



Agroecological Knowledge Processes in Sweden: The case of organic farm advisory services in southern Sweden

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Agroecological knowledge processes in Sweden: The case of organic farm advisory services in southern Sweden

Agroekologiska kunskapsprocesser i Sverige: Exempel från den ekologiska lantbruksrådgivningen i södra Sverige

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Abstract

Transforming our global food system requires knowledge systems that support systems thinking, local adaptation, social learning, and cultural embeddedness, and therefore are based on the knowledge of farmers, peasants, and indigenous people. Agroecology is multidimensional and interdisciplinary, and it takes a systems perspective on our food system. This system's perspective is built on valuing all types of knowledge within our food system, formal and informal, with people producing the food, such as farmers, put at the center (Anderson et al. 2019; Gliessman 2022; Pimbert 2018a; Pimbert 2018b). This thesis explores how agroecological knowledge, in the form of local, experience-based knowledge, is recognized and integrated into organic farm advisory services in Sweden and identifies the drivers and barriers shaping this process. This thesis is based on a qualitative thematic analysis of 10 semi-structured interviews with organic advisors. The findings contribute to agroecological theory by identifying organic advisors as knowledge brokers who simultaneously act as both drivers and barriers to the recognition, integration, and co-creation of agroecological knowledge. Advisors combine and operationalize formal and informal knowledge, where gathering local and experience-based farmers' knowledge is viewed as the core of advising. The findings suggest that greater awareness among advisors of knowledge hierarchies within advisory services could support more participatory and inclusive knowledge processes. Most importantly, this thesis shows that knowledge exists everywhere and in many different forms; it is simply a matter of how we, as humans, take it in and how we as a society value and steward it.

Keywords: Agroecology, Sustainable agriculture, Europe, Agricultural Knowledge and Innovation Systems (AKIS), Local knowledge, Experience-based knowledge

Foreword

This thesis started as something that felt almost impossible and, honestly, something I just wanted to get over with. With the incredible support and guidance from my supervisor, Lisa Blix Germundsson, and the positive input and genuine interest from everyone I talked to along the way, it turned into something completely different: something I actually enjoyed. I found this thesis inspiring and motivating (most of the time), and it gave me a great excuse to talk to people I found interesting.

This thesis has been a long learning process, and along the way, I discovered many “new” topics I would have liked to explore further. For instance, I became curious about why some farmers choose not to use advisors at all. I would also have liked to dig deeper into farmers’ perceptions of local and experience-based knowledge, to mention just a few examples. At the end of this process, I found myself feeling irritated that I had not thought of these topics earlier. I asked myself several times: Why didn’t I look into this? Why didn’t I understand or think of this before?

Then I had to remind myself that I am thinking about these topics now because of all the work I put into this thesis. The process itself made these themes seem obvious in hindsight. I have tried to remind myself that when I started, they were not obvious at all. In many ways, this thesis has been exactly that: a process of learning, discovering new perspectives, and reminding myself that I cannot do everything, and that what I have done is enough.

Lastly, I want to say that this entire master’s program has been full of inspiration and a shared determination that a different food system is possible. We have been a great group of people who want to see change. With that, I want to finish with a quote from last year’s Agroecology Europe Forum, held in the city where I live, Malmö, by Miguel Altieri, a quote that makes me determined to continue working with agroecology.

If we really want to feed the world without destroying nature there’s only one path, and that’s Agroecology

(Agroecology Europe 2025)

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Abbreviations

Abbreviation	Description
AKIS	Agricultural Knowledge and Innovation Systems
CAP	Common Agricultural Policy

1. Introduction

Agroecology is multidimensional and interdisciplinary, and it takes a systems perspective on our food system. This system's perspective is built on valuing all types of knowledge within our food system, formal and informal, with people producing the food, such as farmers, at the centre. Within agroecology, there is an increasing recognition that scientific knowledge alone is insufficient. The transformation of our global food system requires knowledge systems that support systems thinking, local adaptation, social learning, and cultural embeddedness, and therefore are based on the knowledge of farmers, peasants, and indigenous people (Anderson et al. 2019; Gliessman 2022; Pimbert 2018a; Pimbert 2018b). In this thesis, these thoughts on knowledge within agroecology are examined through the case of the Swedish organic advisory services.

1.1 Agroecology and transformation

Agroecology is increasingly gaining attention as a pathway toward a sustainable and just food system (Savels et al. 2024). In a time of social, ecological, and economic crisis, a transformation of our global food system is needed (Anderson et al. 2021:1). The agricultural model of today, promoting large-scale conventional agriculture and global value chains, has reached its limits (Agroecology Europe 2025). Agroecology is not a quick fix or silver bullet to the problem that is our current food system. Instead, it is about transformation and changing our entire food system at its core. Agroecology is multidimensional and based on systems thinking, and it is about facilitating a transition away from resource-intensive, high external input-reliant farming systems, towards a more sustainable food system based on food sovereignty and ecological processes (Gliessman 2015:276–277), where local knowledge and participatory processes are at the core of the transformation (Anderson et al. 2021:2).

The science and practices of agroecology are as old as agriculture (Altieri 1987). In a purely scientific setting, the term agroecology was first used a hundred years ago by Bensin (1928)¹ (Wezel et al. 2009). During its scientific origin, agroecology was primarily understood as a tool for ecological management of farming systems, focusing on biological interactions, nutrient cycling, and understanding and implementing natural processes on a field or farm level (Gliessman 2015:276–277). Since then, agroecology has evolved from a field and farm level perspective to that of the entire food system. Most of the development

¹ This source was not possible to locate and therefore is referred to through Wezel et al. (2009)

of agroecology as a concept has been undertaken in parts of Latin America (Gliessman et al. 2023; Rosset & Altieri 2017; Wezel et al. 2009). Ecological sciences have been combined with context-specific, generational, and experience-based indigenous and/or farmers' knowledge to emphasize intercultural knowledge processes (Pimbert 2018a:11). The complexity and flexibility of agroecology are well described by Gliessman (2018) in one of his publications:

Agroecology is the integration of research, education, action, and change that brings sustainability to all parts of the food system: ecological, economic, and social. It's transdisciplinary in that it values all forms of knowledge and experience in food system change. It's participatory in that it requires the involvement of all stakeholders from the farm to the table and everyone in between. And it is action-oriented because it confronts the economic and political power structures of the current industrial food system with alternative social structures and policy action. The approach is grounded in ecological thinking, where a holistic, systems-level understanding of food system sustainability is required. (Gliessman 2018:599)

To enable an agroecological transformation of the global food system, there is increasing recognition that technical and scientific knowledge alone is insufficient (Anderson et al. 2019; Gliessman 2022; Pimbert 2018a; Pimbert 2018b). The transformation of our global food system requires knowledge systems that support systems thinking, local adaptation, social learning, and cultural embeddedness.

1.2 Agroecology and Knowledge

Central to agroecology is the role of knowledge and, particularly, the recognition and integration of diverse forms of knowledge (Gliessman 2018). Altieri and Nicholls (2012) state that instead of being resource-intensive, agroecology is knowledge-intensive (Altieri & Nicholls, 2012). Agroecological knowledge includes scientific knowledge, but also indigenous, local, traditional, and experience-based knowledge held by farmers and other food system actors (Anderson et al. 2021:68).

In this thesis knowledge is understood as divided into two categories, formal and informal knowledge, where formal knowledge is defined as knowledge derived from institutions such as academia, while informal knowledge is all sorts of knowledge outside of these institutions, such as local and experience-based farmers' knowledge², which is context specific, developed over time and based on a system perspective (Anderson et al. 2021). From an agroecological perspective,

² Local and experience-based knowledge is, in this thesis, understood as an expression of agroecological knowledge in a Swedish context. It includes all sort of knowledge and can be context specific, built on practical or historical experience and is usually not scientifically proven

it is argued that formal scientific knowledge is valued higher than informal knowledge in mainstream agricultural knowledge systems. These hierarchies exist and are shaped by social, economic, and political power structures (Anderson et al. 2021; Pimbert 2018a).

According to the early thoughts of Altieri (1987), the different forms of informal knowledge, mostly produced by local people in “non-western” societies, have been disregarded and destroyed throughout modern history because of the dramatic transformation of these societies. Colonialism, as well as the rise of positivist science, has led to the fact that more holistic and multifaceted agricultural knowledge systems have not reached the stage of the formal scientific arena (Altieri 1987). In agroecology, it is argued that formal agricultural knowledge is focused on practices that increase the productivity and yield of the field or agricultural system. Informal agricultural knowledge is usually concerned with the function and sustainability of the entire agricultural system (Altieri 1987; Anderson et al. 2021; Pimbert 2018a).

What agroecology does is challenge this imbalance. Agroecology looks at how agricultural systems have evolved over a long period of time and the interactions of people in these systems, with the farmer at the centre (Altieri 1987), where collaboration between knowledge systems through co-creation is advocated (Anderson et al. 2021:77). Therefore, in this thesis, agroecology is understood as inherently political because transforming our food system requires transforming knowledge hierarchies and governance structures. Agroecology is not anti-expert. Instead, it aims at redefining the role of researchers, teachers, and advisors, rather than spreading knowledge, they facilitate knowledge-sharing and co-creation within communities (Anderson et al. 2021:77). Based on this understanding, formal and informal knowledge should therefore not be seen as oppositional, but as complementary forms that in a sustainable knowledge system should interact through collaborative processes.

Within the realm of agroecological knowledge, it is argued that research should be created by and for the farmers and not only derived from them, but there should also be a mutual benefit connected to research (Pimbert 2018b). In this study, the mutual benefit of knowledge creation is understood through the concept of co-creation, where co-creation is understood as:

“a collaborative process involving 2 or more actors, who are intentionally integrating their knowledge and learning, resulting in the development of insights and solutions that would not otherwise be reached independently” (Utter et al. 2021:1).

Co-creation, therefore, serves as a prerequisite for acknowledging local and experience-based knowledge. Co-creation requires the collaboration of different actors, such as researchers, advisors, and farmers, to co-produce knowledge. Instead of the linear way of producing knowledge, where the farmers and rural communities are seen as the end-consumer of knowledge. Co-creation recognizes and integrates local and experimental knowledge held by the farmers and rural communities (Anderson et al. 2021; Wezel et al. 2020).

1.3 Agroecology in Europe and Sweden

Despite its long history, in comparison to Latin America and other parts of the world, agroecology as a concept is relatively new in Europe. According to Anderson et al. (2019b), this is due to several factors. The first one is that in Europe, the tradition of informal knowledge creation, such as popular education, which is a cornerstone of agroecology, is weak due to the neoliberal structure of society. Secondly, there has been a low level of peasant social movements in Europe embracing agroecology for food sovereignty (Anderson et al. 2019b). This results in a situation where different actors, such as governmental institutions, academia, and non-governmental institutions, are competing around the definition and use of agroecology and the knowledge systems linked to it (Anderson et al. 2019a; Gliessman 2018).

On the other hand, in recent years, an increasing interest in the ecological benefits of agroecological interventions in Europe has emerged. A recent meta-study found that agroecological interventions had positive overall effects on biodiversity and climate change mitigation. When both were assessed together, positive synergies were common, largely driven by soil-related processes such as micro-decomposer biodiversity and soil carbon storage (Blaix et al. 2026). Another study undertaken in Romania found that farmers are positive about adapting agroecological practices if there are spaces for adequate knowledge exchange between farmers (Lianu et al. 2023). These studies, together with other studies on agroecology in Europe (Costa-Pereira et al. 2024; Chongtham 2024; Gutiérrez-Briceño et al. 2025; Marino et al. 2023; Savels et al. 2024b; Vicente-Vicente et al. 2023), show that agroecological principles hold relevance in a European context. However, research remains scarce, especially on agroecological knowledge and co-creation (Lianu et al. 2023; Vicente-Vicente et al. 2023), which makes it unclear how such knowledge is recognized and integrated within a high-income agricultural context (Anderson et al. 2019b).

Therefore, it is of interest to further examine the agroecological knowledge processes present in Europe. One such context is the Swedish agricultural sector,

which operates within a highly competitive global market and is strongly shaped by external forces such as world market prices, the EU's Common Agricultural Policy, and ongoing technological development. Over the past century, mechanization, increased use of external inputs, and genetic improvement of crops and livestock, combined with market forces, have driven specialization, farm enlargement, and economies of scale, transforming Swedish agriculture from a predominantly small-scale as well as locally embedded system into a more industrialized and internationally integrated one (Jordbrukets utveckling - Sveriges miljömål n.d.). These circumstances make the Swedish agricultural sector an interesting case to examine how agroecological knowledge processes are integrated in a high-income agricultural context.

1.4 Farm advisory services and AKIS

The farm advisory service is a key actor when it comes to knowledge creation and dispersion within the agricultural sector in Sweden. In Europe and Sweden specifically, the farm advisory services operate under the Agricultural Knowledge and Innovation System (AKIS) (Höckert 2017). AKIS can both be used as a theoretical model and a tool for mapping actors and other agents within a specific context (Blix Germundsson 2021). AKIS is continuously developing both as a concept and an actual system, and in this thesis, it is understood as the system of people and organizations that should encourage mutual learning and the generation and sharing of knowledge and innovation that are connected to the agricultural as well as connecting fields (EU SCAR-AKIS 2023).

AKIS includes farmers, advisors, researchers, and the institutions surrounding it, as well as various food system actors such as consumers, retailers, suppliers, banks, and processors (Höckert 2017). In Europe, the AKIS system is criticized for being “locked into old paradigms based on linear approaches and conventional assumptions” (EU SCAR 2009:63) rather than a driver for innovation and systemic change. Instead of facilitating interactive and participatory knowledge exchange, AKIS has been accused of reproducing top-down models of knowledge transfer (Brändström 2015; EU SCAR 2009; EU SCAR 2012; Höckert 2017), where the current AKIS is not suitable for advancing agriculture into a more sustainable one (EU SCAR 2012; Höckert 2017). In response to these critiques, recent EU policy has emphasized the need for a more integrated and collaborative AKIS. Particularly in the latest reform of the Common Agricultural Policy (CAP 2023-2027), where AKIS is positioned as a key mechanism for improving collaboration between advisors, researchers, and each national CAP network, focusing on supporting innovation and more effective knowledge sharing within the agricultural sector (Regulation (EU) 2021/2115). At the EU level, farm

advisors are seen as both collectors and disseminators of farmers' needs and opportunities within AKIS, and thereby they can foster innovation within the agricultural sector (EU SCAR AKIS 2019).

Previous research on AKIS and the farm advisory services in Sweden, in particular, has shown the same tendencies as that on the EU level. For example, Höcker (2017) found that the current farm advisory services in Sweden are largely characterized by reductionist, modular approaches and single-loop learning, which limit their ability to deal with complex, system-level challenges related to sustainable development and long-term farm development. It is further highlighted that there is a need to investigate how advisory systems can move toward more systemic, collaborative forms of knowledge development, where focus is shifted from individual knowing to that of the group (Höckert 2017). A study examining Swedish farmers' and advisors' perceptions of advisory services found that their expectations are not always aligned, leading to miscommunication and the delivery of inadequate knowledge (Krafft et al. 2022). In addition, in a summarizing report, it is stated that old hierarchical innovation structures are still present in agricultural knowledge systems, including farm advisory systems, where the farmers are still seen as an end user of knowledge and not a co-creator of knowledge (Brändström 2015). The structure of the Swedish advisory services will be further elaborated on in the materials and methods section, however worth to note here is that the advisory services in Sweden operates under certain economic structures, where advising is either paid for by the farmer or the state (Blix Germundsson 2024), which indicates that there is a certain level of expectation that the advisor should provide a certain service towards the farmers, usually in the form of a knowledge transfer.

When looking specifically at the organic advisory services, which is the focus of this thesis, research in Europe on organic farming and knowledge processes has shown that there is a strong reliance on experimental knowledge within this sector due to the diversity and complexity of farming with nature. One study by Leonnig and Nielsen (2026) showed that farmers focus specifically on personal experimentation since there is no other option available. In this study, similar to others (Sáenz et al. 2024) they noted that peer-to-peer learning was increasingly gaining importance among the farmers, this included learning from farmers, advisors, local field trials, meetings and online sources, where networks for sharing such knowledge was identified as integral however their level of efficiency was questioned, where competition among farmers was identified as a barrier to sharing experience-based knowledge (Leonnig & Nielsen 2026).

Another study on farmers use of advisors services and research in Hungary and the UK (Rust et al. 2021) showed that farmers are moving away from traditional knowledge sources such as agricultural periodicals and advisors when it comes to gaining new information on soil health promoting practices, instead discussion and learning from other farmers where more common, a similar finding was made in a study from Spain (Sáenz et al. 2024). The Hungary and UK study also showed that, in cases where farmers turned to advisors and other university professionals, these relationships were usually long-standing, fostering trust. In addition, this study demonstrated that trusted mediators or knowledge brokers can serve an essential function in connecting different knowledge actors, facilitating exchange between farmers, advisors and researchers who may otherwise not interact. Such actors can facilitate bridging fragmented networks, strengthen trust across groups and support the wider circulation and co-creation of knowledge, which is particularly relevant in the context of agroecological transformation (Rust et al. 2021).

The results presented throughout this introduction point to a potential misalignment between farm advisory services in Europe in general and Sweden in particular and agroecological knowledge principles. While agroecology emphasizes co-creation, context specificity and fair knowledge integration, advisory services may still operate within more hierarchical and standardized models. Building on this, agroecological principles are aimed at being generically formulated but locally applied, generating diverse practices suited to local circumstances (Sinclair et al. 2019; Wezel et al. 2020). Co-creation and equitable involvement of farmers' local and experience-based knowledge are therefore central to agroecological science and practices. In this thesis, it is argued, as in that of Wezel et al. (2020), that it remains unclear how these principles are operationalized within formal advisory services, particularly in high-income agricultural contexts (Anderson et al. 2019b). This thesis will therefore focus on the recognition and integration of local farmers' knowledge within agricultural advisory services in Sweden, to further the understanding of how agroecological principles are operationalized in a high-income agricultural context.

2. Research Objectives

This thesis aims to explore how agroecological knowledge, in the form of local, experience-based farmers' knowledge, is recognized and integrated into organic farm advisory services in Sweden, and to identify the drivers and barriers shaping this process. The farm advisory services are approached through an agroecological perspective, where knowledge is understood as shaped by power relations and where co-creation of knowledge is central to transforming the food system. The thesis, therefore, takes a dual analytical approach, examining the aim both in relation to how agroecological knowledge is operationalized within a high-income agricultural context and to farm advisory services in Sweden from an agroecological perspective.

The thesis is guided by two research questions:

How is local and experience-based farmers' knowledge recognized and integrated within organic farm advisory services?

What are the drivers and barriers for the integration of local and experience-based farmers' knowledge within organic farm advisory services?

Previous research on organic farm advisory services has shown that trial-and-error and experience-based knowledge are fundamental to organic agricultural practices (Leonnig & Nielsen, 2025; Sáenz et al., 2024). Indicating agroecological tendencies in terms of a wider use and need of different forms of knowledge, both formal and informal, to form the knowledge system that is relevant for organic practices and therefore of interest to examine from an agroecological point of view (Anderson et al. 2021). Focusing on the small organic sector in Sweden (The Swedish Board of Agriculture 2025) provides a relatively homogeneous group of actors, making it possible to identify patterns and themes within the scope of this thesis.

In this thesis, it is assumed that the transformation to a more agroecological AKIS in Sweden requires a shift from linear knowledge transfer to recognizing farmers as co-creators of knowledge, where local and experience-based knowledge is recognized and integrated into the knowledge system.

3. Theoretical Framework

In this thesis, it is assumed that the recognition and integration of local and experience-based knowledge requires that farmers are understood as relevant knowledge holders and active contributors to knowledge processes, in which co-creation plays a central role. Co-creation is a collaborative process that requires communication, collaboration, and dialogue, and can be understood as a way of learning together in which new knowledge is created (Utter et al. 2021). A specific emphasis is placed on the learning process to understand how agroecological knowledge is operationalized within the organic farm advisory services. In this thesis, Vella's (1994) 12 principles of adult learning are viewed as an add-on to agroecological theories of knowledge and co-creation. The principles are used to provide a foundation for analyzing the characteristics of the learning processes identified in the interviews conducted in this study. The learning processes are understood as the interaction between advisors and farmers within the structure of the farm advisory services, which can take many forms. The theoretical framework presented below was developed in consideration of the theories on agroecology and knowledge to further the understanding of the agroecological knowledge processes existing within the organic farming advisory services.

3.1 The 12 principles of adult learning

Vella (1994) assumes that the learning processes of adults are the most effective and relevant in dialogue. According to Vella (1994), adults hold a great amount of life experiences and will learn best when relating new knowledge to their own life, with the help of a teacher. The 12 principles of adult learning are proposed as different practices to develop this dialogue. The principles all have in common that they focus on the relationship and dynamics between learners and teachers, which in the case of this thesis is understood as the relation between farmers and advisors within the organic farm advisory services. Based on this thesis' perspective on agroecology and knowledge, 7 of the 12 principles have been chosen for this thesis, as they further concentrate the analytical focus.

The twelve principles of adult learning (the ones used in this thesis are in bold)

- **Needs assessment:** participation of the learners in naming what is to be learned.
- **Safety** in the environment and the process. We create a context for learning. That context can be made safe.
- **Sound relationships** between teacher and learner and among learners.
- Sequence of content and reinforcement.

- **Praxis** action with reflection or learning by doing.
- Respect for learners as decision makers.
- Ideas, feelings, and actions: cognitive, affective, and psychomotor aspects of learning.
- **Immediacy** of learning.
- Clear roles and role development.
- **Teamwork** and use of small groups.
- Engagement of the learners in what they are learning.
- **Accountability**: how do they know they know?

Principle 1: Needs assessment

Needs assessment is the first principle of adult learning, as presented by Vella (1994), and emphasizes that learners bring different experiences, expectations, and forms of knowledge into every learning situation (Vella 1994). Therefore, rather than assuming that uniform learning needs exist among participants, Vella (1994) argues that effective learning processes begin with the identification of each learner's preexisting knowledge, challenges faced, and context-relevant knowledge. This learning process requires dialogue between the teacher and the learner, in which both contribute to defining learning priorities. In this sense, needs assessment is an ongoing listening process. Principle 1: recognizes learners as relevant knowledge holders and active contributors to learning processes, where needs assessment in this form can support the development of more context-specific forms of knowledge (Vella 1994).

Principle 2: Safety

The second principle of adult learning is Safety, which emphasizes the importance of creating an inviting learning environment where learners feel safe. Vella (1994) identifies five aspects of safety. The first and second aspects focus on how safety is built through trust in the teacher's competence and relevance, and through clear communication of competence and experience. The third aspect focuses on fostering safety within a learning group by forming smaller groups, which create a sense of spatial security. This aspect of safety highlights the importance of taking a stepwise approach to learning, where safety can be achieved by starting simple and slowly advancing to more complex tasks. Lastly, the fifth aspect focuses on the importance of creating a nonjudgmental environment through affirmation (Vella 1994).

Principle 3: Sound relationships

Sound relationships, according to Vella (1994), are built on respect, dialogue, and mutual learning. Such relationships are particularly important since learning environments often contain inherent power dynamics between the teacher and the

learner. Principle 3: sound relationships assume that traditional teaching settings may reinforce hierarchical teacher-learner power dynamics, in which teachers control knowledge and learners remain passive recipients. Therefore, a specific emphasis is put on dialogue-based learning approaches, to have the potential to challenge these dynamics by creating relationships where learners are recognized as relevant contributors to the learning processes. In this sense, effective implementation of sound relationships helps distribute power within educational contexts, encouraging an environment of trust and shared responsibility that supports more participatory and equitable knowledge exchange (Vella 1994).

Principle 5: Praxis

The praxis principle is understood as a combination of action and reflection where actors develop knowledge by applying ideas in practice and reflecting on their outcomes, rather than learning through more theoretical or abstract instructions. This process is assumed to allow learners to reinterpret and adapt knowledge to their own context, moving between general principles and concrete experiences (Vella 1994), which is deemed relevant in an agricultural context, where theory and practical experience are closely connected.

Principle 8: Immediacy

According to Vella (1994), principle 8: Immediacy refers to the importance of the perceived usefulness of knowledge. It emphasizes that learners are more engaged when new knowledge can be applied directly to their current contexts, and therefore, there is a need for a short time span between receiving knowledge and finding use for it. Immediacy focuses on effective learning processes that create opportunities for learners to apply their new skills, knowledge, or perspectives immediately and reflect on their effects. Based on this understanding, immediacy therefore supports sustained engagement by linking learning processes closely to the learner's lived context and ongoing activities (Vella 1994).

Principle 10 Teamwork

Principle 10 highlights teamwork as both a method and a condition for effective adult learning. Teams are assumed to enable learners to engage more actively, draw on peer knowledge, and learn in collaboration through dialogue and shared tasks. Here, learners should be allowed to influence the formation of the teams and the roles within the team (Vella 1994). For principle 10, teamwork can be understood as the embodiment of participatory learning, where knowledge is co-created through collective sharing, engagement, and interaction with other learners.

Principle 12: Accountability

According to Vella (1994), accountability refers to the mutual responsibility between the teacher and the learners to ensure that learning processes are meaningful, relevant, and lead to actual outcomes. This assumes that “all learners come with experience as well as personal perceptions of the world based on that experience and all deserve respect as subjects of a learning dialogue” (Vella 1994:27). This assumption questions the traditional hierarchical models of learning by focusing on participatory learning processes in which knowledge is co-created, instead of being transferred in a linear fashion.

Lastly, the seven principles of adult learning included in this theoretical framework should be seen as an extension of agroecological theory on knowledge. In this thesis it is assumed that if these principles are effectively implemented within the farm advisory services it provides a solid foundation for agroecological knowledge processes in Sweden.

The following principles of adult learning were not included:

- Principle 4, Sequence and reinforcement, was not included since it focuses on pedagogical structures and learning context progression rather than that of power dynamics and knowledge co-creation.
- Principle 6, Respect for learners as decision makers, was not included explicitly, since the ideas related to agroecology, such as co-creation, participation, and redistribution of power in knowledge systems, are included in several of the other principles used in this theoretical framework, such as Immediacy and Accountability.
- Principle 7, on Ideas, Feelings, and Actions, was not included since this thesis does not focus on the combination of cognitive, emotional, and behavioral dimensions of learning.
- Principle 9, Clear Roles, was not included since the power dynamics of separate roles within the advisory system are sufficiently covered by the principles included, such as Sound Relationships, Teamwork, and Accountability.
- The last principle, 11 Engagement, where the pedagogical structures to ensure active participation were not regarded as essential for this thesis, and where mechanisms surrounding active participation are sufficiently brought up in the other principles included in this thesis.

4. Material & Methods

4.1 Research design and approach

This study adopts a qualitative research design to explore how local and experience-based farmer knowledge is recognized and integrated into farm advisory services in Sweden. Given the study's focus on knowledge processes, co-creation, and learning, a qualitative approach is appropriate as it allows for an in-depth understanding of how these processes are experienced, interpreted, and reenacted by the advisors within the Swedish AKIS (Clark et al. 2021:351).

Through semi-structured interviews, this study takes an interpretive approach searching for direct and underlying meanings in how knowledge is understood, produced, and shared within organic farm advisory services. The analysis is based on a theoretically informed approach that combines agroecological perspectives on knowledge and co-creation with selected principles of adult learning developed by Vella (1994). This framework is used to examine the experiences and thoughts regarding knowledge processes from the perspective of advisors in organic advisory services in Sweden, and to examine how these processes support or constrain the recognition and integration of local, experience-based farmers' knowledge.

4.2 Organic farm advisory services in southern Sweden

For this thesis, the farm advisory services in southern Sweden have been chosen as the subject and area of investigation to answer the research questions of how local and experience-based knowledge is recognized and integrated within agricultural advisory services and what the drivers and barriers are for their continuous integration and recognition. This is because Sweden is, in general, an understudied area of agroecology and agroecological knowledge in particular.

4.2.1 The organic farm advisory services in Sweden

In this thesis the focus is on the organic sector of farm advisory services, because the organic sector is assumed to be the sector closest to that of agroecology, in terms of its documented focus on trial and error and experience-based knowledge as a fundamental aspect of organic agricultural practices (Leonnig & Nielsen 2026), and therefore can serve as a starting point for examining AKIS from an agroecological point of view. The farm advisory services in Sweden can be divided into five categories: independent advisory services, advisory services a

part of a sales strategy, public advisory services, other advisory and innovation support services, and knowledge provision in reindeer herding. This categorization is based on the work of Germundsson (2024). The organic advisory services mainly operate within three out of the five advisory categories. The first is independent advisory services, which make up the largest part of advisory services in Sweden today, including both farmer-based organizations and private firms. The second is public advisory services, such as the Swedish Board of Agriculture and the County Administrative Boards, which mostly serve as back-office support, procuring advisory services with an environmental emphasis. The last category relevant for this study is the other advisory and innovation support services (Blix Germundsson 2024), which in this thesis constitute civil society organizations.

Within the context of this study, agricultural advisory services in southern Sweden, situated in a high-income, industrialized agricultural setting (Jordbrukets utveckling - Sveriges miljömål n.d.), the analytical focus is specifically on local, experience-based farmers' knowledge. Unlike agroecological studies conducted in contexts where indigenous or traditional knowledge plays a vital role, southern Sweden is characterized by a predominantly industrialized agricultural system with a limited presence of indigenous farming practices. While Sámi knowledge systems are highly relevant in northern Sweden, they are not central to the agricultural landscape of southern Sweden (Sápmi-karta - Samer.se n.d.). Therefore, in this study, the most contextually relevant form of knowledge is deemed to be local, and experience-based knowledge held by farmers and other actors in the food system.

4.3 Participants

This study used purposive sampling (Clark et al. 2021:377), in which both the geographical scope and participants were strategically selected based on their relevance to the research objectives and questions. The study started with a specific focus on Scania, however through snowballing the geographical area ended up including advisors and other actors from neighbouring regions. Therefore, this case study focuses on southern Sweden, a region of particular importance for Swedish agriculture, making it a relevant setting for examining agroecological knowledge processes. The participants were selected to represent a range of the actors involved in the organic farm advisory services in the region, including governmental, regional, private, farm-based organizations, and civil society actors. The civil society actors were purposively included in accordance with agroecological thinking, where a considerable part of the knowledge relevant to agroecological farming and food production is assumed to be produced outside

traditional institutions such as independent and governmental advisory agencies. This approach aimed to capture diverse perspectives within the advisory system. In addition, snowball sampling was used within the purposive sampling strategy to identify further relevant actors in the field (Clark et al., 2021:383), allowing the study to expand its empirical scope through recommendations from initial participants.

In total, 16 people were interviewed during 14 interviews; two interviews were conducted in pairs. 9 of these interviews were transcribed, coded and analysed, since these interviews included all interviewees who work or had previously worked as advisors (see Table 1) and therefore provided the main body of the analysis. Table 1 presents the 10 interviewees that are referred to directly or indirectly in the result section. Interviewees 7 and 8 were interviewed together, and the rest were interviewed individually. Column two refers to the title the interviewees assigned themselves during the interviews. The 6 additional people interviewed (not accounted for in Table 1) were with actors who are operating within AKIS. While they were not explicitly included in the result section because they did not work as advisors and had no advising experience, they provided great inspiration and thoughts for the discussion section which has helped form this thesis. They also helped in finding additional interviewees.

Table 1: List of interviewees, their job title and type of organization

Interviewee	Job title	Organization
1	Advisor & coordinator	County Administrative Board
2	Advisor & farmer	Farm Advisory Organization
3	Farmer & advisor	Civil Society Organization
4	Advisor	Private Actor
5	Advisor	Swedish Board of Agriculture
6	Advisor	Farm Advisory Organization
7a	Advisor & farmer	Private Actor
8b	Advisor & farmer	Private Actor
9	Advisor & coordinator	Civil Society Organization
10	Farmer & advisor	Private Actor

4.4 Data collection

To assess the view and experience on agroecological knowledge processes and learning within the organic farm advisory services, semi-structured interviews were conducted with each participant based on an interview guide (see Appendix 1). This study aims to investigate a topic that considers the experiences and views

of a specific group of people; therefore, a semi-structured interview was deemed fitting since it is adaptable and flexible to each interview. However, at the same time, it holds a certain degree of coherence between the interviews, allowing for comparison and finding patterns between the interviews. Semi-structured interviews are also assumed to bring a fairly detailed response on the topic, without moving too far away from the topic (Clark et al. 2021). The interview guide was developed based on research objectives, research questions, theoretical framework, and the work of Clark et al. (2021).

12 of the 14 interviews were conducted over the phone or online due to time and geographical constraints on both my end and the interviewees'. However, in hindsight, conducting the interviews remotely enabled a greater inclusion of a mix of actors who would otherwise not have been possible to interview. Lastly, it is also interesting to note that the 10 advisor interviews have a 50/50 gender divide; this was not aimed for, but it is worth noting. The interviews were transcribed verbatim, and the citations were translated from Swedish to English by me, with the aim of keeping the original tone and message of the citation.

4.5 Analytical framework

This thesis is based on a thematic analysis, with both a deductive and concept-driven phase and an inductive and data-driven phase, which was inspired by the work of Gibbs (2012) and Miles et al. (2020). The thematic analysis is based on five major themes, four of which were pre-determined and formulated before data was gathered and is based on previous literature on agroecology and the farm advisory services in Sweden and Europe, and Vella's (1994) 12 principles of adult learning. These four themes are Recognition, Integration, Co-creation, and Drivers and Barriers, which both worked as a guide during the interviews and the coding. The fifth theme is the role of the advisor, and first emerged as a response to a statement of an advisor, asking what makes up a good advisor, later on when coding it became evident that during the interviews all advisors while answering different questions, assigned certain values and characteristics to themselves or other advisors, both directly and indirectly, making this theme an interesting add on to the thematic analysis.

The transcripts have been coded based on a three-step coding, with a first initial coding where everything that is of interest, both relating to the predetermined themes and others, was coded. Then a second coding was made, focusing on the use and understanding of different forms of knowledge. In the third coding, the theme, the role of the advisor, was focused on before starting the writing process.

During the writing process, continuous analysis of the transcripts was undertaken, analysing them based on the theoretical framework (Vella 1994).

4.6 Ethical consideration and limitations

All interviewees but one, both the 10 advisors as well as the other 5, agreed to have their interview recorded, either through a written agreement, through an agreement form by email, or verbally in the other cases. The one interviewee who did not agree to being recorded still agreed that the information gathered in the interview could be used in the thesis. To transcribe the interviews, an AI tool called Klang AI was used to do the initial transcribing, then a second transcribing was done by me to check for misinterpretations. Klang AI was used since it encrypts all data that is uploaded and does not train its AI on data uploaded, as well as works in accordance with GDPR. It was not until the end that I thought of the fact that I did not ask all interviewees explicitly if they were okay with me using AI to transcribe their interviews. Worth noting is that when interviewees asked about it, I explained my process. However, if I were to do it again, I would include that I use AI to transcribe when asking for permission. The Klang AI account and the data on it were deleted after finishing the transcriptions.

In terms of the limitation of the scope of the thesis, the organic advisory services are considered a niche within the farm advisory services in Sweden. This research is still of value, since the research on agroecology and knowledge in Sweden has to start somewhere, and mapping knowledge processes within the organic sectors is a first step in understanding what agroecology is and can be in Sweden. Lastly, there is always the question in research of whether you find the results you want because you are looking for them, or because they are actually there, and how do you ask the right questions, and can you ask the right questions? These questions have been considered during the interviews, transcription period, coding, and analysis. There is no clear answer or solution to this question, but being reflective of one's own work and considering one's own perspective is a good starting point.

5. Results & Analysis

In this section the results from the interviews will be presented and analysed based on 7 out of the 12 of Vella's (1994) principles of adult learning. The recognition and integration of local and experience-based farmers' knowledge is assumed to occur when Vella's (1994) principles of adult learning are practiced.

5.1 Recognition of local and experience-based knowledge

While conducting the interviews, both local and experience-based farmers' knowledge was raised by the advisors. This will be presented by two statements from two different advisors. The first advisor who focuses on soil health-improving practices stated the following:

I would say that experience is what people are most interested in. (...) We're almost always on a farm, so we spend a lot of time at different farms. We make sure to be at different farms for different courses. They really want to, the participants really want to know concretely, how have you actually done things in practice? How did you think about it? What works and what doesn't? What things have you tried? What machines are you using? It's very much like that. They're not really looking for just principles, the principles are one thing, we already know those. But how do you translate them into my crop rotation, on my farm, in my context? So, this practical experience really outweighs everything else, I would say. (Interviewee 9).

In this statement a clear recognition and appreciation of practical knowledge, based on the experience of several farmers, becomes evident. Where the advisor is describing how they are attempting to meet the expectations of the farmers. In addition, another advisor that had been working within advising until recently said that;

20 years ago, I theoretically knew what varieties we need for organic production. But now I know physically how bad it can turn out when there are too many weeds and we have varieties that don't compete and that aren't healthy. The thing of having experienced that and felt that in real life. That can't be replaced by theoretical knowledge. (Interviewee 3)

The second statement shows a clear emotional connection to the usefulness of practical knowledge. This advisor, together with other advisors interviewed, brings forward their own local and experience-based farmers' knowledge. Furthermore, during all of the interviews, it also became evident that most of the advisors value the knowledge that comes from practical experience. Lastly, almost all of the advisors interviewed have or have had their own farm or other

practical experience working in agriculture. This shows that within the organic farm advisory services, not only farmers are the carriers of local and experience-based farmers' knowledge, this will also be further elaborated in section 5.4.

The perceived utility of local and experience-based farmers' knowledge among both farmers and advisors can be understood as the application of principle 5 Praxis by Vella (1994), where it is assumed that adult learning happens when knowledge can be practically applied, where testing and applying ideas in practice will aid the participant or participants to adapt knowledge to their own context. In addition, the first statement connects to principle 8, Immediacy, where the feeling of perceived usefulness of the practical and experience-based knowledge that comes from a field visit highlights the importance of a short time span between receiving and applying knowledge. This results in a high level of recognition of these forms of knowledge.

When discussing the meaning or characteristics of local and experience-based knowledge, different understandings and perceptions came up, as would be expected from a discussion on such a broad topic. However, a few trends were detected.

First, local and experience-based knowledge were usually assigned distinctive characteristics. One advisor describes local knowledge as "to consider the surroundings" and asking the farmer about their yield to gain an understanding of the "local potential" (Interviewee 4). This statement shows that local knowledge is geographically connected and focused on the specific conditions of a certain area, such as soil and weather conditions. In addition, local knowledge was not exclusive to understanding natural processes in one area. It could also include knowledge about the local market, and potential collaboration opportunities with other farmers and agricultural actors in the area.

Experience-based knowledge, on the other hand, was usually described as this advisor explained it: "The practical knowledge is the knowledge of the hand and the knowledge based on experience" (Interviewee 3), indicating that experience-based knowledge comes from practice. Several advisors also describe experience-based knowledge as something that is developed over time, with some sort of practical aspect to it.

These descriptions of local and experience-based knowledge once more indicate a clear utility aspect connected to the recognition of these forms of knowledge. Where Praxis and Immediacy are of importance, where the adaptation and engagement with these forms of knowledge is connected to their level of practical

application, the advisors identified that the level of adaptation and engagement with knowledge, among farmers, is connected to the level of the practical nature and application of knowledge (Vella 1994).

While these trends were identified, it also became evident that the understanding and use of different forms of knowledge is far more complex than a divide between local and experience-based knowledge. One advisor answered the following on the question of what their understanding of local and experience-based knowledge is:

“Then I’m thinking that geographically, local, locally, regionally, nearby, in the surrounding area. A kind of knowledge that might be a bit specific. That one has built up, well, over the years. Experience-based knowledge, for me, is a broader concept. Not this geographically limiting one. Then you can have experience-based knowledge, so to speak, within the local, right.” (Interviewee 2)

This statement shows that experience-based knowledge is not exclusive to being understood as knowledge developed over time; the same can be said about local knowledge. In addition, this statement shows that different forms of informal knowledge exist within each other and that local and experience-based knowledge cannot be entirely separated. Instead, it can be viewed as a combination of practical skills and experiences that at times have a clear local connection. Aligning with the thoughts presented by Anderson et al (2021), that informal knowledge is context-specific and developed over a longer time frame.

In summary, this section shows that all sorts of local and experience-based knowledge are, according to advisors, highly valued among both advisors and the farmers they interact with, since it is viewed as a sort of ‘real-life knowledge’ that can directly be applied at the farm level.

5.2 Integration of local and experience-based knowledge

This section will focus on how advisors and advisory services are including and using local and experience-based farmers’ knowledge in their day-to-day work. In this section, the different forms of integration identified will be presented. To begin with, in several of the interviews, different ways of gathering knowledge from farmers came up. This will be presented by two statements from two different advisors. One advisor stated the following regarding visiting farmers.

The experience is, going to different places and see that of others. That is usually the idea of advising. I have seen this at one person and that at this other person. (Interviewee 6)

In this statement, the advisor refers to the importance of gathering local and experience-based knowledge at different farms. The advisors even refer to this

activity as the ‘idea’ of advising, indicating that gathering informal knowledge is the core of being an advisor. The focus is also on farmers as providers of knowledge, where their experiences are of importance. In addition, another advisor shared their view on gathering experiences as follows:

What I have gathered at the different farms, their experiences, what have worked? Then what happens? What does research say? How can we balance all this and move forward? That is very important, the farmers are! (Interviewee 2)

The second statement also highlights the need to gather experiences from farmers. This advisor also adds that the local and experience-based knowledge needs to be balanced with scientific findings, in order to move forward. Indicating that within the advisory services, informal and formal knowledge are combined, and that this combination of knowledge is of significant importance for their role as an advisor. In these two examples, farmers are seen as important contributors of knowledge, and this knowledge, according to the advisors, is deemed relevant to both advisors and farmers.

Accountability is one of the principles of adult learning presented by Vella (1994), where it is stated that all participants should be considered as subjects of a learning dialogue to achieve meaningful learning processes. In these two examples, it becomes evident that farmers are seen as valuable sources of knowledge, and therefore, to an extent, Principle 12 accountability is achieved. However, it also indicates that knowledge transfer can have a linear character, in which farmers are not necessarily viewed as co-producers of knowledge but rather as providers of knowledge. This can be understood as a result of the advisory service structure, which both the advisor and farmer operate within, where there is an expectation that the advisors should deliver knowledge as part of the transaction. Where there is one way, there is also a clear teacher-learner dynamic between the farmer and advisor (Vella 1994) due to the structure of the entire advisory services.

Furthermore, another advisor explained the process of private advising as follows.

When I come out to a farmer or a farm, I have the opportunity to meet the person behind it in another way. He stands in the soil of his land, and I stand in my experiences that I can refer back to. Then these are put in perspective to one another, his or her experiences in relation to mine, then slowly, we start moving towards each other to find out what is possible or not. (Interviewee 4)

In this case, the experiences of the advisor and the farmers are combined to create knowledge that is relevant for that specific context. This approach to a learning environment aligns with several of Vella's (1994) principles of adult learning.

Principle 1 Needs assessment are combined with principle 3 Sound relationships and principle 12 Accountability. The knowledge held by the farmer is identified and respected, and the advisors are ensuring a space where the farmer, in contrast to the previous examples, is given the opportunity to become an active participant in the knowledge creation. Where a shared learning objective helps create context-specific knowledge.

Another perspective on the combination of knowledge was described by a farmer and advisor who had shifted into holistic management and regenerative agriculture 15 years ago.

(...) when you find something like this, you think this is incredible, this will save the world, we can store ten times as much carbon and the animals are healthier, the costs are lower and everything is so much better, hallelujah! And it's like you're all caught up in this new passion and then you want to tell the whole world about how incredible this is. I just think that for myself I was all caught up and I started seeing things in new ways, which also meant I forgot other things. Then it is like you sober up, and not in the way that you reject everything that is new, but more so that you start to acknowledge the old knowledge as something well tested. (Interviewee 10)

This case shows that knowledge formation is a long and dynamic process where this person combined their own experiences as a farmer, with new input from holistic management groups and literature with what they call the 'old' knowledge, from agronomy, which eventually formed this new knowledge that they are applying on their own farm and communicating to others.

In this interview, the constant gathering of different forms of knowledge, self-experience, the experience of others, and formal education, and then testing them in a specific context, is a clear example of how productive adult learning, especially principle 5 Praxis, is practiced through the process of constant action and reflection (Vella 1994). In this case, integration and knowledge creation takes the form of an individual process, rather than one together with others.

Furthermore, another form of integration that was identified is the perceived need for validation of local and experience-based knowledge. The following citations provide two different examples from two different advisors.

You have to look at how other people have done it and how it holds up under other conditions, and then compare it with your own knowledge to broaden it. If you only look at your own knowledge under some specific conditions, then you don't know that much. What you have to do is to compare your own experience with that of other years and other people (Interviewee 3)

The first statement indicates that there is a perception that individual experiences cannot stand alone; rather, it is the accumulation of one's own experiences in combination with those of others and other years that creates robustness in experience-based knowledge.

Proven experiences and trial and error from the field. Then of course there's research from the rest of the world, in certain areas of interest that you can gather. But since everything is so different between different farms and even within one farm (..) no recipe on how to do it really exists, instead everyone must try for themselves (Interviewee 9)

The second example builds on the previous statement by highlighting the contextual nature of local and experience-based knowledge. It is suggested that sharing and comparing experiences is not sufficient on its own but must be complemented by practical application within specific contexts. Across several interviews, being open and honest about failures also emerged as an important aspect, indicating that the robustness of experience-based knowledge depends not only on collection and application but also on being transparent and critically reflecting. These examples also highlight that in several cases, experience-based knowledge is the only type of knowledge that is regarded as relevant when it comes to managing complex farming systems.

These examples indicate that there is space for a high performance of fair and effective learning processes that are characterized by Vellas (1994) principle 10, Teamwork, which enables active peer-to-peer collaboration and knowledge exchange. Such processes involve the practical application and continuous reassessment of knowledge, while it also reflects elements of principle 2 Safety, by creating a safe learning environment in which unsuccessful experiences can be openly shared (Vella 1994).

Continuing, another approach to local and experience-based farmers' knowledge integration that was identified during the interviews was the use of farmers as teachers. In these cases, a specific advisor, advisor organization, or the county administrative board contacts farmers with knowledge connected to a specific topic, which might be of interest to other farmers. One of the interviewees shared their positive experience of being contacted by the county administrative board and was asked to develop a teaching module on holistic management based on their specific experience. Another advisor stated that;

We also invite our farmers to become teachers. Which is very exciting. We learn a lot from them, and they are a really important source of inspiration. We think that our farmers do a fantastic job (Interviewee 9)

In this example, the advisor refers to the farmer as an integral part of the learning process, recognizing their knowledge as relevant. Most of the advisors described similar approaches to integrating farmers' knowledge, where farmers are invited in different formats to share their experiences related to specific practices or specific themes. These experiences are then shared with other farmers, advisors, and researchers, in course formats, field visits, and newsletters, to name a few. When asked about the integration of farmers' knowledge, these initiatives were frequently highlighted as good practice that the advisors themselves expressed pride over. However, they also expressed that while these initiatives exist, more work needs to be done to increase their frequency.

In these examples, the farmer becomes the teacher, and the knowledge of the farmers is being accounted for. This clearly relates to two of Vellas' (1994) principles of adult learning, principle 12 Accountability and principle 3 Sound relationships. In these cases, the role of the farmer is shifted from that of the learner to that of the teacher, creating potential for a higher level of participatory and equitable knowledge exchange (Vella 1994).

Building on the previous findings, most of the advisors raised group meetings and courses as platforms for sharing and communicating around experience-based and local farmers' knowledge. This will be exemplified by two different examples from two different advisors. The first example is experience groups (usually referred to as ERFA-groups). One advisor stated the following regarding ERFA-groups during an interview:

A few years while I was working in the western part of Scania. There were 4-5 organic producers who met once a week during the entire growing season. They were at one person one week and the other for the next. They put down a lot of time during a few years on this group, but it broadened their experience enormously. They saw more than just their own. (Interviewee 3)

This ERFA-group was referred to as particularly successful due to two different factors. The first one is the long timeframe of the group, meeting every week for several years. The second success factor identified is the continuous sharing of experiences among farmers and seeing these experiences put into practice at the specific farm.

Another advisor shared their insight on courses in comparison to private advising.

I think that many say that they appreciate course (...) There is a lot of conversation and sharing of a lot more perspectives. Many say that it is a lot of fun to bounce ideas between different farmers. I think that might be what contributes the most. (Interviewee 8)

Here, the advisors raise what they think farmers appreciate, based on their own experiences. Where continuous discussion between farmers and sharing of experiences is what the advisors believe is most effective in terms of how local and experience-based knowledge is most effectively integrated.

These two statements show two common examples of successful group meetings that were considered important for knowledge exchange among all the advisors; however, the specific organization and operation of these groups can take many forms. The common thread raised in all interviews was that these groups, when successful, offered the opportunity to discuss experiences with other farmers. The appreciation of these different forms of group meetings can be understood as a result of quality teamwork. Principle 10 Teamwork, according to Vella (1994), is both a method and a condition for effective adult learning. The team members in these cases are assumed to engage more actively when there is space for dialogue and some sort of shared task (Vella 1994), which the ERFA-group case and specific courses are examples of.

The findings presented in this section indicate that the integration of experience-based and local farmers' knowledge is driven by the advisors. Firstly, they are gathering knowledge from different farmers and ideally sharing it with others; however, in this process, the knowledge exchange can have a linear character in some cases. However, other findings suggest that the integration of farmers' knowledge is appreciated both by advisors and farmers. However, it is a complex process of combining and testing different forms of knowledge in different settings, since experience-based knowledge is usually context-specific. Groups and courses that are open for exchange of experiences are also clear examples of good practices for integration of local and experience-based farmers' knowledge.

5.3 Co-creation and the processes of learning

The findings in the previous sections suggest that there is a certain level of recognition and integration of local and experience-based farmers' knowledge within the farm advisory services. However, as previously mentioned in the theoretical framework of this thesis, co-creation is viewed as a prerequisite for productive recognition and integration of local and experience-based farmers' knowledge. Co-creation is the action and result of mutual learning, shared problem definition, and joint knowledge production in the knowledge interactions between farmers and advisors (Anderson et al., 2021, p. 77). This section builds upon the previous findings and focuses on the potential areas of co-creation that were found.

To begin with, in a few of the interviews, an awareness of the potential of co-creation was found, which will be exemplified with one statement from one advisor and a description from another advisor. Firstly, one of the advisors, when asked about what co-creation entails in their role, answered the following.

That one reasons things through together and hopefully reaches a higher level than if each person had only thought on their own. (Interviewee 3)

This statement shows that there is awareness of the potential co-creation, at least in the case of this specific advisor. This advisor continued by giving examples of activities they thought were good for the co-creation of knowledge, such as the previously mentioned ERFA groups, courses, and field visits. During this interview, while talking about mutual learning and co-creation, the word trust was raised on several occasions as a condition for creating safe learning environments that, in extension, enable co-creation.

Another advisor also raised safe learning environments as an important aspect of creating good learning environments where mutual learning can happen. They also referred to ERFA groups where this advisor experienced creating these learning environments, which were found to be difficult at times, due to different learning goals among the participants (Interviewee 2). This shows that there is an awareness of the potential of certain learning environments where group discussions are encouraged; however, it also highlights the difficulty of facilitating such groups, which is a concern that was raised by several advisors.

In these two examples, the principles 10 and 2 Teamwork and Safety, as outlined by Vella (1994), are considered crucial for creating a learning environment that can facilitate mutual learning, shared problem definition, and joint knowledge production. Where the formation of the groups with its participants in the second case appears to be a key factor in whether successful co-creation is achieved. However, it has proven to be difficult at times.

In another interview, another form of integration was identified, focusing on the role of the advisor. In this interview, two advisors (interviewees 7 and 8) were interviewed and asked about courses; one of them answered the following.

At that time we weren't teachers, we just moderated the discussion and had a plan (...) a lot of competence existed in the group and usually that is very good since then we don't have to know everything (...) It was very fun to create a space where they could share experiences. (Interviewee 8)

This specific course was an example of when both felt successful in their advising role. In this interview, reassessing oneself in the role of the advisor was described as important to promote mutual learning and joint knowledge production. Reassessing the role of the advisors to that of a facilitator can be seen as a way of increasing the level of integration of local and experience-based farmers' knowledge, where the facilitators in these cases help guide the discussion, rather than being a source of knowledge. In this case, this shift can partly be explained by the fact that they themselves did not feel like they had sufficient knowledge about the topic and that they appreciated that others shared their experiences and expertise instead.

The positive experience expressed by the advisors (interviewees 7 and 8) in this case can be understood as a result of the utilization of two of Vellas' (1994) principles of adult learning, principle 2, Safety, and principle 10, Teamwork. First, they clearly stated their own competence and capacity, creating a safe learning environment. Secondly, they altered the power dynamics between the assumed learners and teachers, recognizing the participants as legitimate contributors to the learning process (Vella 1994), thereby increasing knowledge exchange and the possibility of co-creation.

Based on the findings, it becomes evident that all aspects of co-creation, mutual learning, shared problem definition, and joint knowledge production are desired by most advisors and that, when functioning, leads to success. However, the perception is that it is sometimes difficult to put into practice, since it requires good group knowledge and time. It also becomes evident that practices promoting potential co-creation are used by several advisors without them explicitly referring to it as co-creation.

5.4 The role of the organic advisor

A theme that arose while analysing the interviews was that of the role of the organic advisor. Several different aspects were brought up and will be presented with two statements by two different advisors. The first advisor stated the following.

What is it that the client actually needs help with? And then, once you really understand that you can approach it in different ways. If you're very practical or have a lot of practical experience but less theoretical knowledge, you can help with certain parts. And if you're more theoretical and less practical, then you can contribute in other ways. So, it's about having an understanding of what the client needs help with, and an awareness of who you are yourself and what you can contribute with. And then, what you can't contribute with, you have to find other ways to address. (Interviewee 3)

For this advisor, being considered important involves understanding both their own standpoint and that of the farmer, applying their knowledge where it is most relevant, and being transparent about the limitations of their expertise.

Another advisor explained that their advising approach had changed over time. When the advisor used to work with conventional farms, they usually did the field visit on their own and then reported back to the farmer. When they started working more in the organic sector, the field visits were explained as follows.

Nowadays, farmers are always with me when I'm out in the field. We walk together and talk things through. So, it's more about discussion; I think they expect more of this kind of dialogue. And then, of course, we aim to reach a decision, but often we've reasoned our way there together. I might think about one thing, and they think another, or the other way around, and then we go back and forth until we arrive at something. I think that's good. And I believe that's also what they expect, this kind of dialogue, a dialogue that leads to a decision. (Interviewee 6)

This advisor raises the importance of dialogue between them and the farmers as important and as something that was expected and common practice.

These two examples are not exclusive to these two advisors. Most of the advisors interviewed shared a similar experience when it came to when they felt that their advising was successful. Several explained that advising within the organic sector is more than just being a source of knowledge and information, but it requires communication skills and the ability to adapt their own knowledge to every situation and every farmer. Some common words exemplifying these communication skills, in no particular order, were supportive, showing respect, responsive, trust-based, a sounding board, and dialogue-based.

Based on the adult principles of learning, the perceived effectiveness and success of this sort of advising can be understood as a result of proper needs assessment, principle 1, where the preexisting knowledge and priorities of the farmer are assessed through continuous dialogue that can be summarized in the words brought forward by the several of the advisors, supportive, showing respect, responsive, trust based, a sounding board and dialogue based (Vella 1994).

Furthermore, during the interviews, one advisor said this about their role as an organic advisor.

I don't work with that many conventional farms, but there are some differences. Partly, it's a matter of scale, there tend to be more small-scale organic producers and often, you're working across multiple areas. With a larger pig producer, for example, the focus is on pigs, that's what you discuss, and it's quite specific. But when I visit an organic

farm, the conversation is much more about the whole system, crop production, feed production, and so on. And perhaps also more about the market than is typically the case with conventional farms. (Interviewee 2)

In this statement, it becomes evident that organic advisors see themselves as a niche compared to the rest of the advising sector. This was raised by several advisors. They also raised the notion that in organic advising a broader farm perspective is required. It becomes evident from the interviews that a wide variety of skills and knowledge are of great importance to farm advisors in the organic sector, enabling them to apply a whole-system perspective when meeting with farmers. The same system perspective and focus on local adaptation within agriculture is also raised within agroecology for instance, by Anderson et al (2019) and Gliessman (2022), which indicates that the organic advisor services are sharing some ideas on knowledge with agroecology.

Building upon this, during the interviews, when discussing knowledge and local and experience-based farmers' knowledge, particularly, the advisors' own knowledge emerged as an important aspect. While this has been touched upon in previous parts of the analysis, this section will further elaborate on the role of organic advisors as knowledge brokers. Based on the analysis of the interviews, three distinct forms of brokerage were found that is specific, but not exclusive, for the recognition and integration of local and experience-based farmers' knowledge within the organic advisory services. These forms are: Personal farming experience, Collector of local and experience-based farmers' knowledge, and Facilitator of local and experience-based farmers' knowledge, which is further elaborated in the coming three sub-sections.

Personal farming experience

During the interviews, the advisors are identified as an important source of diverse forms of knowledge. More specifically, most of the advisors interviewed currently have or have previously had a farm of their own. One advisor described their own knowledge in the following way, which is divided into two quotes.

We have our own farm ourselves, which I see as a real strength. (...) It means I can try out some of these slightly crazy, not-yet-proven ideas. (Interviewee 2)

This first example shows that the advisor has their own personal experience-based knowledge and that the advisor themselves values this sort of knowledge. The advisor continues by saying that.

I mean, the foundation still comes from my education, I would say. I think you feel more secure in your professional role when you have that basic knowledge, both biologically

and perhaps chemically, which helps you understand what you encounter. (Interviewee 2)

In the second statement, it becomes evident that the advisor values the combination of informal and formal knowledge that they themselves carry. Throughout the interviews, this practical and experience-based knowledge, as a result of their own farm experiences, was highlighted as something useful among most advisors. It was highlighted as something that creates trust towards the farmers, as well as giving a more in-depth understanding of the difficulties farmers are facing. In addition, in all cases, the experience-based informal knowledge of the advisors was mixed with formal knowledge, such as a university degree in agronomy or biology. Based on this, it can be said that the advisors themselves carry a complex web of different forms of knowledge that is both academic and local and experience-based, which provides them with a sense of robustness and aids them in their advising.

When assessing the literature on adult learning, Vella's (1994) principle 2 on Safety can be used as a tool to understand how this sense of robustness in knowledge among the advisors have the potential of creating safe learning environments, where the web of knowledge identified among the advisors have the potential of creating clear acknowledgement of each other's preexisting knowledge, when good dialogue is achieved (Vella 1994). This good dialogue can be reinforced by a deeper understanding of the farmer's situation, which the advisors, in many cases, hold, as they themselves have farming experience. However, at the same time, this sense of robustness in knowledge can potentially decrease the emphasis on principle 3, Sound relationships, and instead reinforce the hierarchical teacher-learner relationship between the advisor and farmer, since the advisors then become clear knowledge providers (Vella 1994).

A collector of local and experience-based farmers' knowledge

The second form identified is that of the advisors as a knowledge collector. Two different statements by two different advisors will be used to exemplify. One advisor stated that.

That's often what advisory work comes down to: 'This is something I've seen on one farm, and this is something I've seen on another. (Interviewee 6)

In this statement, it becomes evident that the advisor sees themselves as a collector and disseminator of knowledge. Another advisor stated that.

Basically, I'm a knowledge collector. I can visit different farms, see all these solutions, and take them with me. Then I try to pass on those good examples to others. (Interviewee 2)

In the second statement, the advisor clearly refers to themselves as a knowledge collector, and here, a specific focus on sharing the good practices of different farmers is raised. This clearly shows that the role as a collector and sharer of knowledge is seen as an integral part of what makes up a 'good advisor,' from the advisors' perspective. All advisors stated during the interviews that their role as an advisor is to collect the experiences of a farmer in one place and then share that knowledge with other farmers, researchers, or other stakeholders.

When assessing the literature on adult learning, a similar analysis can be made as in the previous section. The knowledge-collection practices of advisors can create spaces for experience-based knowledge exchange among farmers who might not otherwise interact, thereby facilitating broader knowledge sharing, in line with principles 2 Safety and 3 Sound relationships (Vella 1994). However, at the same time, these practices may reinforce the teacher-learner relationship between advisors and farmers, since there is a risk that the advisors are viewed as teachers and the ones carrying the right answers, while the local and experience-based knowledge is derived from the farmers. This complexity of the learning interactions can be understood because of the economic structure that the advisory services operate within, where the knowledge that the advisors are carrying is either paid for by the farmers or the state, and therefore consists of built-in knowledge hierarchies.

A facilitator of local and experience-based farmers' knowledge

In this section, we are moving from the advisors as a collector to a facilitator and intermediary. In some cases, as previously mentioned, it also becomes evident that advisors, at least within the organic sector, also operate as facilitators and intermediaries. One advisor stated, for instance.

It's pretty popular, this thing of having ERFA-groups or group advising. Then you get to see it with your own eyes, how did you do it, and how did it turn out? (Interviewee 1)

This statement shows how this one advisor's experience that ERFA-groups are appreciated among farmers, since it facilitates discussions between farmers. Throughout the entire analysis, the aspect of sharing practical experience and techniques between farmers in groups and courses has been raised as important and highly valued amongst farmers and advisors. Based on the interviews, this has been shown to be especially successful when the advisor changes their role into a facilitator.

Based on Vella's (1994) principles of adult learning, reassessing the role of the advisor can be understood as an expression of principle 3: Sound relationships where there is a clear recognition of the farmer as an active contributor to the knowledge process. In addition, facilitating sound relationships, according to Vella (1994), also entails that there is an aim to create sound relationships between the learners as well, which successful ERFA-groups and courses are examples of.

Overall, the findings in this entire section of the role of the advisor suggest that the knowledge flows within the organic advisory sector are not only vertical but also horizontal since organic farm advisors are not only facilitating knowledge but also are themselves carrying and reproducing local and experience-based knowledge.

5.5 The valuation of knowledge and knowledge brokers

To better understand the conditions shaping knowledge integration, this section analyses the key drivers and barriers affecting the recognition of local and experience-based farmers' knowledge. It first presents the main barriers identified and followed by the main drivers, which build upon the findings from the previous sections.

When discussing the recognition and integration of local and experience-based farmers' knowledge, the value assigned to different forms of knowledge arose as a factor. For instance, one advisor discussed their relationship to scientific research as follows.

And I guess I can say that I'm... I'm a bit torn in what I think. Because of course I believe we should have research with us, that it's important and that we should rely on it. But sometimes I feel that maybe what's needed is just some common sense and those basic understandings of biology, of soil, land, animals, and how everything is connected. That maybe it's enough to lean on that, and to dare to try things, to dare to believe in it. Because otherwise, it can become very rigid and heavy to work with." (Interviewee 1)

In this example, the advisors raise an interesting aspect of how different forms of knowledge is viewed, revealing that it is difficult from a personal perspective to navigate and value different forms of formal and informal knowledge. Further on in the interview, the advisor continued to discuss the topic and stated that;

I immediately think of the actors I mentioned at the beginning, those who are often farmers themselves, who have developed and tested their own methods and want to share their experiences, to bring something concrete and advise others in different ways.

They're the ones who have dared to step outside the established practices and try things out. At the same time, I know that some of them have unfortunately been somewhat criticized by the research community for not having evidence for what they say. But I would argue that they do have evidence, you don't need to say more that, this is what I did, this is the result I got, and these are my experiences. That, in itself, is important to share with others. Just as research studies are important, so is the practical side. (Interviewee 1)

In this interview, the advisor shares their own experience on how practical farmers' knowledge is received in the scientific arena, which they experience has effects on the advisory services. This attitude towards local and experience-based knowledge is believed to hamper the inclusion of new advisors who have specific farming experience that could be beneficial for other farmers to take part in. In this example, it becomes evident that outside attitudes towards different forms of knowledge, in some cases, can affect the recognition and integration of practical experience-based farmers' knowledge within the farm advisory sector.

Building on this in a few interviews, project applications were brought up as an aspect of the advisory services that sometimes fails to recognize experience-based farmers' knowledge. One advisor stated the following on the topic.

If you're going to apply for money, and you have to refer to... Then you can't give general experiences but then you need to refer to numbers on all things. (Interviewee 2)

This statement indicates that for project application, non-quantifiable information is not sufficient. One way to look at these examples is through the viewpoint of Vella's (1994) 12th principle of adult learning, Accountability. In both cases brought up by the two different advisors, there is a lack of knowledge accountability from that of an outside actor or institution, which questions the validity of local and experience-based knowledge of both the advisor and farmers that they work with, which then affects the integration of farmers' experience-based knowledge within the advisory sector.

Moving away from the assigned value of different forms of knowledge, another barrier identified among a few advisors was that of competition between different advisor organizations. One private advisor stated the following regarding knowledge exchange with advisors in the advisor organizations, HS advisor³

Yes, I mean, HS advisors have a network, for example, the organic advisors. I was part of that for many years back, when it was like that. Then I had some kind of coordinating role, like, at the national level. So, I mean, then it was easier. Now I can't, I can't call HS anymore. I mean, individual colleagues I can, since we have a good relationship and

³ Refers to the advisors at a major advisor organization in Sweden

we respond to each other. But because of competition, I can't take it for granted to bounce ideas with someone there. (Interviewee 4)

In this quote, the advisor says that competition among different advisor organizations hinders the sharing of experiences and knowledge between private actors and advisor organizations, and vice versa. This is especially difficult when there are no personal connections between the advisors. In terms of how competition functions as a barrier to the recognition and integration of local and experience-based farmers' knowledge, it can, in some cases, hamper the knowledge exchange between advisors and thereby the exchange of experience-based and local knowledge held by the advisors. This, in turn, affects the range of knowledge that the advisors can provide to the farmers.

In terms of drivers for the recognition and integration of local and experience-based farmers' knowledge, several factors have already emerged in the previous parts of the analysis. Most notable is the strong overall appreciation of practical, experience-based, and context-specific knowledge among farmers and advisors. This is further reinforced by the fact that many advisors themselves have practical farming experience, which enables them to better understand, value, and integrate such knowledge within the advisory sector. Additionally, established groups such as experience groups (e.g. ERFA-groups) and courses centered on knowledge exchange can function as important drivers, as they create structured spaces for peer-to-peer learning and practical application of knowledge.

Finally, the role of the advisors as knowledge collectors or brokers can also be understood as a further strengthening of these processes as they gather, translate, and share experience-based knowledge across different actors. These factors can together serve as drivers for increased recognition and integration of local and experience-based farmers' knowledge within the organic advisory sector.

6. Discussion

This thesis set out to examine how agroecological knowledge, in the form of local and experience-based farmers' knowledge, is recognized and integrated within the organic advisory services in Sweden and to identify the drivers and barriers shaping this process. In this section, the findings will be discussed in relation to the thoughts on knowledge in agroecology and previous findings on AKIS and the organic farm advisory services in Europe.

6.1 The recognition and integration of local and experience-based knowledge

The findings presented in this thesis indicate that agroecological knowledge in the form of local and experience-based farmers' knowledge is, according to the advisors, widely recognized among advisors and farmers, particularly due to its practical relevance and immediate applicability in farm contexts. The finding also shows that, according to most of the advisors, gathering farmers' knowledge is considered the main idea of advising. Local and experience-based knowledge is especially valuable in organic farming systems, where farmers often face complex, context-specific challenges that require context-specific solutions.

The findings of this thesis align with previous research on advisory services in Europe. Leonnig and Nielsen (2026) and Sáenz et al. (2024) in their research found that practical and context-specific knowledge was considered important, both among advisors and farmers, within the organic sector, where other forms of knowledge, such as scientific research, are limited. The findings also align with agroecological thinking, highlighting the importance of local knowledge adaptation and a focus on systems thinking (Anderson et al. 2019; Gliessman 2022; Pimbert 2018a; Pimbert 2018b). The findings also suggest that advisors themselves view the collection and sharing of local and experience-based knowledge as an integral part of their professional role. However, recognition alone does not necessarily ensure meaningful integration.

Although strong recognition suggests a shift toward valuing diverse knowledge forms, the analysis also reveals a tension between appreciation and actual integration. The findings indicate that advisors play a central role in driving the integration of local and experience-based knowledge. Advisors gather knowledge from different farmers and, ideally, share it with others. However, this process can still take on a relatively linear character, where farmers are positioned either as providers of information or as end-users of knowledge. Cases in which farmers

are portrayed as co-producers of knowledge are less common, though they do exist.

What emerges from the findings is that, despite recognition and some degree of integration, from the advisors' perspective, farmers are often positioned as providers or recipients of knowledge rather than as equal co-creators. The advisors also position themselves at the centre of the knowledge process, which can be viewed as an expression of the system they operate within, AKIS, which is a system that positions the advisors as key knowledge distributors (Brändström 2015; Höckert 2017).

At the same time, the analysis identified examples that could challenge these structures. Experience groups (ERFA-groups), field visits and courses centred on farmer-to-farmer knowledge exchange were all highlighted as spaces where more collaborative forms of integration had emerged. A common feature of these examples was that advisors had changed their role from experts to facilitators of the learning process. In doing so, they acknowledged and potentially shifted the power relations, between the farmers and advisors, and by that created safer spaces for dialogue, mutual learning and shared problem formulation (Vella 1994).

Another important finding is that formal and informal knowledge, as described by Anderson et al. (2021) and Pimbert (2018a), are highly intertwined within Swedish organic advisory services. Most advisors draw upon a mixed knowledge base consisting of personal farming experience, university education, scientific research, and practical knowledge shared by other farmers and advisors. This can be understood as a reflection of the high expectations placed upon advisors by multiple actors, positioning them as facilitators who must simultaneously mobilize diverse forms of expertise, which is in line with and adds on to the findings of Rust et al. (2021).

At the same time, this mixture of knowledge forms can also be seen as a promising starting point for agroecological knowledge processes in Sweden. As Gliessman argues, agroecology is “transdisciplinary in that it values all forms of knowledge and experience in food system change” (Gliessman 2018:599). The coexistence of practical, experience-based knowledge and scientific knowledge, therefore, creates opportunities for deeper integration and collaboration between different forms of knowing. However, such integration requires that these forms of knowledge are equally valued (Gliessman 2018), which this thesis shows is not always the case.

As put forward in the analysis, knowledge within advisory services can also be understood as a commodity. Farmers seek knowledge through advisory services, whether these services are financed directly by farmers or indirectly through the state. Since advisory services are based on forms of exchange and expectation, different forms of knowledge acquire different forms of value, which in turn contribute to inherent hierarchies within the system. This does not necessarily have to be negative, but it does require critical awareness among advisors regarding how these hierarchies shape learning processes and relationships.

This understanding of Swedish organic farm advisory services suggests a theoretical refinement of agroecological knowledge processes as described by Anderson et al. (2021) and Pimbert (2018a). This study demonstrates that hierarchical structures continue to exist within advisory services because advisory interactions are embedded in relationships based on transactions that reinforce teacher-learner hierarchies. Group advisory settings, particularly those involving multiple actors across the food value chain, may therefore serve as practical examples of how such hierarchies can be mediated within the existing system.

In summary, what can be said is that there is a high level of recognition and that integration occurs, but often without a redistribution of power over the knowledge production, due to the structure within which the advisory services operate. However, there are spaces within the organic advisor's sector that hold potential for the future, where co-creation is occurring today. This will be further elaborated in the next section.

6.2 Drivers and Barriers within the organic advisory services

The findings show that the drivers and barriers shaping the recognition and integration of local and experience-based knowledge are closely interconnected and often emerge from the same structural conditions.

The role of the advisors as knowledge brokers emerges both as a driver and a barrier in this thesis. Advisors actively collect, interpret, and distribute knowledge from different sources, including scientific research, their own farming experiences, and those of the farmers they work with. In doing so, they combine formal and informal knowledge in their practice as advisors. This creates opportunities for horizontal knowledge exchange between actors who otherwise would be disconnected, challenging the top-down knowledge structures within AKIS identified by Brändström (2015) and Höckert (2017). At the same time, advisors also translate and filter knowledge, thereby by deciding who's

knowledge is shared and how it is framed, further reinforcing the already existent knowledge hierarchies present in AKIS and therefore presenting a potential barrier to further agroecological transformation, which according to Pimbert (2018a) and, Pimbert (2018b) should be built upon participatory knowledge processes, including and equally valuing and upraising all forms of knowledge within our food system.

Another driver of the recognition and integration of local and experience-based knowledge identified in the findings was trust. This is in line with previous studies showing that long-term relationships between advisors and farmers facilitate continuous knowledge exchange (Rust et al. 2021; Sáenz et al. 2024). This thesis exemplifies that trust between farmers and advisors is central to meaningful knowledge sharing and co-creation. Trust is built through dialogue between the farmers and advisors, in which expectations, prior experiences, and local conditions are discussed. Such dialogue creates a space for mutual learning, where farmers can be recognized as legitimate knowledge actors and where different forms of knowledge can be shared and co-created. In this sense, trust creates openness, which in turn facilitates knowledge sharing.

In addition, in her research, Höckert (2017) highlights the need to explore how Swedish advisory systems can move toward more collaborative forms of knowledge development, where the focus shifts from the individual knowing to that of the group. This aligns closely with agroecological perspectives that emphasize rethinking the advisor's role from expert or teacher to facilitator and co-producer of knowledge (Anderson et al. 2021). The examples identified in this thesis, such as ERFA-groups and collaborative learning settings, can therefore be understood as practical examples of how agroecological practices may already be emerging within current advisory systems.

This thesis also adds an additional layer of complexity to the discussions on agroecological knowledge processes. The findings suggest that recognition and integration of local and experience-based knowledge are only part of the issue. Equally important is the system within which advisors operate. Knowledge within advisory services functions partly as a commodity and is embedded within transactional relationships. This can create learning hierarchies in which advisors become teachers and farmers become learners, even though farmers simultaneously act as providers of knowledge. One advisor, for example, described advising as the process of gathering experience-based knowledge from different farmers and sharing it with others.

The practical implications of these findings are that greater awareness is needed regarding knowledge hierarchies within advisory services and how such hierarchies are reproduced. Competence development, reflection, and critical discussions among advisors regarding their professional roles and associated power dynamics may therefore be important steps toward more participatory and agroecological advisory practices.

The findings of this thesis further highlight the importance of advisors' self-reflection regarding their professional role and the expectations attached to it. How advisors perceive themselves and how they are perceived by others directly shapes how knowledge is communicated, valued and integrated in practice. In this sense, the advisor's role emerges both as a key driver and as a potential barrier to the integration of local and experience-based farmers' knowledge. Importantly, the advisor's role is not neutral but embedded in power relations that influence whose knowledge is legitimized, how it is framed and under what conditions it is integrated into advisory processes.

6.3 Methodological and other reflections

During the interviews, which were conducted in Swedish, it became apparent that the focus on farmers' knowledge was sometimes less explicit in questions related to local and experience-based knowledge. This may have influenced the responses, since discussion on the recognition and integration of such knowledge was often framed from the advisors' own perspective rather than that of the farmers. This is not unexpected given that the idea of the thesis was to investigate these processes from an advisor's perspective.

At the same time, many of the advisors have or have previously had their own farms or practical experience working in agriculture. It is therefore not surprising that they frequently emphasize their own practical knowledge and experiences. Their perspectives are shaped both by personal experience and by interactions with other farmers and advisors. As a result, it is difficult to determine to what extent the partial absence of a clear farmer perspective in the answers reflects a high or low level of integration, though it remains an important consideration when interpreting the findings.

Part of the research presented in the introduction argues that we are moving away from the linear advisory services and that advisory services are becoming less important (Krafft et al. 2022; Rust et al. 2021; Sáenz et al. 2024). While there is some truth to this, both the findings of this study and existing literature indicate that advisory services continue to play an important role in agricultural knowledge

processes. Rather than disappearing, advisory services appear to be evolving in response to changing knowledge processes, including those promoted within AKIS. Future research could further explore advisors' awareness of their own roles and responsibilities, particularly in relation to what power dynamics and knowledge hierarchies they reinforce or challenge. Questions such as what it means "to advise" or how advisors understand their influence over other advisors, research, and farmers would be interesting areas of investigation. Additionally, further research on what is meant by local and experience-based knowledge and whether such knowledge can inherently be considered agroecological needs to be examined.

Finally, the results of this study are not intended to be representative of the entire advisory system in Sweden, as the focus has been limited to the organic sector, which constitutes a relatively small part of the overall system. However, this scope is appropriate for the scale of this thesis. The aim is not to generalize, but rather to identify potential areas for agroecological knowledge processes, and to see what potential there is for agroecological knowledge today, and most importantly for the future.

7. Conclusion

This thesis contributes theoretically to the discussion of the agroecological knowledge process by demonstrating that knowledge dynamics within organic advisory services are more complex than previously described in the literature on agroecology and AKIS in Europe and Sweden. The findings show that knowledge within Swedish organic advisory services consists of an interplay between formal and informal forms of knowledge. While informal knowledge, such as local and experience-based knowledge, is often strongly recognized internally among advisors, the valuation of this sort of knowledge is affected by structural aspects such as the formation of the advisory service itself, which in turn is shaped by economic, political and social structures. Further emphasizing the importance of understanding the context within which the advisors operate.

The thesis also contributes to agroecological theory by identifying organic advisors as knowledge brokers who simultaneously act as both drivers and barriers to the recognition, integration, and co-creation of agroecological knowledge. Advisors, therefore, can facilitate a horizontal knowledge exchange within AKIS in general and the advisory services in particular. At the same time, advisors also influence which forms of knowledge are legitimized, how knowledge is framed, and under what conditions it becomes integrated into advisory processes.

Therefore, the practical contribution of this thesis lies in highlighting the importance of critical reflection among advisors regarding their professional role and the power dynamics attached to it. The findings suggest that greater awareness of knowledge hierarchies within advisory services could support more participatory and inclusive knowledge processes. Strengthening advisors' ability to facilitate dialogue, mutual learning, and advisory services may also create stronger conditions for the integration and co-creation of agroecological knowledge. This can be undertaken through experience groups (ERFA-groups), courses and field visits focused on facilitating participatory learning processes.

In summary, the findings highlight advisors as important knowledge brokers and facilitators of learning processes who combine and operationalize both formal and informal knowledge, where local and experience-based knowledge is viewed as the core idea of advising and therefore can contribute to the furthering of agroecological knowledge processes in Sweden. Most importantly, this thesis shows that knowledge exists everywhere and in many different forms; it is simply a matter of how we, as humans, take it in, and how we as a society value and steward it.

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Popular science summary

Organic advisors as knowledge brokers

Organic farm advisors help share and spread farmers' knowledge in Swedish farming. This study found that organic advisors play a key role in collecting and sharing farmers' knowledge among both farmers and other advisors.

The study wanted to find out how agroecological knowledge, in the form of farmers' own experiences and local knowledge are used by organic farm advisors in Sweden. This can include things like using certain machines, specific crop rotation, picking seeds, dealing with soil and weather, or potential access to local markets. Agroecological knowledge includes all the subtle knowledge that comes from experiences at the farm level and is usually not scientifically proven.

Agroecology in this study is understood as the practices and principles that help transform our current food system into a food system that can feed the world. This can only be done if the transformation is built upon fair conditions for everyone included in the food system, especially farmers and other people involved in food production. This study focuses specifically on the inclusion and consideration of farmers' knowledge as a way forward.

This study found that advisors carry a lot of farmers' knowledge because they have, or previously had, farms. This adds an interesting layer to understanding how farmers' own experiences and local knowledge are taken into account in advisory services. As previously mentioned, organic advisors play a key role when it comes to collecting and sharing farmers' knowledge between farmers and advisors. They usually combine scientific knowledge with their own farming experiences and the experiences of the farmers they meet, creating a mixed web of knowledge that combines scientific knowledge with the practical and local knowledge of the farmers and advisors.

The most effective and beneficial ways of working with agroecological knowledge within organic farm advisory services are activities that are built upon good teamwork where thoughts, experiences, and other forms of knowledge can be safely exchanged between the participants. Examples of such activities are, experience groups (ERFA-groups), courses, and field visits. In order to promote an agroecological transformation of our food system, these activities need to be used more widely among advisors.

Appendix 1

Interview guide in English

Interview guide

Theme 1: Background and context

- Can you tell me a bit about your current role or connection to agriculture and food production?
- How long have you worked in this field? What made you to start?
- What do you do as an advisor?
- Do you encounter or use the concept of agroecology in your work? How do you relate to it?
- What do you think of when you hear the word *knowledge* in your context?

Theme 2: Forms and origins of knowledge

- What type of knowledge do you find most important in your work or in decisions related to agriculture?
- Where does the knowledge you use most often come from? (education, research, experience, colleagues, networks, advisory services, etc.)
- What does local knowledge mean to you?
- What does experience-based knowledge mean in your context?
- In what way do local conditions or practical experience influence work and decision-making?

Theme 3: Integration and the valuation of knowledge

- How do you make use of farmers' experience and local experience-based knowledge in your role?
- How do you perceive that practical experience and local knowledge are taken into account in agricultural collaborations in general?
 - Can you give a concrete example?
- Do you feel that different forms of knowledge are valued differently? If so, how?
- Are there situations where certain knowledge is not taken seriously or is overlooked? Why do you think that happens?

Theme 4: Co-creation and learning

- How do you perceive collaboration between farmers currently?
 - What works well and what needs improvement?
- How do you work with collaboration and knowledge sharing
- How is knowledge developed in agricultural collaborations, is it mainly about giving advice, or about mutual learning?
- What is the most important aspect of being a good advisor? What makes you a good advisor?
- Have you experienced a situation where you developed solutions or knowledge together? What made it work (or not work)?
- What role do networks, groups, or associations play in learning and knowledge exchange?
 - What facilitates sharing knowledge and experiences?
 - What makes it difficult?

Theme 5: Structures, opportunities, and barriers

- Are there organizational or structural barriers to working more with local and experience-based knowledge?
- What would need to change for collaboration and knowledge exchange to function better?

Theme 6: Future perspectives

- What role do you think experience-based and local knowledge will play in the future of Swedish agriculture?
- How do you see the development of advisory services and competence development going forward?
- If you could change something about how knowledge functions within agriculture, what would it be?

Closing

- Is there anything else you would like to add regarding knowledge, learning, or collaboration in agriculture?
- Is there another person or actor you think I should speak with?

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