

COLLABORATION FOR SUSTAINABLE AGRICULTURE

**19 researchers and experts
on how new methods and approaches
can contribute to change**

**“Alone we go fast,
together we go far.”**

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“AKIS – that’s us!”



The Seed of the Book

In March 2021, the Swedish Rural Network held the first “Meeting Place AKIS” with over a hundred attendees from across the Swedish agricultural sector. One of us, Lisa, was a PhD student in the field of knowledge and innovation systems at the time, so she listened with particular interest. For many of the participants, the concept of a knowledge and innovation system was entirely new. The new term AKIS (the Agricultural Knowledge and Innovation System) was unclear, and some seemed to think it was a new organization meant to bridge the gap between research and practice. Lisa thought that AKIS consisted of all the participants at the meeting, and even more beyond, “AKIS – that’s us!” These differences in the understanding of AKIS showed a need to more clearly define and illustrate the system, which sowed the seed of this book.

At the same time, Magnus, the director of the SLU Competence Centre for Advisory Services, had been thinking about how to summarize the results of the first 10 years, as a stepping stone for the future. Magnus wanted to share the Centre’s research and key insights surrounding contribution to sustainability and competitiveness in Swedish farming and rural entrepreneurship.

From these thoughts, the idea of a book emerged with the aim of providing an overview, critical analysis, and offering recommendations for Sweden’s agricultural knowledge and innovation system. Christina and Jenny, long-time employees at the Centre, contributed important pieces to the puzzle. Together, we invited a number of experienced researchers and experts to share their insights and provide their personal reflections and recommendations for the future. The book has become a part of the development of the SLU Competence Centre for Advisory Services.

The book is aimed at all stakeholders in the AKIS in Sweden: farmers and farming organizations, advisors and consultants, researchers and educational actors, research funders, suppliers and customers in the agricultural value chains, as well as other related actors such as banks, media, interest organizations, teachers, and students. This is the English-language summary of the book, with abbreviated forewords and summaries for each theme. The first and last chapters have been translated in greater detail.

We would like to extend a heartfelt thanks to all contributing authors, as well as to everyone who has supported us along the way, both within and outside SLU. A special thanks to Anna Samuelsson and Magnus Börjesson for writing forewords, and to Lennart Wikström for reviewing drafts. Anna Lind Lewin created the book’s graphics and design – a big thank you for your dedication and patience. A special thanks to the Västra Götaland Region for supporting the development of the SLU Competence Centre for Advisory Services. We also thank the Royal Swedish Academy of Agriculture and Forestry for contributing to the funding of this book.

Alnarp och Skara November 2024

Lisa Blix Germundsson, Magnus Ljung, Christina Lundström and Jenny Höckert

FOREWORD #1

Let's Make Use of Impatience!



ANNA SAMUELSSON
Farmer and board member of Växa, Sweden's largest livestock association. Anna Samuelsson runs the farm Kalset Mjök.

"I'm sure you've heard it all before, but you never really had a doubt." This line from *Wonderwall* by Oasis has followed me like a soundtrack in various contexts over the years.

I've seen this phrase as a call not to dismiss something simply because I have heard it before, but instead to read or listen from this particular presented perspective—to find other angles, question old truths, or to challenge new solutions. I think we should carry this mantra with us throughout this book.

I was really happy when I heard that this book was underway. Much work has been done—and is still being done—on how we can move forward, improve knowledge transfer, and find ways to meet between different disciplines. There are so many dedicated individuals trying to find paths for increased knowledge exchange, and many good studies and project proposals are being carried out. There is so much ambition and will at kitchen tables and desks, in the field, in lunch rooms and laboratories, at garden beds and livestock pens. I know this because I've had the privilege of moving through many different contexts, switching between roles as a farmer, researcher, and in various trusted positions.

Despite this, when you listen to ongoing discussions, you sometimes get the feeling that nothing is happening—almost as if there is no one who is really interested in working on the issue. This book *Collaboration for Sustainable Agriculture* is the counter-argument. Much has been done, and there is a clear message and drive forward, but with an almost impatient, frustrated tone—we're not there yet, and there is still so much to be done. Let's make use of that impatience!

FOREWORD #2

A New Era for the World's Most Important Industry



MAGNUS BÖRJESON
Farmer and chairperson of the regional cluster AgroÖst and Sweden's Rural Network's analysis group AKIS, as well as coordinator for the challenge area of Sustainable Food Supply for the regions in Eastern Middle Sweden.

The book *Collaboration for Sustainable Agriculture* welcomes you to a tapestry mapping the complex world of actors and organizations involved in knowledge development and innovation within and around the agricultural sector.

Food production is the world's most important industry, without which we as humans cannot function. Every day, farmers are faced with issues from the outside world in the form of markets, climate and environmental issues, and regulations—challenges that require timely interventions and broad expertise in biology, technology, and management. Managing a business under such conditions is a multifaceted challenge, and being a part of the entrepreneur's external environment as a facilitator is, of course, also highly demanding.

This book clearly shows the number of actors involved, and that the collective power of all these actors is a decisive factor in the sustainability and competitiveness of Swedish agriculture.

It is a unique book in its breadth; the authors and co-authors have a range of expertise within the various knowledge and innovation systems in agriculture. But it is also unique in its method of systematically and structurally highlighting challenges and possible solutions, reflections, and recommendations from many different perspectives. The book contains several important contributions that emphasize the importance of working on the long-term development of trust and confidence. For farmers, this is crucial, but it is also a key success factor in all relationships between different AKIS actors.

To achieve greater relevance and utility, the direct involvement of farmers is a cornerstone that is too often overlooked. The contribution of users in research and advisory processes needs to be clarified. Based on my own experiences from farming, the development of regional networks, and national and international collaboration, I can say that personal, trust-building relationships and openness to new collaboration are critical.

INTRODUCTION

Knowledge, Technology and Collaboration are Key to the Future

“We just put an NIR instrument on the feed mixer; it checks dry matter content, protein, everything. They’ve been available for combine and forage harvesters before, and now they’ve come down in price. The point is that my feed ration will be the same every time, rain or shine; before, you had to guess. We’re still in the calibration phase; this is the first one in Sweden. Both the seller and I are connected to it all the time and can monitor how it’s doing. Then there are the drainage organisations; they’ve been forgotten since they were set up in the 1930s, and now it’s time for maintenance...”

Per-Johan Pålstorp, a dairy farmer working between Sjöbo and Ystad, responds to the question of whether there are any new projects underway at the time. This glimpse into a dairy farmer’s everyday life shows how new knowledge, technology, and various forms of collaboration are crucial in the future. How do we actually work to create sustainable development in Swedish agriculture, both on our own and in collaboration?

Since its founding in 2014, the SLU Competence Centre for Advisory Services has been involved in many contexts where knowledge is developed, through collaboration between various actors in research, advisory services, and practical farming. Now, as we celebrate our tenth anniversary, we can reflect on this development. The purpose of this book is to provide an overview, a critical analysis, and present recommendations on collaboration for knowledge development and innovation within Swedish agriculture, to achieve sustainable change. By collaboration, we refer to the joint learning and decision-making processes that lead to action.

Challenges Are Not Lacking

The OECD has noted several disadvantages for Swedish agriculture from an international perspective, including our outlying location, cold climate, high labour costs, and complex environmental legislation¹. International market competition is tough and has led to significant structural rationalization and a focus on production costs. In addition to market demands, society also holds high expectations on Swedish agriculture. Beyond ensuring economic viability, environmental, and social sustainability, food security has gained much greater importance. The Swedish Parliament has adopted environ-

“With this book, we want to reflect on the theme of knowledge development through collaboration, together with invited authors: What challenges and opportunities does this bring, and what is required to create change in the desired direction?”

mental goals, a Food strategy, and, for the first time since World War II, returned to the issue of food security in the event of crisis and conflict.

The Food strategy includes goals for increased food production, higher growth rates, new jobs throughout the country, and a greater share of locally produced and organic products, all while environmental and climate goals must be met. To grow sustainably and remain competitive internationally, Swedish agriculture needs to innovate to meet the expectations of customers, consumers, and society.

One of the priority actions in the Food strategy is to support the knowledge and innovation system to contribute to increased productivity and innovation. This means that the ambition to innovate, learn, and adapt faster than others is seen as one of the main competitive advantages for Swedish agriculture and the food sector. However, several reports have suggested that the knowledge supply is vulnerable and that the Swedish innovation system is fragmented². These reports highlight gaps in need of identification, insufficiently applied research and trials, and a lack of interdisciplinary approaches³.

SLU Competence Centre for Advisory Services

Every year, large sums are invested into the development of new knowledge and the dissemination of this knowledge to relevant target groups. Both the advisory services that farmers pay for themselves and those funded by society are part of the knowledge system. However, we know very little about how effectively the knowledge and innovation system addresses the challenges we see now and those on the horizon, and whether it delivers the desired benefits relative to the costs. What we do know, is that there is an ongoing need to develop collaboration and advisory methods. New challenges and problems simply require new approaches. It was within this tension that the SLU Competence Centre for Advisory Services was established ten years ago.

When SLU was founded in 1977, a professorship in agricultural information science (advisory services) was created. For a long time, research in this field was limited, and the subject moved between departments. When the professorship shifted to environmental communication in the early 2000s, there were no longer any senior positions focused on agricultural advisory services within SLU. A number of researchers and doctoral students increasingly felt that there was a gap in both research around advisory servi-

ces and collaboration within the green industries, as well as there being no ability to support advisors and organizations seeking to develop their practices. Thanks to a collaboration agreement between the Västra Götaland Region and SLU, the foundation of what is now the SLU Competence Centre for Advisory Services was laid in 2014. This initiative made it possible to build a new research environment that complemented other research at SLU. Today, the vision of the centre is for our research to foster collaboration and joint knowledge development for sustainable system change.

With this book, we want to reflect on the theme of knowledge development through collaboration, together with invited authors. What challenges and opportunities does this bring, and what is required to create change in the desired direction? What have we learned over the ten years that the SLU Competence Centre for Advisory Services has existed, and what do we see as the next phase?

The Four Themes of the Book

The four editors each introduce one theme. Following this, chapters under each theme are written by a number of experienced and insightful authors to provide a broad overview. All authors share their experiences regarding challenges and possible solutions, and end their chapters with personal reflections and recommendations on what needs to change to address the challenges of today and tomorrow.

In this English summary of the original book in Swedish, not all chapters are translated. While each theme is summarized, the first and last chapters have been translated to a greater extent. In the final chapter, the editors summarize the book's conclusions, offer a critical reflection, and present recommendations for the future based on the insights from all contributing authors.

Our hope is that this book will inspire all those who, like farmer Per-Johan Pålshörp, are facing new challenges to improve and develop their operations connected to Swedish agriculture and rural entrepreneurship.

Lisa Blix Germundsson, Magnus Ljung
SLU Competence Centre for Advisory Services

COLLABORATION IN AKIS*

CHAPTERS IN THEME 1

Communication between Research and Practice is Key

Lisa Blix Germundsson, SLU

Participatory Research increases the Possibility of Sustainable Solutions

Elisabeth Ögren

The Animal Production Knowledge Hub strengthens Productivity

Jörgen Korning, RISE

The Importance of Business Management and Entrepreneurship

Sebastian Remvig and Per Hansson, SLU



**LISA BLIX
GERMUNDSSON**

Researcher and project manager at the Department of People and Society and SLU Competence Centre for Advisory Services, with a focus on knowledge development and innovation within agriculture and horticulture.

Theme 1 addresses collaboration in agricultural knowledge development and innovation, with a focus on research and practice. Traditionally, focus has been on technical and scientific knowledge development, while collaboration between actors— particularly the inclusion of farmers, rural entrepreneurs, citizens, and consumers—has been underdeveloped. The various authors in this book discuss several aspects of change that go beyond technical and scientific expertise.

The first chapter of this theme illustrates the paradigm shift in which farmers, rural entrepreneurs, and their organizations need to be more involved in research and innovation. This can happen in various ways, for example through the improved use of existing networks and resources, both regionally and within specific industries. This aligns with the approach presented in the second chapter, where Swedish experiences of participatory research are summarized. While not all research can or should be participatory, applied agricultural research should definitely draw from this approach. Participatory research is based on collaboration between farmers, advisors, and researchers to find sustainable solutions that can quickly be translated into practical changes.

The four knowledge hubs are a new concept for Sweden, emerging from AKIS discussions at the political level. The new hubs will work systematically to understand the needs of the sector, create meeting places for AKIS actors, and develop the exchange of knowledge between research and practice. In the long term, the knowledge hubs are expected to form partnerships with relevant organizations and develop shared goals within their respective fields. Two partnership hubs are introduced in this theme: the knowledge hubs on Animal Production, and on Business Management and Entrepreneurship.

This theme highlights how policy-level actions, as well as local-level activities, have the potential to improve the ability to meet current and future challenges, while also contributing to societal benefit and change.

*Agricultural Knowledge and Innovation Systems

ADVISORY SERVICES

CHAPTERS IN THEME 2

Starting from the Farmer's Worldview

Jenny Höckert, SLU

The Launch of Hushållningssällskapet's Intensive Advisory Services (HIR)

Erik Stjerndahl

Focus on Nutrients

– Advisory Services for Sustainable Farming

Markus Hoffman, LRF, and Lisa Blix Germundsson, SLU



JENNY HÖCKERT

Researcher and project manager at SLU Competence Centre for Advisory Services, focusing on learning, knowledge development, advisory services, and change processes for increased sustainability in agriculture.

*the Swedish Rural Economy and Agricultural Society (Hushållningssällskapet).

The second theme focuses on advisory services as one of the cornerstones of the knowledge system. We present the story of how the HS* intensive advisory services were launched, along with the long-standing advisory initiative Focus on Nutrients (Greppa Näringen), which now forms part of the new knowledge hub on environment and climate.

Advisors meet many farmers and rural entrepreneurs, giving them a strong understanding of the conditions and situations they face, which is then explored in more detail in the following chapters. Advisors play a central yet challenging role in bridging the gap between research and practice. One reason for this is that advisors are often seen as instruments or implementers in the knowledge system. How can we better utilize their experiences in joint knowledge development and policy development going forward?

DIGITALIZATION

CHAPTERS IN THEME 3

Digitalization in Agriculture – Opportunities and Challenges

Christina Lundström, SLU

Agricultural Digitalization Compared to Other Sectors

Jessica Lindblom, Uppsala University

A New Revolution in Agriculture

Oleksiy Guzhva, SLU

Digitalization of Agriculture Can Support Sustainable Development

Jonas Engström, Traktoravid

The Miraculous Farm and the Role of Technology

Per Frankelius and Katarina Muhrman, Linköping University



CHRISTINA LUNDSTRÖM

Researcher and project manager at SLU Competence Centre for Advisory Services, with a focus on learning and knowledge development in agriculture.

The third theme addresses the highly relevant question of how digital technologies can be integrated to increase sustainability in agriculture and both simplify and improve the daily life of farmers, while also considering the risks and why the impact of such technologies has been limited. Agricultural digitalization is framed in a broader societal context, with a focus on the latest developments in digitalization within animal production. Finally, experiences from two Swedish innovation environments are shared, and the new knowledge hub on digitalization is introduced.

In this theme, the tendency for researchers and developers to claim that solutions already exist, and that users just need to understand or be persuaded is highlighted, the so-called implementation problem. In reality, while some solutions do exist, they are not always sufficiently relevant, meaningful, or practical to be widely adopted if users have the choice. The focus has often been on the technical and analytical aspects, while the people who are supposed to implement the new technologies have been overlooked. This has made development simpler, but the actual change was limited and slow. The example illustrates how solutions to complex problems, whether they involve digital technology or other challenges, must be developed in collaboration with those who will ultimately use the new tools. The whole socio-technical system, or practise of the user, must be considered. While development in close collaboration with various actors may require more resources initially, it often proves more cost-effective when considering the lasting changes of projects.

We must shift from the perspective of “research first, implement later” to “develop and implement new knowledge in a parallel/joint process.” To achieve this on a broad scale, more ambitious policy development and institutional changes are needed to support new working methods and collaborations between actors.

MULTI-ACTOR COLLABORATION

CHAPTERS IN THEME 4

Collaboration for Joint Learning and Decision-Making

Magnus Ljung, SLU

Land Use Dialogues: Enabling Collaboration Between Actors

Mette Tiselius and Lars Johansson, SLU

Building a Knowledge System in Beekeeping

Lotta Fabricius Kristiansen, SLU

The Role of Advisory Services in Agricultural Knowledge Development

Victoria Tönnerberg, HIR Skåne, and Magnus Ljung, SLU



MAGNUS LJUNG

Principal extension officer and program manager at SLU Competence Centre for Advisory Services. He has for more than 20 years worked with collaborative processes within the green sector, both as facilitator, educator and researcher.

The fourth and final theme focuses on Sweden's long-standing experience of multi-actor collaboration, which, in many ways has been built around natural resource management. Collaboration involves engaging with multiple perspectives and managing them without believing to find a final blueprint that fits all situations.

How can an open-minded approach to collaboration be put into action?

The concept of *Land Use Dialogues* is introduced, as well as an example of how a new knowledge system can be built from the ground up, using beekeeping as a case study. Finally, advisors' perspectives on collaboration, especially with research, is discussed.

In the included chapters, the basic prerequisites for successful collaboration processes are outlined: institutional support, mandates, process facilitation, the participation of relevant actors, individual skills, and willingness. In the last chapter of this theme, Tönnerberg and Ljung discuss the need to reintroduce and reinforce collaboration training at the undergraduate level. They suggest that students should be involved in collaborative projects to gain. Today's professionals, especially those in research and advisory services, also need further training focused on improving collaboration skills, group dynamics, and process management. This is also true for leaders of such operations, as leadership often plays a crucial role in enabling employees to work in a more in a more collaborative way.

CONCLUSIONS

SLU Competence Centre for Advisory Services Looks Forward

The purpose of this book has been to provide an overview, critical analysis, and recommendations on collaboration for knowledge development and innovation in Swedish agriculture. The editors and invited authors have contributed with their experiences of challenges and possible solutions, alongside personal reflections and recommendations for the future. In this final section, we build on these insights and delve deeper into an analysis of how collaboration has evolved so far, and the needs we see moving forward.

At the SLU Competence Centre for Advisory Services our research aims to advance collaboration and joint knowledge development for sustainable systems change. We focus on identifying challenges, developing and testing new methods and approaches that support the development of a more resilient agriculture, alongside the transformative changes needed to achieve ecological, social, and economic sustainability. Our focus is on people and the social innovations that contribute to enhanced learning, collaboration, and action among key agricultural stakeholders. This is all in the service of improved management of complexity and the conflicts that arise along the way. From this foundation, we have identified four key themes that we aim to contribute to developing in the future.

1

Strengthening Capacities for Change with Users as the Focus

There is a wealth of research-based knowledge and technology that can help agriculture grow. However, much of the knowledge available in agriculture is not being used to its full potential. Our research shows that this often comes down to how stakeholders – whether they be farmers, researchers, or advisors—are involved in the development and implementation of solutions. It is not just about having the right tools (knowledge or technology), but also about how these tools are introduced into the system; they must be introduced in ways that are aligned with the needs of the users. Moving from a “technology-driven” to a “need-driven” approach is key.

Furthermore, as the agricultural sector grows, we need to understand and support the emerging, larger businesses in the industry. Traditional advisory models tend to focus on the business owner, but farming production also depends on all employees being effectively involved. This is not unlike a sports team – while the coach (business leader) plays an important role, the entire team must work together for success. Thus, advisory practices need to be adapted to increase the capacity of larger, growing agricultural businesses with many employees, ensuring that everyone is working towards the same goal.

In recent years, several studies have highlighted the importance of social sustainability in agriculture – essentially, the human side of farming. This includes things like the individual’s sense of purpose, community with like-minded people, and the legitimacy of societal institutions. If we think of social sustainability as the “fertilizer” for agricultural systems, it’s clear that without it, other sustainability goals, such as economic or environmental sustainability, become harder to achieve. The SLU Competence Centre for Advisory Services has developed methods to address social sustainability on several levels, not just helping farmers to grow their crops, but to grow their communities too.

Our role is to research new methods and support stakeholders in the agricultural knowledge chain to build their ability to manage change and to develop their skills to navigate complex agricultural challenges. Think of us as gardeners for the system—helping others to grow the tools and resources they need to thrive sustainably.

2

Developing Collaboration Vertically and Horizontally

Knowledge and innovation are key to sustainable and profitable Swedish food production. Advisory services contribute with expert knowledge and support for business development through high levels of subject expertise and process management. Significant financial resources are invested by both entrepreneurs and the government to fund advisory services and skills development. The SLU Competence Centre for Advisory Services play a role in the strengthening of advisory services and collaboration, aiming to create a more effective knowledge and innovation system in these areas. We see great potential in developing collaboration across the entire value chain, as well as within the policy chain, the political implementation system. With this ambition, we are fulfilling a central role in Sweden's agricultural knowledge and innovation system (AKIS), complementing existing actors and research environments that are developing new subject knowledge.

We are already working with integrative and new approaches to knowledge supply for the sector, such as the ways in which scientific knowledge is integrated into decision-making processes. We aim to deepen collaboration with the new national knowledge hubs, for example, to support the development of new working methods and advisory concepts. There is an ongoing need for method development in this area.

We also see our role to be played in strengthening collaboration and knowledge development from a regional perspective, including in partnership with agricultural vocational colleges and other regionally and locally rooted actors.

3

Increasing Diversification through New Competencies

A sustainable and resilient agricultural and food system requires society to allow many "flowers to bloom" at once. This means recognizing that there are several parallel development paths that need to be supported simultaneously. Examples of such developments include the creation of new advisory concepts, such as those that strengthen ecosystem services and nature-based solutions in agricultural landscapes, as well as promoting biodiversity in forests. Through our research and support, we can contribute to building expertise in new areas of knowledge where there is currently a lack of actors addressing emerging needs.

There is also a link to food security and supply issues. Increased diversity and resilience are essential in order to strengthen food security and ensure a sustainable supply chain. Sustainable land and water use, alongside new, innovative food systems, will need to be developed. However, this will not happen on its own – transformative processes require willingness, capacity, and expertise.

The SLU Competence Centre for Advisory Services can contribute by initiating, designing, and researching collaborative processes that lead to enhanced preparedness and supply. How should actors overcome bottlenecks, connect relevant stakeholders across the entire policy system, and build food security based on local and regional resources? For this, social innovations are also needed to engage farmers and other stakeholders.

4

Supporting Rural Enterprises to Develop through Local Resources

Rural businesses need to develop their ability to benefit from all of their local resources in the future. Sustainable land and water use – including forests, farmland, pastures, wetlands, and other resources – requires leveraging the full potential of all place-based resources, including biodiversity. For the place-based business and through collaboration with other land-owners, it also involves identifying new opportunities. However, in order to do this, the potential of these resources must be made visible, and the land-owner/business owner must also show the willingness and the conditions necessary to take advantage of these new opportunities. Such a journey of transformation cannot be achieved through the traditional methods we are used to; new ways of working and new methods are required.

Here, the SLU Competence Centre for Advisory Services contributes by developing and implementing new methods that help actors identify and benefit from the local resource base. One such methodology is Land Use Dialogue, which has garnered significant national attention. This includes creating conditions for the restoration of forests to natural pasture, testing nature-based solutions, and developing plans to support green infrastructure.

**The Conditions Are There,
But Do We have the Will and Ability?**

Let us begin with a historical example to illustrate how good ambitions can be difficult to implement in practice.

In the late 1990's, researchers from various disciplines had long highlighted the need for entirely new ways of working in order to achieve more successful nature conservation efforts. The government's memorandum "A Unified Nature Conservation Policy" from 2001 marked a shift in the Swedish conservation approach¹.

In this memorandum and its preparatory work, collaboration between authorities and landowners was emphasized more clearly than before. This was met with high expectations by many actors, including authorities, landowners, and their representatives. Today, 23 years later, we can conclude that, despite the high ambitions and expectations, little progress has been made. Nature conservation is still characterized by deep conflicts between actors, a lack of participation, and a strong expert orientation. The actors involved had the opportunity to develop new ways of working together but did not seize them. Instead, individual civil servants in local authorities have taken the lead, as seen in the example of Land Use Dialogue described in the section on actor collaboration.

There are positive examples of environmental work within agriculture, but these are often project-based and have not led to the necessary cultural change. An exception to this is the Focus on Nutrients initiative, in which LRF (the Federation of Swedish Farmers), the Swedish Board of Agriculture, County Administrative Boards, and advisory organizations have worked together for many years on environmental issues in agriculture (see the theme on advisory services).

In agricultural policy, similar opportunities are now opening up through political goals that emphasize collaboration and cooperation. For some time, initiatives such as Leader, EIP-Agri, various collaborative projects, and now the four new, national knowledge hubs have been in put into place. Research funders such as Formas and the Swedish Farmers' Foundation for Agricultural Research (SLF), and the innovation agency Vinnova, have contributed when providing funding collaboration between research and practice in their funding calls, creating the conditions for new collaboration projects and centre formations. Regional actors have come together to create regional/local hubs for cooperation.

Despite good initiatives and shared challenges, silo thinking still perseveres, which negatively impacts agricultural and rural businesses, which negatively impacts agricultural and rural businesses. So far, the implementation of political visions has not succeeded in creating the sufficient institutional support for collaboration between the relevant parties which could lead to widespread, sustainable change in everyday practices. At the SLU Competence Centre for Advisory Services, we have reason to be self-critical. Many attempts have been made, but over the past 10 years, we have not been

able to clearly highlight this issue². Why has collaboration and cooperation struggled to gain traction in the everyday practices of the authorities, research and education actors, organizations, and businesses that make up the agricultural sector and its knowledge system? There is impatience among many over how slowly change is happening, and society still faces major challenges in terms of economic, environmental, and social sustainability. This is attested to, not least, by the contributing authors of this book.

Political goals emphasize collaboration and cooperation for sustainable development – but are we seizing the opportunities presented? The examples above are steps in the right direction, but more is needed.

The journey of change has only just begun

All development and change must take place with the goal of increased sustainability, as outlined by Agenda 2030 and the UN Sustainable Development Goals. Global and national goals, in combination with planetary boundaries, must define the direction for this work. This insight leads us directly into the next paradigm, where the view of innovation systems evolves with a greater focus on system change for sustainability³. This will lead to a series of goal conflicts and potentially uncomfortable changes; research worldwide has already shown us that this type of collaboration is a challenging process.

Everyone should prepare for a journey of change, starting with the examination of ourselves and the context in which we operate. Continuing "business as usual" is no longer a viable path. Here we have described several steps in the right direction – but are we doing enough? To meet the expectations of citizens, politicians, and not least ourselves in the agricultural sector, we need to take collaboration and cooperation to a whole new level.

Together, we can go far.

*Lisa Blix Germundsson, Magnus Ljung,
Christina Lundström and Jenny Höckert
SLU Competence Centre for Advisory Services*

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