Stockholm Resilience Centre

Insight Paper #2

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Nordic food system transformation series

Summary

This second Insight Paper of the Nordic food system transformation series takes a Nordic perspective to food system challenges. Eight urgent food system challenges shared across Nordic countries are described that represent opportunities for regional collaboration. The benefits of Nordic collaboration on food systems are discussed, while acknowledging that not all food system issues are 'Nordic' in nature.

Key insights

- **It makes sense to support Nordic collaboration on sustainable food systems** given shared sustainability commitments and shared food system challenges.
- **There is strong support for Nordic collaboration on sustainable food systems** – Most dialogue participants (88%) support Nordic collaboration on food system challenges.
- **Action at the Nordic level does not exclude national, local or international action.** Rather, it represents a necessary layer of action in food system transformation.
- **The Nordics have strong foundations to support food system transformations**, and existing springboards for action have been identified.

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Eight opportunities for Nordic collaboration on food system challenges

Why address food system challenges through a Nordic lens?

The Nordic countries have a long tradition of collaboration across issues such as energy, culture, integrated labour markets, education and food. Nordic collaboration is based on a set of shared values such as trust, equality, and democracy. The willingness to collaborate is influenced by the common historical, cultural and geographical roots of these countries.

There are four key reasons to support Nordic collaboration on food system transformations. First, the Nordics have committed to delivering on the Sustainable Development Goals (SDGs). Research has shown that the Nordic countries cannot deliver on those goals without addressing, among other core issues, food systems.[1] Importantly, food is well-positioned as a cross-cutting issue to deliver benefits across multiple – if not all – goals.[2]

Second, the region has a history of shared food system challenges, including increased prevalence of diet-related chronic disease,[3] high levels of food waste[4] and unsustainable environmental impacts related to food consumption.[1,5] The Nordic countries also have a history of collaboration to tackle these shared challenges. For decades, the Nordic countries have collaborated on safe and healthy foods through projects such as the Nordic Nutrition Recommendations (NNR)[6] and the Keyhole label.[7] There have also been common Nordic food waste reduction projects[4] as well as programs[8] that promote sustainable food systems. Working together to tackle shared challenges can be faster and more efficient than going it alone.

Third, there is a hunger for Nordic collaboration. Of the 115 participants who attended the Nordic food system transformation dialogues, 88% agreed (or mostly agreed) that the Nordic countries should work together to improve food systems. In contrast, only 10% agreed a little, 2% answered that they weren't sure and no one disagreed.

Fourth and finally, collaboration across borders reflects certain realities of Nordic food systems. For example, companies operate in multiple Nordic countries, food is traded across borders, and there is a shared set of nutrition recommendations (NNR) to guide dietary advice in the region. Solutions that work with, rather than against, these characteristics of food systems can be more impactful and avoid unintended consequences, e.g. border sales.

Box 1. Benefits of Nordic collaboration

Previous joint-initiatives across the region have highlighted the benefits of Nordic collaboration both on a domestic and international level. Collaboration facilitates the sharing of knowledge and best-practice. It offers the opportunity to pool resources that can buffer the Nordics from shocks, such as a shared electrical grid ensuring exchanges across borders in response to power shortages. Pooling resources can be a more efficient way to tackle commonly-held challenges and can produce a more significant effect than any single country could have alone. Collaboration is also a means to share and celebrate the similarities across cultures – such as with the New Nordic Food programme.

On the international stage, a united Nordic voice can be more potent in policy discussions. It can also ensure that regional interests are heard by the global community. For example, at a time when the world faces a sustainable development crisis, it is as vital as ever for the Nordics to share their sustainability goals and successes with the global community. Regional collaboration in the Nordics also provides an example of countries working towards shared goals, a welcomed model in the time of SDG17: 'Partnership to reach Agenda 2030'.

Building a common food agenda for the Nordic region

The eight opportunities highlighted below emerged from discussions between researchers and stakeholders during the project *Towards sustainable Nordic food systems*, a project contributing to the Generation 2030 program of the Nordic Council of Ministers. Phase 1 of this project led the research team to food system actors across the Nordic region. They engaged in dialogue about the current scientific evidence base and the approaches of different stakeholder groups to tackle

food system challenges. Phase 2 of the project brought together 115 actors representing diverse parts of the food system in full-day, multi-stakeholder dialogues. These discussions explored the good, the bad and the uncertain when it comes to four potential food system scenarios: reducing red meat consumption; increasing consumption of nuts and legumes; shifting towards local food systems; and embracing global food systems. The project, scenarios and dialogues are detailed more fully in the first Insight Paper of this series.

There is no doubt that the COVID-19 pandemic provides a new lens through which to assess the four scenarios. However, all of the multi-stakeholder dialogues took place before the pandemic changed our day-to-day lives. Thus, the insights presented in this paper reflect pre-COVID-19 thinking.

When sorting through the many issues identified by stakeholders, the following criteria were applied to choose which issues to discuss in this Insight Paper. First, an issue needed to be relevant to all five countries, thus creating Nordic added value in finding shared solutions. Second, issues were chosen where progress has started (or is feasible) on the Nordic level. Third, the issues are of high priority and urgency. Finally, the issues need to align with the best available scientific evidence on what is needed for sustainable food systems.

The eight opportunities do not represent an exhaustive list (see Box 2). The dialogues that informed this Insight Paper were rooted in four food system scenarios that inevitably steered the discussions in some directions more than others. For example, marine environments and seafood were not discussed to a large extent, most likely because the scenarios focused on production and consumption of meat, nuts and legumes. That said, a range of additional issues surfaced throughout the conversations that went beyond the four original scenarios proposed. Thus, while the eight opportunities discussed here are representative of the dialogue discussions, there is a range of other issues that need to be addressed to achieve sustainable Nordic food systems.

Box 2. Issues not discussed in this Insight Paper

The issues of food security and self-sufficiency are not included in this Insight Paper. These issues have a strong normative dimension, and approaches to self-sufficiency have been different across Nordic countries, making a joint approach less feasible, if even desirable.

The issue of food safety was commonly discussed in the dialogues but not pursued here. There is long-standing recognition for the necessity of safe food, and Nordic populations enjoy safe food supplies. With proper authorities and regulations in place to monitor and control food safety as food systems change, this is not an issue where urgent and drastic change is needed.

Finally, many stakeholders highlighted the need to address international regulations that pose barriers to sustainable food systems. In particular, the Common Agricultural Policy (in countries belonging to the European Union) and World Trade Organization policies were frequently used as examples. While signalling a critical area of action, this Insight Paper will not focus on this challenging area for two reasons. First, membership in the EU differs across Nordic countries, which affects agricultural policy. Second, this global focus is beyond the scope of influence of many participating stakeholders.

Eight opportunities for Nordic collaboration on sustainable food systems

The following sections will explore how the Nordics can work together to:

1. Define sustainable diets in the Nordic context
2. Accelerate a social movement towards sustainable food
3. Develop a tool to assess the sustainability trade-offs and benefits of different production systems
4. Bolster the agricultural and food sector workforce
5. Ensure thriving countrysides and urban-rural connections
6. Build an equitable and just food system transformation
7. Address the out-sourced impacts of Nordic food systems
8. Rethink a competitive export market for Nordic food

For each opportunity, insights from dialogue participants are highlighted. Guiding questions and existing springboards of action are identified that can kick-start Nordic collaboration.

1. Define sustainable diets in the Nordic context

"The absence of scientific targets for achieving healthy diets from sustainable food systems has been hindering large-scale and coordinated efforts to transform the global food system."

– EAT Lancet Commission on Healthy Diets from Sustainable Food Systems[9]

All Nordic countries have evidence-based, food-based dietary guidelines based on the NNR. The guidelines outline foods and nutrients that fit in a healthy diet. However, the guidelines were not designed primarily to steer individuals towards diets that support environmental sustainability. Some Nordic countries – such as Sweden and Finland – have supplemented dietary guidelines with information on which healthy foods are more or less environmentally friendly.[10,11] However, official guidance stops short of outlining diets (i.e. intakes of foods) that support healthy people while staying within environmental boundaries. That said, guidance on sustainable diets is rapidly developing across the region, discussed in the 'Springboards for action' section below.

Many in the Nordics eat too few fruits and vegetables, legumes and whole grains and consume too much red meat and added sugars. These poor diets are a leading risk factor for poor health across the region, responsible for 40–48% of deaths from cardiovascular disease and 25–28% of deaths from diabetes.[3] Overconsumption of energy-dense foods contributes to half of the adult population and one in seven children being overweight or obese.[12,13]

At the same time, Nordic diets are transgressing multiple environmental boundaries.[1,5] That is, when producing current Nordic diets, the amount of greenhouse gas emissions released, the amount of land and nutrients (nitrogen and phosphorus) used, and the biodiversity harmed is beyond sustainable levels.

Sustainable diets are those that support all dimensions of sustainability, including human health and the environment (see Insight Paper #1 for more details). Thus, defining sustainable diets in the Nordic context can accelerate action on tackling both diet-related poor health and environmental challenges in the region.

What dialogue participants had to say

- **Make the end goal clear** – Dialogue participants stressed that without clear guidance on what we should and should not be eating, dietary shifts could lead to less healthy and unsustainable eating patterns. For example, guidance to reduce red meat intake does not explicitly indicate what individuals should be eating instead. Will individuals replace meat with legumes and vegetables, or with foods high in added sugar, salt and fat? A clear picture of desirable diets, not just guidance on specific dietary shifts, is needed.
- **Sustainable diets for all** – Participants realised that there is not a standard sustainable diet. Individuals have different needs that should be taken into account, such as the risk of nutrient deficiency, the ability to digest certain foods or food allergies. The need to tailor diets to the individual is well-established in dietary recommendations.
- **Business opportunities** – Several dialogue participants felt that a shift in dietary practices would open the door to new business opportunities. For example, it could stimulate entrepreneurship, encourage innovation across the sector, and in turn, drive the development of added-value to Nordic food products. On the other hand, there was also concern that some businesses, such as beef producers, might 'lose out' in a food system transformation. Thus, transition support or safety nets may be needed to ensure a just transition.
- **Better diets make economic sense** – Participants noted that shifts to healthier diets would result in fewer health care costs and more productive individuals.
- **Take a holistic view on sustainability** – Participants highlighted several other dimensions of sustainable diets beyond health and environmental aspects. These include affordability, access for all, equitable food systems, sustainable production and more.

Where to start?

Guiding questions for Nordic collaboration

- How can the current evidence-base on sustainable diets be used to inform a Nordic definition of sustainable diets?
- Beyond general guidance to the public, how can a Nordic definition of sustainable diets be used to accelerate action on sustainable diets? For example, can it serve as the basis of marketing regulations or public procurement guidelines?
- Who can be key ambassadors of sustainable Nordic diets? Chefs, teachers or health care professionals?

Springboards for action

- **The Nordic Nutrition Recommendations (NNR)** is a joint scientific effort across the region to assess the evidence base related to nutrient intakes and healthy diets.[6] The NNR is the basis for the national dietary guidelines of Denmark, Finland, Iceland, Norway and Sweden. Environmental considerations will be more deeply embedded into the analysis of the 2022 NNR, which can provide a strong foundation for countries to translate this science into food-based sustainable dietary guidelines.
- **National sustainable dietary guidelines** are progressing in several Nordic countries. In Denmark, for example, researchers and authorities are collaborating to produce sustainable dietary guidelines.[14] In Sweden, Livsmedelsverket is working to establish goals and targets for sustainable food consumption. These initiatives could provide a template for other countries to follow.
- **Pursue the Nordic Health 2030 5/5 Aspiration.**[15] This is an aspiration to re-balance the scales when it comes to preventative health care spending and expenditure on health care. Instead of spending only 0.3% GDP on preventative care and 9.8% GDP on sick care, this movement aspires for a more even 5%/5% balance by 2030. Given that unhealthy diets cost Norway alone 154 billion NOK per year (roughly 16 billion EUR) in health and social costs,[16] we know that the price tag of unhealthy diets is a big part of sick costs. And since diets that are good for health are often good for the environment, this could be a crucial means of supporting sustainable diets.

How would a sustainable diet look in the Nordic context? Photo by Sonja Vermeulen.

2. Accelerate a social movement towards sustainable food

Having clear goals for sustainable eating is only the first step. A crucial next step is mobilising individuals all across the Nordics to adopt sustainable diets. A shift in consumer behaviour and demand is a necessary complement to the simultaneous shifts in business offers and policy decisions.

Social movements can be challenging to achieve – but not impossible. History reminds us of large-scale shifts in the behaviour of Nordic populations, including smoking, road safety, healthier eating patterns in North Karelia (Finland), or reduction of milk consumption across Sweden.

While there may be no blueprint for a social movement towards sustainable diets, the science is clear that it is often a package of policies rather than a specific intervention that creates lasting change in a population.[17] These policy packages often include a mix of interventions – those that are voluntary, those that are mandatory and those focused on fiscal, social or regulatory change.

What dialogue participants had to say

- **Make sure no one is left behind** – Participants suggested that shifts to sustainable diets could reduce inequalities. However, effort would be needed to ensure that the trend was moving in the right direction. Additional support is needed to ensure that disparities are reduced, and not increased, in marginalised groups. For example, the participants noted that special-risk groups such as the elderly and young females need to be monitored to ensure that dietary shifts do not result in nutritional deficiencies. Extra effort will be needed to include 'hard-to-reach' populations, including rural dwellers and those more hesitant to change, such as males. Care also needs to be taken to ensure that sustainable diets are affordable to all.
- **Education and information are a must** – Participants stressed that individuals would need support in the form of dietary advice, education and the development of new cooking skills to achieve healthy, balanced and sustainable diets.
- **Food culture** – Dialogue participants noted that traditional food culture was important to many individuals. Participants noted that not all aspects of traditional Nordic diets – such as high consumption of animal-source foods – are compatible with sustainable eating. Yet other aspects of traditional Nordic diets – such as root vegetables, cabbage and fish – are integral to a sustainable diet. Further, while some participants were wary of losing traditional food culture, many highlighted the potential to evolve a new Nordic food culture. For example, this shift could open the opportunity to explore new food cultures, expand culinary practices and adopt more diverse food cultures and habits.
- **Less but better meat** – Several participants expressed that the notion of 'less but better meat' should be central to the new food culture. Rather than eliminating meat consumption, some participants suggested that it was better to reduce the amount eaten and purchase meat that is produced in a sustainable way.

Where to start?

Guiding questions for Nordic collaboration

- What policy package is needed to facilitate and complement a social movement targeting behavioural changes towards sustainable diets?
- Who are the early adopters who can champion this movement?
- How can other sectors (e.g. business, civil society) support this social movement?

Springboards for action

- **The New Nordic Food Movement**, now over 15 years old, is showing no signs of slowing down.[18] Instead, this movement – based on ten principles including sustainability, stewardship and locality (See Box 3) – is expanding from its original niche of high-end restaurants into projects targeting schools, businesses, retailers and policy. This movement can offer key insights and networks to embed sustainable eating into everyday life.
- **The past is full of examples of successful interventions**. A good example of this is the North Karelia project in eastern Finland designed in response to a high prevalence of non-communicable diseases (NCDs).[19] Through a multi-faceted approach – including media strategies, changes to school lunch programs, dialogues with local producers and collaborations with local groups – the project was able to achieve significant dietary shifts to reduce NCDs.
- **Embracing the digital age** is second nature for many in the Nordics – nearly all (93–97%) Nordic households are connected to the internet.[20] Several visionaries have already embraced digital technologies to encourage food movements. Examples include food waste apps like Karma or Too Good To Go that make it easy for individuals to 'save' food destined for the bin, and a sustainability label that displays on your mobile when a bar code is scanned.[21]
- **There is an increased awareness and concern about climate and environmental issues** across large parts of the population. Individuals such as Greta Thunberg and the recent COVID-19 pandemic have been vital to demonstrating the links between our consumption patterns and the environmental crisis. This awareness could be harnessed to shift populations towards more sustainable eating habits.

Box 3. The New Nordic Cuisine Manifesto

Below are the ten aims that chefs around the Nordics developed in order to shift Nordic food culture in a more sustainable direction. How could we build on the success of this movement?

1. To express the purity, freshness, simplicity and ethics we wish to associate to our region.
2. To reflect the changes of the seasons in the meal we make.
3. To base our cooking on ingredients and produce whose characteristics are particularly in our climates, lanscapes and waters.
4. To combine the demand for good taste with modern knowledge of health and well-being.
5. To promote Nordic products and the variety of Nordic producers - and to spread the word about their underlying cultures.
6. To promote animal welfare and a sound production process in our seas, on our farmland and in the wild.
7. To develop potentially new applications of traditional Nordic food products.
8. To combine the best in Nordic cookery and culinary traditions with impulses from abroad.
9. To combine local self-suffiency with regional sharing of high-quality products.
10. To join forces with consumer representatives, other cooking craftsmen, agriculture, fishing, food, retail and wholesales industries, researchers, teachers, politicians and authorities on this project for the benefit and advantage of everyone in the Nordic countries.

See more on the New Nordic Food Manifesto here

3. Develop a tool to assess the sustainability trade-offs and benefits of different production systems

Discussions about animal production and alternative plant protein production in the Nordics will be some of the most contentious, sensitive and polarising discussions in the journey towards food system transformation. There are both benefits and challenges of both types of systems (Table 1), and addressing trade-offs will require normative, in addition to scientific, assessments.

Despite the focus on sustainable production by participants, this third recommendation stops short of proposing a Nordic definition of sustainable production. Due to different geographical contexts, traditions, and agricultural policy contexts across countries, the pathways and solutions for sustainable food production will be different across Nordic countries. However, there is value in creating a standard tool that could be used to assess the trade-offs and benefits of a variety of production systems. Rather than providing a solution (i.e. pig production is best, or grain production is best), the tool could inform decisions about which production pathways might be most sustainable in a particular context. Thus, such an assessment tool could be used across different production contexts.

Since there is currently no tool to holistically address these trade-offs, it will need to be developed. An important consideration is: Which criteria should be included in such an assessment tool? If the goal is to assess sustainability trade-offs of different production systems, then environmental impacts of different production systems would need to be considered.

However, there is a range of other factors that lead to 'sustainable' production. This includes a focus on livelihoods supported by each production system, good animal welfare, and whether or not each production system can provide the inputs of healthy diets. In other words, there are many social, economic and environmental factors that could be considered when assessing sustainability trade-offs and benefits. Due to the normativity of social and economic sustainability, consultation with experts, farmers, citizens, and researchers would be needed to determine the criteria included in the assessment tool.

	Benefits	Challenges
Livestock	• Grazing can preserve open landscapes and the biodiversity they support[22] • Well-managed livestock systems can use uncultivable land to produce food[22] • Livestock production supports many farmers' livelihoods • A considerable part of agricultural export revenue in some Nordic countries is from animal-sourced products[25]	• Production of animal feed on arable land limits land that can be used to feed humans directly[22] • The livestock sector is a key contributor to agricultural greenhouse gases[23] • Manure runoff contributes to eutrophication of the Baltic Sea[24] • Consumption of red and processed meat is linked with adverse health impacts[6,9]
Plant-based proteins	• Legumes have environmental benefits as 'nitrogen fixers' and can improve soil quality • Moving from livestock to plant-based protein sources can reduce animal welfare concerns • Companies can capitalise on shifts in consumer demands and scale/commercialise plant-based foods[26,27] • Higher consumption of legumes and nuts could provide inputs of healthy diets in line with national and international guidance[1]	• Nuts, in particular, are not typically grown on a large scale in the Nordics • Some plant-based protein sources like nuts require high natural resource use such as water[25] • Nuts and legumes have not made up a significant part of traditional Nordic diets and may be difficult to embed into modern food culture • Shifting food production would require significant investment in new infrastructure, training and transition support to farmers if more legumes and nuts were to be cultivated in the region

Table 1: Selected benefits and challenges of livestock and plant protein production.

As illustrated below, stakeholders acknowledged the many benefits and trade-offs of different production systems that need to be put on the table when making decisions about the future of Nordic food production.

What dialogue participants had to say

- **Environmental impacts (local and global) should be prioritised** – The environmental impacts of different production systems were a hot topic among participants, signalling that an environmental assessment needs to be central to the assessment tool. Participants noted that no plant or animal protein source was free from environmental impact (see Table 1 for pros and cons of each system). Participants also recognised that not all of these impacts occur in the Nordic region. Taking a global, as well as regional, perspective on environmental impacts is needed.
- **Farmers and rural communities should not bear the burden of change** – Dialogue participants also made it clear that farmers could be negatively impacted through loss of competitiveness, increase in unemployment, and loss of livelihood when shifting away from livestock farming. Participants identified several support systems and safety nets that could be put in place to ease the burden on farmers. This signals that producer livelihoods should be a crucial part of the assessment tool.
- **Trade needs to be assessed** – Many participants highlighted how important agricultural and fisheries products were for national export revenues. In other words, the economic impacts of production from a trade perspective should be included in the assessment tool. At the same time, participants noted that it is not resource efficient to grow all foods here in the Nordics. The assessment tool could also consider the possibility to import, rather than locally-produce, certain foods.
- **There are geographical limitations to Nordic production but also opportunities** – Dialogue participants flagged the difficulties of growing plant-based proteins in terms of geography and climatic conditions of the Nordics. Many held the view that the Nordic region is optimised for meat production. On the other hand, participants noted the opportunities in terms of innovation, tech solutions and R&D that can be used to grow and produce a range of protein sources. The difficulties and potential benefits linked to local food production should be included in the assessment tool.

Where to start?

Guiding questions for Nordic collaboration

- Beyond environmental, health and economic impacts, what specific criteria should be included in the analysis of system trade-offs and benefits?
- How can these criteria be assessed objectively?
- What food production systems in the Nordics allow for the maximum number of synergies across sustainability goals while limiting the number of trade-offs?

Springboards for action

- These **Nordic stakeholder dialogues** have identified criteria that food system stakeholders deem important to include in the assessment of trade-offs. Incorporating these criteria could help increase ownership and buy-in for the suggested tool.
- **Frameworks to assess synergies** across the SDGs can be built upon and adapted for this challenge area.[29]
- **Modelling tools** such as the NorthWesternPaths project led by the Stockholm Resilience Centre aim to create models of Nordic food and land-use systems to assess various environmental, economic, or dietary impacts of food system change. NorthWestern Paths and similar modelling tools can be used to model the anticipated impacts of various food system shifts.

4. Bolster the agricultural and food sector workforce

Employment in agriculture accounts for only 1.5–4% of all employment across the Nordics.[30,31] Still, the number of farmers is declining. This trend is due in part to the creation of larger agricultural holdings where mechanisation replaces the need for human labour. But there are other factors at play as well. For example, farmers may face low-profitability of their production. Large existing capital investments of, for example, machinery or specialised buildings can make it challenging to make shifts to their production or their livelihoods. In discussions between researchers and youth and through anecdotal reports,[32] it seems that fewer and fewer younger people are finding traditional agricultural work to be an attractive livelihood – or an attainable livelihood – due to the high start-up costs.

Further, those with their livelihoods in agriculture and the food sector can face more challenging working conditions. For example, these workers often face long days and physically demanding work. The COVID-19 pandemic highlights the precarious position of migrant workers who, even before the pandemic, often endured worse working conditions or lower pay than those protected by trade unions.[33] Producers also face intense scrutiny, going so far as being 'shamed' for their contributions to the environmental crisis, further lending to the unattractiveness of the profession.[34]

To build resilient food systems that achieve the goals of sustainable production, thriving countrysides, or internationally competitive Nordic food production, the agricultural and food industry professions need to be attractive, sustainable and revered. These professions also need to be economically viable – to enter into and to sustain. The Nordic countries can work together to ensure that the agricultural and food industries have the tools to seize the opportunities presented by food system transformation.

What dialogue participants had to say

- **There are clear business opportunities** – Many participants felt that a food system transformation would open the door to business opportunities and entrepreneurship, including new companies, new products and new markets. Many felt that the Nordics were well-placed to develop high-value products that could be marketed both at home and abroad. They also noted business opportunities for farmers who might find new sources of income through product diversification or value-added products.
- **The employment potential extends beyond meat and dairy** – Participants highlighted several production systems and value chains in addition to/instead of meat and dairy that could be developed, providing jobs in the process. For example, participants highlighted the potential of the seafood sector to grow. Similarly, participants identified opportunities for plant-based products, Nordic legumes, and even insect production and lab meat.
- **Redefining the producer** – Several participants in the dialogue felt that food system transformations could lead to farmers being seen in a new light. For example, by encouraging local farming, one participant said that 'farmers will be heroes' and they would receive more respect from consumers. Support for local agriculture could also help the younger generation enter into the agricultural sector and solve the generation shift by providing a promising future for younger farmers.
- **Investment will be needed** – Participants stressed that farmers could not make this transition without support. In particular, innovation funding would be needed, as well as mechanisms for risk-sharing and investment in infrastructure.

Where to start?

Guiding questions for Nordic collaboration

- What specific support and investment mechanisms are needed to bolster the existing and incoming agricultural and food sector workforce?
- How can producers be rewarded for their role as environmental stewards, and how can food industry workers be acknowledged for providing 'essential services'?

Springboards for action

- **Support existing young farmer networks** – Agricultural associations can be a platform for engaging young farmers (e.g. Federation of Young Swedish Farmers).
- **Support programs that reduce entry barriers** – Finland's Rural Development Programme[35] actively works to reduce the barriers for young people to enter into agricultural employment by providing 'setting up' support. Such programs exist in most Nordic countries and can be expanded.
- **Support initiatives to improve migrant worker conditions** – The Ax Foundation in Sweden has supported the project 'Working Conditions in Swedish Agriculture.'[33] This initiative brought together a range of stakeholders – including food companies, researchers, trade unions – to develop a certification that regulates the working conditions of migrant workers.

Food producers are the stewards of our land and seas. Photo by Zoe Schaeffer on Unsplash.

5. Ensure thriving countrysides and urban-rural connections

Urbanisation is a trend here to stay, both globally and in the Nordics. By 2050, two-thirds of the global population is expected to be urban-dwelling. Closer to home, the Nordic capitals are expected to grow by more than 10% by 2030.[36] The pace of medium-size city growth is already outstripping that of the capital cities.[36]

At the same time, there are signs that countrysides are changing. Despite being the home of many of the region's natural resources, many (but not all) rural areas across the Nordics are showing signs of decline. This can be seen through declining populations, ageing populations and fewer perceived employment opportunities.[31] From a food and land use perspective, declining rural areas raise questions around the future of food production in the Nordics and the preservation of biodiversity in current agricultural land.

Governments have been active in the revival of rural areas through funding and networking programs that enable and encourage competitive business opportunities, support ecosystem conservation, and improve the quality of life in rural areas. But what about the connection between urban and rural areas? What can urban areas learn and gain from rural areas, and vice-versa? Although these are not new questions, they are included here because dialogue participants stressed the transformative potential of ensuring that thriving countrysides are well connected to rapidly growing urban areas.

What dialogue participants had to say

- **Countrysides as hubs of entrepreneurship, innovation and employment** – Dialogue participants raised concerns over rural depopulation and loss of agricultural jobs. At the same time, a variety of food system shifts were seen as a key to bringing new employment opportunities, business ideas and supply chain innovations.
- **Food and culinary tourism** – Rural areas need not be seen only as areas for food production. As some dialogue participants expressed, these areas could also be centres for food and culinary tourism.
- **Greater connections between consumers and food** – Several dialogue participants noted that strengthening the relationship between consumers, producers, and the foods they produced should be a crucial part of future Nordic food systems.
- **Diversifying production** – Diversifying production on a national level was seen as a way to create new livelihoods in the countryside and spur the development of new businesses (e.g. creating new plant-based products). Diversifying production was seen by some as a way to improve environmental outcomes of food production and increase the resilience of the Nordic food production systems, thus contributing to thriving and sustainable countrysides. On the other hand, some dialogue participants felt that diversifying into some areas, such as legume or nut production, could have negative impacts on both rural development and employment. These concerns signal an area for further investigation.
- **Promoting local food systems** – Many dialogue participants felt that shifting towards more local food systems could encourage movement back to the countryside, or at least slow down urbanisation. This movement could improve rural livelihoods, provide new business opportunities and contribute to a flourishing countryside. Some described this as a 'better balance of rural-urban', or 'less tension between cities and countrysides.' *The research team notes that there could be tensions between sustainability goals when it comes to local food systems. For example, 'going local' isn't always the most environmentally sustainable or resilient, although it could be a path to supporting Nordic producers.*

Where to start?

Guiding questions for Nordic collaboration

- What type and level of investment is needed to promote urban-rural linkages?
- How can we sustainably tap into the natural resources of rural areas?
- What does a future look like where urban and rural communities are sustainably connected?

Springboards for action

- **The Rural Development and Bioeconomy strategies** of Nordic countries can be built upon to accelerate action on thriving countrysides and rural-urban connections.
- **The Nordregio platform**[37], which already focuses on rural-urban issues, can be further engaged to facilitate the development of pathways towards sustainable rural-urban linkages.
- **Digitalisation strategies** – Initiatives such as Iceland's Rural Fibre Project have aimed to get rural regions connected to the internet.[38] Other projects such as Denmark's Digital Growth Strategy[39] can be used to ensure that digitalisation unlocks new levels of prosperity for those living in rural areas.
- **The tourism industry** –The Nordics have seen a rise in food tourism in recent years.[40] Several dialogue participants expressed that food and agroecological tourism can grow even more if we work to preserve our natural landscapes and to develop new sustainable products and cuisines. In Iceland, for example, new jobs have been created in rural areas, reversing rural depopulation for the first time since the latter half of the 1800s.[41] Inspiration can be drawn from the Icelandic experience.

Photo by John Reed on Unsplash.

6. Build an equitable and just food system transformation

'Leave no one behind'[42] – this statement is a cornerstone of the Sustainable Development Goals and the European Commission's new Fark to Fork Strategy. It is also considered a guiding principle of the Nordic Council of Ministers' Agenda 2030 program. This principle underscores the necessity to build equitable transformations, ensuring that those vulnerable to shocks and marginalised due to, for example, socio-economic status, are given support to harness the benefits of transformation like any other.

To build an equitable food system transformation, we need to acknowledge both who is currently 'left behind' in food systems, and who risks being left behind with changes to our food systems. Several inequities are visible in our food systems at present. These include diet-related inequality associated with income level, level of education, or place of residence. Inequities can also be felt by those working in the food and agricultural sector. For example, some workers might be adversely affected by unstable or temporary work or low-paying jobs. In other words, people are already being left behind in our current food system, signalling the necessity of change.

There are many uncertainties when it comes to who might fall behind in a food systems transformation. For example, if people consume less red meat, will farmers or businesses lose their jobs as a result of shifting consumer demand or regulations mandating a greater focus on crops used for human consumption? Will all populations get the nutrients they need if plant proteins become the dominant protein source? Will environmental issues be forgotten when considering current or future trajectories?

Some transformation pathways might be expected to increase the inequities of a particular group or segment of the population. However, this does not give us reason to avoid transformation altogether. Instead, it signals that a different pathway might be best. Alternatively, it might signal that when individuals are forecasted to fall behind, it is essential that we build safety nets and direct investment towards those individuals to build equitable and just food system transformations.

What dialogue participants had to say

- **There is no path where everyone 'wins'** – In the dialogues, no proposed food system transformation would produce benefits for all individuals. For example, if red meat consumption decreased, participants felt that the diets and diet-related health of many would improve, and it would open up the door to innovation and entrepreneurship of plant-based foods. On the other hand, meat producers could be disadvantaged, and certain groups such as the elderly or young women could face challenges in securing a nutritious diet. These tensions signal the need to identify those who might fall behind and help them reap the benefits of transformation.
- **The cost of food is a key concern** – Many participants expressed the necessity of affordable diets. However, some pathways that were expected to bring lower food prices – such as embracing global food trade – were also expected to bring some negative consequences, such as negative environmental impacts or unemployment. Others felt that the cost of food should reflect its 'true value' to ensure that smallholders and the environment are not left behind, and negative externalities are accounted for. As this would inevitably result in higher food prices, other interventions would be needed to ensure affordable diets for all.
- **Certain groups need to be helped in this transition** – As highlighted throughout this Insight Paper, participants identified several segments of the population that might need extra support in benefiting from transformation. These groups include farmers and producers, particularly local producers, meat-producers and smallholder farmers globally. Some Nordic businesses, such as those who rely on export markets, were also identified as needing support through a food system transformation. Groups that would need help to secure sustainable diets include low-income groups; individuals at risk of nutrient deficiency; people who lack knowledge and cooking skills on sustainable food; and those living in rural communities.
- **An equitable transformation that extends beyond the Nordics** – Participants were not only concerned about equitable outcomes in the Nordics, but also throughout the global food system. Concerns included supporting smallholder farmers in low-income regions, reducing 'out-sourced' environmental impacts of Nordic food consumption, alleviating poverty, or ensuring equitable living standards and human rights for those in the food and agricultural sectors across the globe.

Where to start?

Guiding questions for Nordic collaboration

- Who is being disadvantaged in our current food system, and how can food system transformation be designed to help these groups?
- Who might lose out (i.e. be disadvantaged) in the shift to future food systems? How can additional measures, investments and support be implemented to help those individuals gain rather than lose from food system change?
- What are the goals of an equitable food system?

Springboards for action

- **Use the public services** to which all Nordic residents have access. For example, everyone has access to the healthcare system. Healthcare professions could be better equipped to provide advice on sustainable diets if this was incorporated into the curriculum of healthcare professionals. Everyone has access to the education system. Then sustainable diets could be promoted by providing sustainable meals at schools and integrating sustainable food systems into students' curriculum – as is done in several countries already.
- **Build upon existing strategies and targets to reduce inequalities.** For example, the 'Nordic Plan of Action on better health and quality of life through diet and physical activity'[43] includes targets for reduced health and diet-related inequalities. These targets could be expanded in their scope.

Insights from the stakeholder dialogues regarding an equitable and just food transformation.

7. Address the out-sourced impacts of Nordic food systems

Nordic food systems are deeply integrated into global food systems. For example, the Nordics import about 40% of the foods consumed in the region.[1] Similarly, the region exports foods and agricultural commodities globally. For example, exports of pork in Denmark account for roughly 50% of agricultural exports and 5% of the country's total exports.[25] The Nordic region also relies on inputs from around the world to keep the food system going – whether that be imported feed, fertiliser or energy to enable farms; foreign labour for harvesting; or importing of knowledge and skills from around the world. In other words, there is no way to separate the global food system from the regional food system!

Given the flows of resources around the world, it is inevitable that the Nordics out-source some of their environmental impacts. The same can be said of other countries that out-source part of their environmental impact to the Nordics through importing foods grown in the Nordics. Out-sourcing of production or processing can be beneficial – for example, it can be seen as environmentally efficient to grow foods in locations where they can be sustainably produced, then to export that food elsewhere. Growing coffee and oranges in the Nordics, for example, may not be the most efficient use of our resources.

However, care needs to be taken to avoid unnecessary out-sourcing of environmental impacts and out-sourcing of impacts that negatively impacts the sustainability and resilience potential of the source country. According to an analysis of the environmental impacts of Swedish diets, the high biodiversity impact of the typical Nordic diet stems from foods such as olive oil, coffee, cocoa and tropical fruits. These foods are not grown here in the Nordics, and either require a large amount of land use or are produced on land with a high biodiversity loss associated with agriculture.[5] A separate study of Swedish diets found that foods with a high chemical footprint – including pesticides, herbicides, antibiotics – are overwhelming those foods imported into the Nordics.[51] Thus, for more sustainable Nordic food systems, we have to think *globally*.

What dialogue participants had to say

- **Environmental impacts are not the whole story** – Out-sourced environmental impacts were often mentioned – particularly concerning biodiversity or water. While important, these are not the only food system impacts that can be out-sourced. Participants also highlighted how decisions made about food in the Nordics might result in undesirable social consequences elsewhere. For example, participants raised questions such as: Does the demand for meat in rich countries like the Nordics hinder people in other parts of the world from achieving proper nutrition? Does the global food system promote bad conditions for farmers and workers in low-income countries?
- **Nuts and water use** – When focused on increasing nut and legume consumption, some participants raised concerns that a potential increase in demand for nuts in the Nordics would result in more significant out-sourced impacts to the places where nuts are grown. In particular, participants were concerned about water use in already resource-scarce areas such as California in the United States.
- **Global versus local** – Most participants concerned with out-sourced impacts felt that global food systems posed a greater risk for out-sourcing environmental impacts than local food systems. However, some felt that local production systems would force some countries to grow foods that were not suited to their conditions, resulting in a more significant impact in that region.
- **Transparency of food chains is needed** – Participants noted that transparency is often lacking in globalised food systems. This lack of information makes it challenging to know the origins of a food or product and the negative social and environmental impacts of the item. Improving transparency of global food systems could be vital in recognising and reducing harmful out-sourced impacts.

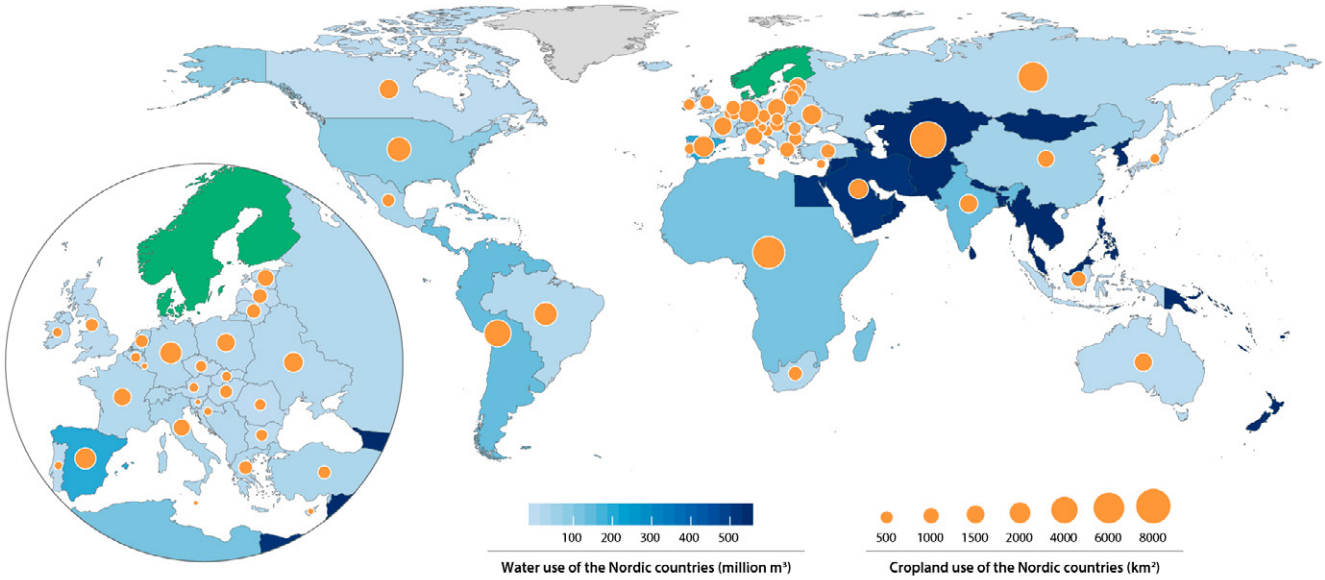
Where to start?

Guiding questions for Nordic collaboration

- Which impacts of Nordic food systems are out-sourced, and which of these impacts are leading to diminished social or environmental sustainability in the source country?
- Which out-sourced impacts can the Nordics reduce on their own (e.g. through a shift in demand from Nordic consumers), and which will require collaboration (e.g. across value chains)?

Springboards for action

- **Build on and use existing databases** aiming to increase transparency in global supply chains. TRASE[44], for example, looks at several critical agricultural commodity supply chains, such as beef, coffee, soy and palm oil.
- **Strengthen and expand international collaborations** in which several Nordic countries participate. These include collaborations that are part of the Supply Chain Transparency Network or partnerships such as the Amsterdam Declarations Partnership.
- **Create sustainable food strategies** and then align national- and foreign-focused food strategies. An excellent example of this is the Norwegian sustainable food system strategy in the context of foreign and development policy.[45]



This figure shows the extent of blue water use and cropland use outside of the Nordics that is used to produce Nordic diets. Trade flows were analysed using a sophisticated model to link foods consumed in the Nordics with the source countries where those foods were produced. Reprinted with permission from the authors of *Nordic food systems for improved health and sustainability*. Wood et al., 2019. Figure by Azote.

8. Rethink a competitive export market for Nordic food

All Nordic countries export food and agricultural commodities, and these are considered to be an essential source of export revenue across the region. It is crucial to keep in mind that the extent of exports varies significantly across the Nordic countries – both in terms of absolute value and relative export earnings. For example, approximately 40%, 23%, 11%, 6%, and 2% of Iceland, Denmark, Norway, Sweden, and Finland's total export revenue, respectively, came from food and agricultural products in 2018.[25]

Substantial export opportunities for food and agricultural products and competitive food production sectors are top national priorities, reflected in the Swedish National Food Strategy[46], the Finnish Food Strategy[47], and the Danish White Paper on Food Quality and Safety[48], among others.

There has been a strong focus on the export of meat products. The reasoning is that the Nordics can produce meat products in a more sustainable way than other countries. Thus, those products should be produced in the Nordics and exported to other countries. Others have argued, however, that livestock products are not very sustainable from the start, and the focus should be on the export of other products. It is also important to understand where Nordic meat is being exported – Is it only to those countries that cannot produce meat? Is it exported in quantities that still allows for sustainable diets in those countries? And is it taking away the livelihoods of smallholders in those importing countries?

However, countries are also embracing alternative exports, such as knowledge-based goods, best practice or equipment and technologies, and these 'springboards of action' are discussed below. As the Nordics tackle challenges related to sustainable food systems, it is not only the sustainable foods themselves, but also the know-how and innovations, that can be exported.

What dialogue participants had to say

- **The export economy is critically important** – One of the major concerns with all food system changes discussed was the impact it would have on food and agricultural exports. Uncertainties were raised such as: Would food system transformation negatively impact national export revenues? How would the incomes and livelihoods of those who export food be affected?
- **The shift to sustainable food systems can lead to an export boom** – Many participants felt that the Nordics would be competitive in the production of high-quality, sustainably produced food. Given the strict standards for animal welfare and antibiotics use, combined with new standards for sustainable production, participants felt that Nordic products could be exported as high-value products.
- **Nordic innovation** – Many participants noted that there were significant export opportunities related to new types of plant-based products. They felt that the Nordics could be well placed to help feed the global demand for new types of plant-based foods.
- **Beyond foods** – In addition to sustainable food products themselves, participants saw opportunities to export technologies, expertise in circular systems, and know-how on sustainable food production (including meat production).
- **A chance to be leaders** – Several participants drew attention to the fact that market priorities and sustainable development were not aligned. Participants also emphasised that the Nordic countries had the chance to 'be leaders' and that food transformation was a chance to 'change everything.'

Where to start?

Guiding questions for Nordic collaboration

- How can we rethink food and agricultural exports to align with sustainability goals?
- What else, besides food products, fits in the portfolio of sustainable Nordic food system exports?
- How can the Nordics capture the benefit of being first movers and innovators in sustainable foods, food tech and production know-how?

Springboards for action

- Draw inspiration from **national success stories**. For example, Iceland exports its know-how in geothermal energy to countries around the world.[49] In Denmark, over 80% of food processing equipment (including sensor technologies and IT systems) are exported globally.[48]
- Extend the **Nordic Solutions to Global Challenges** initiative, scheduled to finish at the end of 2020, as a platform to export solutions for sustainable development around the world.
- Operationalise **public sector recommendations**[50] to strengthen Nordic collaboration on exporting Green Solutions from the Nordics.

Dialogue participants identified many export opportunities that could result from shifts to sustainable food systems. Photo by Cytonn Photography on Unsplash.

Different challenges call for different layers of action

The focus on Nordic collaboration on food is not intended to replace national action, but rather to provide an additional layer of action. Food system change is needed at local, national, regional and international levels, and change across these levels needs to be aligned towards shared goals. The pathways, however, need not and will not be the same everywhere. Countries are facing distinct challenges based on their unique contexts, and these will also need to be addressed to reach the shared goal of sustainable food systems.

Such differences across countries were apparent in the transformation dialogues. Specific challenges that were discussed in some Nordic countries were not mentioned in other countries. For example, tourism was particularly important in the Icelandic context, marine food production was a recurring issue in Norwegian and Icelandic discussions, peatland farming was highlighted in Finland, and forestry was an important issue in Finland and Sweden. Further, opinions about how to address these challenges differed across and within countries – there were no unanimous solutions that emerged from the dialogues.

The focus on Nordic collaboration aims to embrace joint opportunities for action. In the tradition of Nordic collaboration, there is hope that food system transformation can be accelerated by finding common solutions to shared challenges. The third Insight Paper of the Nordic food system transformation series discusses potential barriers on the road to sustainable food systems and explores ways to overcome those challenges.

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About this Series

The Stockholm Resilience Centre will release a multi-part series of Insight Papers related to Nordic food system transformation dialogues. Each Insight Paper focuses on a central theme or finding that emerged from the dialogues. All Insight Papers can be found on the Stockholm Resilience website: www.stockholmresilience.org.

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