

Insight paper: Future visions of the Swedish food system

The agricultural sector and food system face multiple challenges – soils across the globe are deteriorating, jeopardising environmental values as well as long-term productivity in farmlands. To turn the negative trends, the system is in need of a transformation. The actors in Svensk Kolinlagring want to contribute to this. We work to improve soil fertility, sequester carbon and support co-creation of knowledge, as we believe those are key to any future food system. But in order to spark a larger transformative shift we also need a vision of what we want the food system, and society, to look like in the future. We need to paint a picture of where we want to go – our common vision – and then identify concrete actions for getting there.

To build a common vision, Svensk Kolinlagring, together with Emma Johansson from LUCSUS, Lund University, ran two future vision-making workshops during 2021. The methods for the workshops build on the concept "[Seeds of a Good Anthropocene](#)" and the "[Three Horizons](#)" framework. The first workshop focused on the farm-level system, while the second workshop zoomed out to focus on the whole food system.

Workshop 1: Seeds of a Good Anthropocene – Visualising the future farm

The first workshop took place online in January 2021. During two half-days, participants from eight of the pilot farms in Svensk Kolinlagring developed scenarios of what a sustainable carbon storing agriculture can look like in 2030. The time frame of 10 years was deemed suitable for planning and taking action on the farm level.

The workshop started with identifying existing seeds in the food system. Seeds are innovations and experiments, taking place in the margins, that have the potential to contribute towards creating a sustainable future. The participants were then divided into two groups, and each group chose three of these seeds as their basis to generate a narrative of desirable potential futures.

One group selected 'collaboration between farms', and 'soil health knowledge in education and consultation' while the other group selected 'keyline design' and 'online farmers market'. Both groups selected 'Increased use of perennials'.

Thereafter, the participants explored what a farm could look like and how it would operate if a combination of these seeds would become the norm in the future and we asked the question: What do we want agriculture to look like in a world where we have managed to curb greenhouse gas emissions and instead store carbon in agricultural land? What is grown, how are the animals kept and integrated, what do we eat?

Interestingly, the two groups came up with fairly similar future visions, even though the starting points of their discussions were based on different seeds. The carbon farming futures are argo-ecological futures, where farmers engage in practices that create living soils, contribute to biodiversity, and minimise the use of agro-chemicals. In such futures, the farmers are also better off since yields are high, production is more climate resilient, costs for inputs are low, and more direct producer-consumer relationships improve farmers' income. The picture below summarises some of the key features of the two groups' future visions.

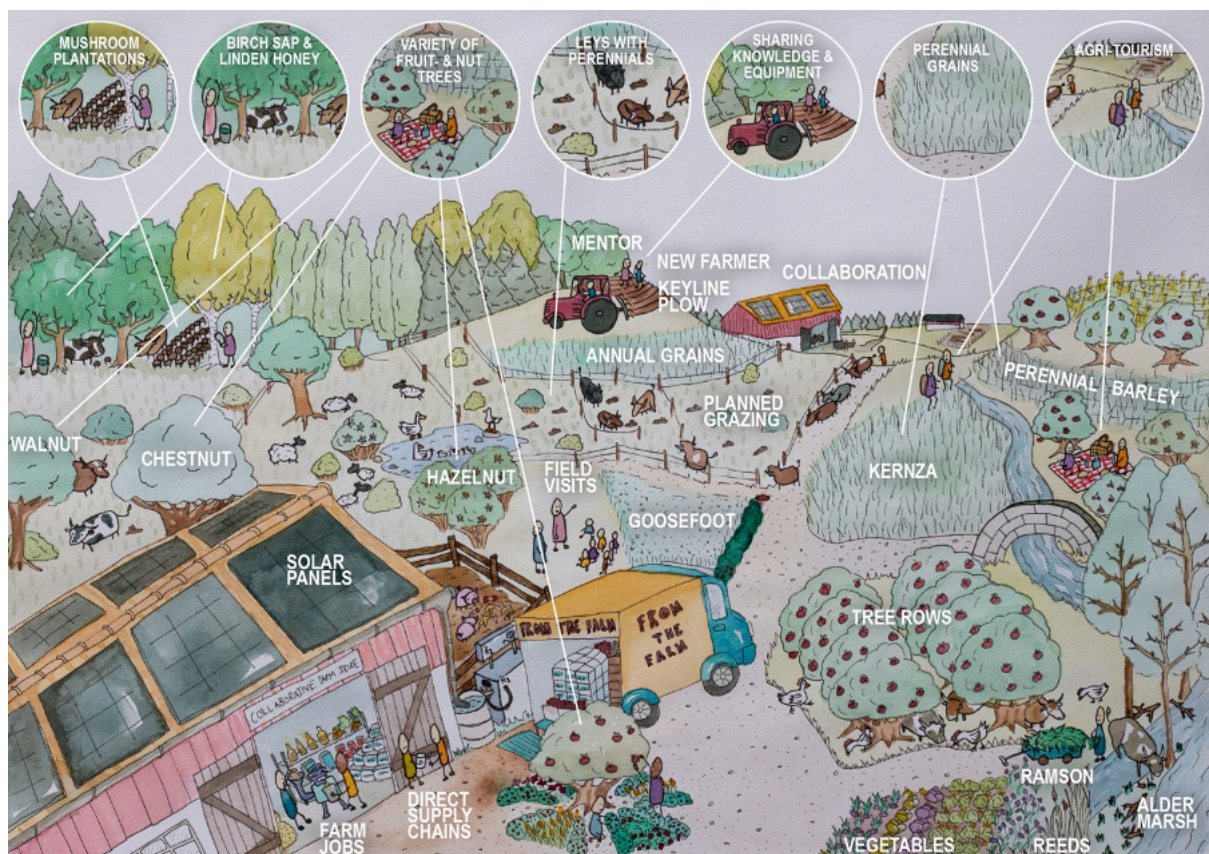


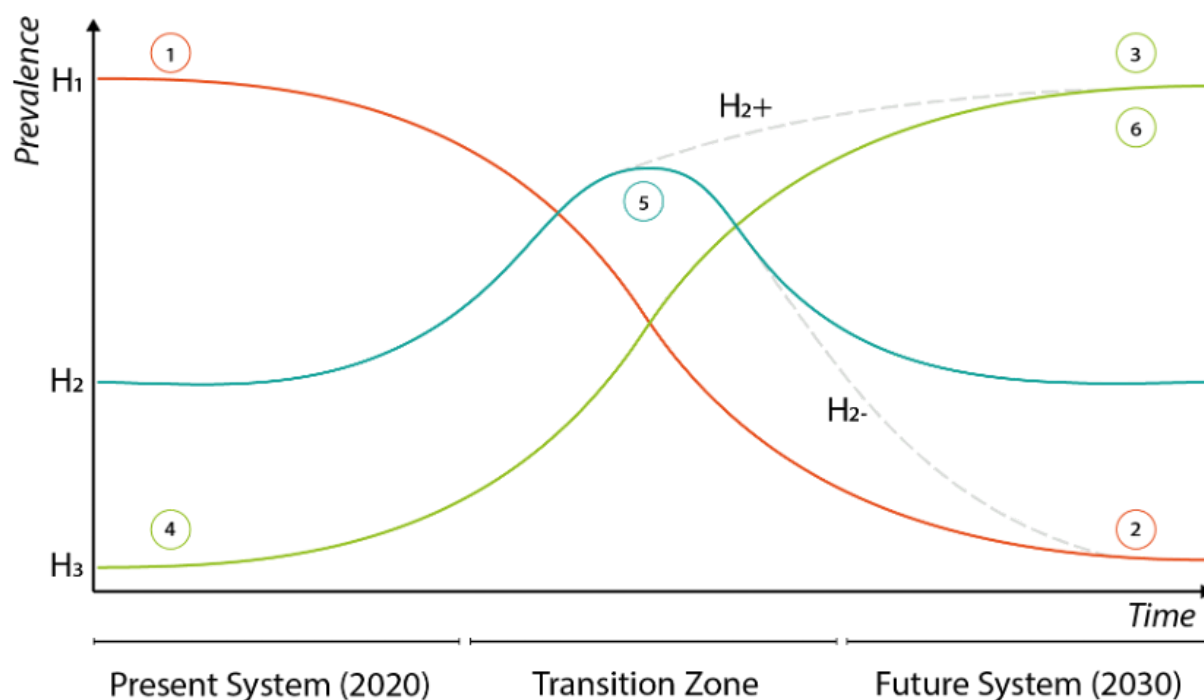
Illustration from Johansson, Brogaard & Brodin (Environmental Science and Policy, 2022) based on the outcome of the first workshop. The illustration is a collection of ideas and principles of what a sustainable future farm can engage with to sequester more carbon, create vital ecosystems, and also create positive effects on farmers' health and income. Farmers can choose different sets of suggested methods represented in the visualisation, but key ideas are to create green landscapes by keeping soils covered all year by an increased use of perennials, bushes and trees, and that animals are increasingly integrated to the farm landscape.

Workshop 2: Zooming out – A food system based on carbon sequestering agriculture

The second workshop was held on one of the pilot farms, Öråkers gård, outside of Stockholm, during two days in December 2021. This workshop included not only farmers and the team from Svensk Kolinlagring, but also farming consultants and food industry representatives.

This time, we zoomed out from the farm level to discuss a food system based on carbon sequestering agriculture on a broader level. Using the three horizons framework, we started by identifying the key characteristics of the current system, why it is unsustainable and what components that are worth keeping. Secondly, we discussed the future vision, and its key characteristics. What are the barriers to reach the vision and how do we break unsustainable patterns? What innovations, initiatives and collaborations are required and what critical changes are needed to enable our vision for the future? For example shifts in behaviours, policies, actions or support. And lastly, how do we ensure that the momentum of change is realised and not captured into “business as usual”?

Some of the takeaways from the second workshop was the importance of sharing experiences and networking, increasing knowledge and education – in all parts of society, and using all the good examples around to share a positive story about agriculture. The participants shared a positive feeling that the project we have together is contributing to a shift in the right direction, moving us closer to our vision of the future food system.



Conceptual figure of the three-horizons framework, adapted from Sharpe et al. (2016). Numbers indicate points where questions were asked during the workshop for creating future narratives, and how to get there.

Conclusions from workshops and the next step

Transforming the food system is not a small or easy feat. However, during the workshops, participants highlighted many positive aspects that could be part of a transformed future farm and food system. The future visions were not only focusing on carbon sequestration per se, but rather highlighted the many indirect positive effects on soil carbon from keeping soils covered and undisturbed, improving soil health, and creating healthy ecosystems. We also touched upon topics like social changes related to reduced stress and improved health for farmers, how changes in food production can contribute to new nutritious and diverse diets that improve health in society overall, and how economic changes relate to improved farmer income due to reduced need and use of fossil fuels and chemical inputs on the future farms.

Participants highlighted that many actors need to be part of the farm- and food system transformation. Carbon sequestering food systems need to come about through close connection and interaction between producers and consumers, and need to be supported by policies, and food industries. The creation of a vision doesn't mean that the job is done, but it is an important step for understanding

what actions are needed. The illustration of the alternative farm system is a compilation of many practices that farmers who wish to sequester more carbon can engage in, and is also a tool to communicate the possibilities that lie ahead. The next step is to invite a larger group of actors from the Swedish Carbon Sequestration platform to discuss and come up with what concrete actions and policies are needed to reach the future vision. The concrete action plan will thereafter be communicated to decision makers as a policy brief.

References

Johansson, E., S. Brogaard, & L. Brodin 2022. (in press) Envisioning sustainable carbon sequestration in Swedish farmland. *Environmental Science and Policy*.
Sharpe, B., A. Hodgson, G. Leicester, A. Lyon, and I. Fazey. 2016. Three horizons: a pathways practice for transformation. *Ecology and Society* 21(2):47.

