevel dynamics



Note. Addition to ‘levels of influence’-framework presented by Mills et al. (2017, 291) and figure 3

with neighbors, either farmers or non-farmers, organizational affiliations, or likewise. ‘Communities’ as used in Communities of Practice may exist at either of the three levels. Agricultural researchers, advisors, and policymakers may all, amongst other actors, constitute separate Communities of Practice at societal-level. Discussion groups and the local communities can be considered as Communities of Practice at community-level. Farming families and on-farm colleagues can be considered as Communities of Practice at farm-level.

Concluding, it will be valuable to add the abovementioned layer when utilizing Mills et al.’s (2017) frameworks for future analyses. The previous analyses and discussions demonstrate that the conceptual framework regarding levels of influence covers many perspectives and influential factors. However, adding the concept of interlevel dynamics allows one to grasp the complexity of what determines farmers’ behavior more fully.

This additional layer to Mills et al.’s (2017) framework regarding levels of influence creates a notion of how factors at one level interact with factors at another, hence grasping more of the complex interrelationships between actors and factors at different levels. When adding this layer to the concept regarding the level of influence, it is important to distinguish and clarify the differences between ‘community’ as presented by Mills et al. (2017) and ‘community’ as used in the theory of Communities of Practice. In the concept presented by Mills et al. (2017), ‘communities’ refers to a definition of communities in which the farmers participate, e.g., with other farmers or

8. Conclusion

This thesis has been working to answer the research question: “*What are the most important factors affecting European and Danish farmers’ decision to convert from conventional to organic farming?*”. To answer the research question, two theoretical frameworks concerning farmers’ abilities, engagement and willingness to convert and societal-, community-, and farm-level’s influence on farmers’ willingness to convert has been guiding a literature review and four case studies with Danish dairy farmers. Based on the literature review and the case studies, it can be concluded that several factors at several levels are affecting farmers’ decision to convert to organic farming. In the literature review, the most noticeable findings regard subsidies, reservations about market prospects, social networks, environmental concerns, advisory services, and distrust in the political sphere. The subsidies affected both the farmers’ ability and willingness to convert as they created an economically viable conversion. This influence originates from societal-level. Various social networks, with both farmers and non-farmers, such as neighbors or the local community, were also crucial concerning farmers’ engagement and as a factor at the community-level influencing the farmers’ willingness to adopt. Social networks were also noted as crucial during organic conversion and maintenance by the four cases. In the literature, farmers were also often found to be somewhat driven by environmental concern and organic ideology and, to a lesser degree, driven by the prospects of the organic market. This finding is contrary to the four Danish dairy farmers' narratives, who all claimed to be highly driven by prospects of the organic market, and some later became motivated by environmental aspects. Regarding farmers’ engagement, both the reviewed literature and the four Danish dairy farmers highlighted the use of advisory services as important to the decision to convert. Skepticism towards the political sphere, which exists at the societal-level, proved to be a barrier to the farmers' decision to convert. This was found both in the literature and amongst the four farmers.

The analyses have been structured according to Mills et al.’s (2017) two theoretical frameworks regarding farmers’ ability, engagement and willingness to adopt, and levels of influence. A central finding of this thesis's analyses was that to preserve the complexity of the farmers’ decision-making regarding the adoption of organic farming, a component of interlevel dynamics should be added to the framework regarding levels of influence. Inspired by the theory of Communities of Practices and based on the findings in the literature and the four Danish cases, a component is added to the framework regarding levels of influence, where farm-level, community-level, and societal-level influence one another and in turn come to influence the farmers' willingness to adopt organic farming. Hence,

by adding this component to Mills et al.'s (2017) framework enables one to grasp more of the complexity surrounding the farmers' decision to adopt organic farming. I propose adding this component in future analyses based on the frameworks of Mills et al. (2017).

9. Outlook

The findings of this thesis may be used to reflect upon how to approach and enhance further dissemination of organic farming in Denmark. Furthermore, future analyses about farmer behavior would benefit from utilizing the frameworks regarding farmers' *ability, engagement and willingness to adopt*, and *levels of influence*, including the additional component of *interlevel dynamics*.

Future policies and initiatives can benefit from reflecting on the results of this thesis. Specifically, four initiatives would be valuable to consider in future efforts to expand organic production in Denmark. First, well-functioning farmer networks are crucial, and efforts should be made to establish and maintain strong networks between organic farmers with similar characteristics, meaning that farmers would be able to participate in discussion groups with farmers who manage farms in similar contexts to their own. This would contribute to maximizing the farmers' benefits of participation. Second, it is important to stimulate the organic market through policy measures, including ensuring that the farmers receive a price premium for their organic products, making their productions economically viable. During interviews with Danish dairy farmers, it became evident that the organic pricing provided by Arla Foods a half year before the complete conversion was highly valued amongst the farmers. Similar measures could be expanded to other dairies and production branches in collaboration between farmers, policymakers, and processors. Third, based on the findings of the analyses, it is important to maintain the present organic subsidy levels at least. Maintaining or increasing subsidy levels may, in time, require political actions in the EU. A fourth suggestion is to increasingly focus on the local communities and create more local food networks. In both the literature and amongst the four Danish dairy farmers, local communities played an essential role in the willingness to remain organic. Hence, initiatives to shorten the food chain and create local food networks could be a means to ensure willingness to remain organic after conversion. Generally speaking, it is important to ensure economic incentives to create an incitement for conversion, while it is important to make sure that strong networks and communities are present to provide support and motivation for the farmers to remain organic. That being said, networks and communities also play a crucial role in the decision to convert.

Finally, further research into organic conversion and uptake of other alternative practices in Denmark should be made to generate more specialized knowledge about what measures would be most efficient in a Danish context. Mills et al.'s (2017) analytical frameworks regarding farmers' ability, engagement, and willingness to convert and levels of influence, including the additional component about interlevel dynamics, are useful analytical tools in future research. In connection to initiatives and

policies that aim to expand the Danish organic agricultural area, the two frameworks are valuable as they constitute an analytical tool that grasps the complexities and interrelations of the factors that influence that farmers' decisions. Hence, policymakers and other actors may get an insight into how farmers' decision-making may be influenced most efficiently, both directly and indirectly. Given the development of the organic sector in the last decade and the renewed attention and objectives to expand the organic area by, e.g., the EU or the newly established Innovation center for Organic Farming in Denmark (Landbrug & Fødevarer, 2021), I argue that it is once again time to turn scholarly attention to this subject if these objectives are to be carried out in practice.

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