



Synergies and trade-offs between crisis preparedness and environmental sustainability of school meals in Sweden

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Stockholm
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Synergies and trade-offs between crisis preparedness and environmental sustainability of school meals in Sweden

Synergier och avvägningar mellan krisberedskap och miljömässigt hållbara skolmåltider i Sverige

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Denna rapport är framtagen inom forskningsprogrammet Mistra Food Futures. Det övergripande målet för programmet är att skapa en vetenskapligt baserad plattform som bidrar till att det svenska livsmedelssystemet kan transformeras till ett system som är ekonomiskt, socialt och miljömässigt hållbart samt resilient och kan leverera hälsosam mat. Målet uppnås genom att utveckla ett nära samarbete mellan akademien och ett antal nyckelaktörer i det svenska livsmedelssystemet. Den här rapporten utgör en del av Mistra Food Futures arbete med att beskriva produktionssystem som minskar klimatpåverkan. Detta utgör en av de centrala frågeställningarna inom Mistra Food Futures.

Mistra Food Futures leds och samordnas av Sveriges lantbruksuniversitet SLU i samarbete med forskningsinstitutet RISE och Stockholm Resilience Centre vid Stockholms universitet. Övriga partners inom programmet omfattar en bred representation av aktörer från akademi, näringsliv, branschorganisationer och regioner.

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Abstract

Recent demands and efforts to increase the food preparedness of Swedish municipalities call for an examination of how sustainable development and resilience is addressed in preparedness planning. This study explores opportunities and barriers for environmental sustainability and crisis preparedness to go hand in hand, using the case of school meals in Sweden. Specifically, we ask how recent crises and calls for preparedness affect the municipalities' work with sustainable school meals and what short-term solutions and long-term strategies may have emerged as a result. A national survey of 120 municipality officials and five semi-structured interviews were conducted. The results indicate that municipality officials generally do not find that there is a trade-off between environmental sustainability and preparedness work for school meals, with several noting that the increased focus on preparedness rather opens up for an increased focus on local food systems and using public procurement as a tool for shaping the production landscape. The findings presented in this report show that while the emphasis currently seems to be on organizing a crisis management and quickly putting in place short-term interventions to increase preparedness, the interviews with dietary managers and procurement officers provide examples of how improved food preparedness can be achieved simultaneously as the food system is pushed in a more sustainable direction. Still, municipalities around the country are at very different stages in their preparedness planning and environmental ambitions vary greatly. A clear national strategy that treats food preparedness and a sustainability transition of food systems as linked policy areas would therefore be beneficial in order to exploit synergies and manage trade-offs. By sharing risk with and building capacity of local food producers, public meal operations could play a key role in supporting and developing a food system that is resilient in the event of a crisis at the same time as it reduces the negative impact of food on climate and the environment. We conclude that the present moment represents a unique window of opportunity for deliberately exploiting synergies between increased preparedness, resilience, and sustainability of food systems.

Sammanfattning

Det globala livsmedelssystemet står inför flera sammanlänkade kriser. Rysslands invasion av Ukraina, covid-19-pandemin och klimatrelaterade effekter på jordbruket runt om i världen har uppmärksammat strukturella sårbarheter i livsmedelssystemet, med konsekvenser för både svensk och global matförsörjning. Till följd av detta har krav på en ökad och förnyad nationell livsmedelsberedskap i Sverige uppkommit. Mot bakgrund av det ökade fokuset på kris och krisförberedelse så utforskar denna studie hur miljömässig hållbarhet och resiliens hanteras i beredskapsplaneringen för offentliga måltider. Betraktas miljömässig hållbarhet som ett verktyg, ett hot eller helt enkelt som en icke-fråga?

Att använda offentliga måltider som ett verktyg i omställningen till ett mer hållbart och resilient livsmedelssystem har varit en central rekommendation i en rad publikationer de senaste åren (Halloran et al. 2020; Lindahl & Jonell 2020; Rööös et al. 2020; Pastorino et al. 2023). Varje dag äter ungefär en tredjedel av befolkningen en offentlig måltid i svenska skolor, sjukhus och äldreboenden (Swedish Food Agency 2022b). Även om detta bara står för en liten del av den totala livsmedelskonsumtionen i Sverige så utgör offentliga måltider en potentiellt kraftfull hävstångspunkt för att påverka både produktion och konsumtion i en mer hälsosam och hållbar riktning. På produktionssidan kan offentlig upphandling skapa en stabil efterfrågan på mer hållbart producerade livsmedel och därigenom driva en förändring mot ett mer hållbart jordbruk. Genom att

handla från lokal och småskalig produktion kan offentliga livsmedelsinköp också fungera som ett verktyg för att öka självförsörjningen av livsmedel och diversifiera produktionen, vilket stöder resiliens och utveckling av lokala livsmedelssystem.

Syftet med denna studie är att utforska möjligheter och barriärer för miljömässig hållbarhet och livsmedelsberedskap att gå hand i hand, med fokus på svenska kommuners arbete med skolmåltider. Mer konkret söker den svar på hur den senaste tidens kriser och uppmaningar till beredskap påverkar kommunernas arbete med hållbara skolmåltider och vilka kortsiktiga lösningar och långsiktiga strategier som har identifierats och initierats därav. I studiens första fas genomfördes en nationell enkätundersökning av 120 kommunala tjänstemän för att ge en översikt över var livsmedelsberedskap och hållbarhet befinner sig på dagordningen i den offentliga måltidsverksamheten. Detta följdes upp med fem semi-strukturerade intervjuer med kostchefer och upphandlare för att skapa en fördjupad förståelse för hur samspelet mellan aktiviteter för att öka miljömässig hållbarhet, krisberedskap och resiliens i lokala livsmedelssystem kan se ut.

Resultaten visar att beredskap i förhållande till den offentliga måltidsverksamheten generellt sett är mycket högt prioriterat i landets kommuner. Anledningen till detta hänvisas i intervjuerna till "tillståndet i världen" – exemplifierat av krig i närområdet, klimatförändringar och erfarenhet av försörjningskedjornas sårbarhet under pandemin – tillsammans med politiska uppmaningar till livsmedelsberedskap och återinförandet av Sveriges totalförsvaret. I alla intervjuer noteras det att beredskapsarbete sällan har stått på agendan fram tills för några år sedan.

Vidare bedömer över 60% av enkätrespondenterna att det är av hög prioritet (4 eller 5 på en skala från 1–5) att kommunens måltidsverksamhet bidrar till långsiktig hållbar utveckling. Samtidigt är de lägst prioriterade områdena av de givna alternativen att öka andelen ekologisk mat i skolmaten, följt av insatser för att minska mängden kött i skolmaten. Både resultat från enkäten och intervjuerna pekar på att kostchefer, livsmedelsupphandlare och andra kommunanställda inte upplever att det finns en motsättning mellan att öka beredskapen och att hålla takten i det miljömässiga hållbarhetsarbetet. Samtidigt noteras det att andelen ekologiska livsmedel i skolmåltiderna generellt sett sjunker. En anledning till denna paradox kan vara att det snarare är höjningen av livsmedelspriser och ansträngda budgetar snarare än beredskapsarbetet i sig som gör att kommunerna i viss mån nedprioriterar ekologiska livsmedel. Parallellt med detta framkommer det i flertalet intervjuer att lokalproducerade eller svenskproducerade livsmedel i vissa fall anses vara det mer hållbara alternativet jämfört med det ekologiska, eller åtminstone det överlag bästa alternativet eftersom det även bidrar till mål om regional utveckling och beredskap.

Resultaten visar på en trend mot lokalisering av livsmedelssystemet för skolmåltider. Ökad eller bibehållen upphandling av lokal mat i tider av ekonomisk stress och krisplanering framstår som en direkt eller indirekt strategi för att bygga beredskap och motståndskraft. I intervjuer diskuteras insatser för att minska beroendet på de stora livsmedelsgrossisterna till fördel för mer lokala aktörer med syfte att stärka lokal motståndskraft mot kriser och bidra till regional utveckling. I ett nytt risklandskap tycks det värderas mer än tidigare att bygga nära band med en mångfald av livsmedelsleverantörer i närområdet. Det är en utveckling som har potential att – under rätt omständigheter – föra med sig hållbarhetsfördelar. Så kan särskilt vara fallet i de kommuner som arbetar med strategiskt stöd, riskdelning och kapacitetsbyggande insatser riktade mot lokala livsmedelsleverantörer, exempelvis för att ställa om till miljömässigt bättre metoder eller produktion av mer diversifierade och hållbara grödor. Vidare så framkommer det i flera intervjuer att kraven på krisberedskap och motståndskraft har gett, eller önskas ge, upphov till nya sätt att upphandla och skriva kontrakt, i första hand för att möjliggöra mer långsiktighet och stabilitet i relationen med lokala leverantörer. Genom att dela risker med producenter, ställa krav och aktivt arbeta för att stötta hållbarhetsinsatser genom dialog och kapacitetsbyggande, ser vi exempel på hur kommuner i vissa

fall formar det lokala produktionslandskapet på ett sätt som kan gynna en miljömässigt hållbar och resilient livsmedelsförsörjning i närområdet.

Kort sagt visar resultaten som presenteras i den här rapporten att även om den största tonvikten tycks vara på att organisera en krisledning och att snabbt få plats kortsiktiga insatser för att öka beredskapen, ger intervjuerna med kostchefer och livsmedelsupphandlare exempel på hur förbättrad livsmedelsberedskap kan uppnås samtidigt som livsmedelssystemet ställs om i mer hållbar riktning. Samtidigt är det värt att nämna att kommuner runt om i landet befinner sig i mycket olika stadier i sin beredskapsplanering och att miljöambitionerna varierar kraftigt. En tydlig nationell strategi som behandlar livsmedelsberedskap och en hållbarhetsomställning av livsmedelssystem som sammanlänkade policyområden vore därför gynnsam för att utnyttja synergier och undvika motsättningar. Offentlig måltidsverksamhet skulle kunna spela en nyckelroll för att stödja och utveckla ett resilient livsmedelssystem som är motståndskraftigt i händelse av kris och samtidigt minskar matens negativa påverkan på klimat och miljö.

Table of contents

LIST OF FIGURES AND TABLES	8
1. INTRODUCTION.....	9
1.1. AIM	10
1.2. SCOPE	10
2. SCHOOL MEALS AND PREPAREDNESS.....	11
2.1. SCHOOL MEALS IN SWEDEN.....	11
2.1.1. <i>Public food procurement</i>	11
2.1.2. <i>Guidelines and targets</i>	12
2.2. CRISIS PREPAREDNESS	13
3. FOOD SYSTEM SUSTAINABILITY AND RESILIENCE	14
3.1. SHIFTS NEEDED FOR SUSTAINABLE FOOD SYSTEMS.....	14
3.2. FOOD SYSTEM RESILIENCE	15
3.3. RISKS AND DISTURBANCES.....	16
4. METHOD.....	17
4.1. SURVEY	17
4.2. INTERVIEWS	17
4.2.1. <i>Semi-structured interviews</i>	17
4.2.2. <i>Selection of participants</i>	18
4.2.3. <i>Data treatment</i>	18
4.3. TERMS AND TRANSLATIONS USED	18
5. FINDINGS.....	20
5.1. SURVEY	20
5.1.1. <i>Respondents</i>	20
5.1.2. <i>Targets</i>	22
5.1.3. <i>Procurement of local food</i>	23
5.1.4. <i>Preparedness</i>	24
5.1.5. <i>Experiences of trade-offs and synergies</i>	24
5.2. INTERVIEWS	26
5.2.1. <i>Participants</i>	26
5.2.2. <i>Managing a new crisis and risk landscape</i>	27
5.2.3. <i>Trade-offs</i>	30
5.2.4. <i>Synergies</i>	30

6. CONCLUSION	33
REFERENCES	36
ACKNOWLEDGEMENTS	40
APPENDIX 1. SURVEY QUESTIONNAIRE IN ENGLISH	41
APPENDIX 2. INTERVIEW GUIDE.....	51
APPENDIX 3. INFORMATION AND CONSENT FORM.....	53

List of figures and tables

<i>Figure 1. Study focus</i>	10
<i>Figure 2. Respondents divided by county</i>	21
<i>Figure 3. Distribution of job functions among the respondents</i>	21
<i>Figure 4. Environmental targets for school meals</i>	22
<i>Figure 5. Motives for procuring local food</i>	23
<i>Figure 6. Contingency plans</i>	24
<i>Figure 7. Level of agreement with statements</i>	25
<i>Figure 8. Level of priority of various measures</i>	26
<i>Figure 9. Resilience framework with examples</i>	34
<i>Table 1. Identified societal disruptions of relevance to school meal operations</i>	16
<i>Table 2. Translations used</i>	19
<i>Table 3. Characteristics of interview participants</i>	26

1. Introduction

Multiple interlinked crises are facing the global food system: climate change, conflicts, pandemics, and economic turmoil (Clapp 2023; Queiroz et al. 2023). Recent events such as the COVID-19 pandemic, the Russian invasion of Ukraine, and effects of climate change on agriculture in various parts of the world have exposed structural vulnerabilities of the food system, with consequences for both Swedish and global food supply. As a response, calls for increased national food security in the event of a crisis have emerged in Sweden. In February 2024, a new law on food preparedness was proposed which, among other things, includes a legal municipal responsibility to plan and act to ensure access to food in case of a crisis (SOU 2024:8). Arguably, investing in a more sustainable and resilient food system is one way of reducing vulnerability and fostering more robust food security and crisis preparedness (Mistra Food Futures 2024). Recent efforts to increase the preparedness related to food in Swedish municipalities call for an examination of how sustainable development and resilience is addressed in preparedness planning – is environmental sustainability considered a tool, a threat, or just not relevant?

Using public meals as a vehicle in the transition to a more sustainable and resilient food system has been a key recommendation in recent publications (Halloran et al. 2020; Lindahl & Jonell 2020; Rööös et al. 2020; Pastorino et al. 2023). Every day, around a third of the population eats a public meal in Swedish schools, hospitals, and nursing homes (Swedish Food Agency 2022b). While this only makes up a small percentage of the total food consumption in Sweden, public meals constitute a powerful lever for shifting eating habits and social norms to promote healthy and sustainable food. On the production side, public procurement can create demand for more sustainably produced foods and thereby drive a shift in agricultural practices (Swensson et al. 2021). By aligning school meal demands with local and smallholder agricultural production, procurement can also serve as an instrument to increase food self-sufficiency and production diversification, supporting the development and resilience of local food systems.

In this study, we explore perspectives on synergies and tradeoffs between crisis preparedness and environmental sustainability of food in the context of the school meal operations in Swedish municipalities. First, a national survey of municipality officials was conducted to provide an overview of where preparedness and sustainability currently are on the agenda in relation to the public meal service. This was then followed up by semi-structured interviews with a selection of the respondents.

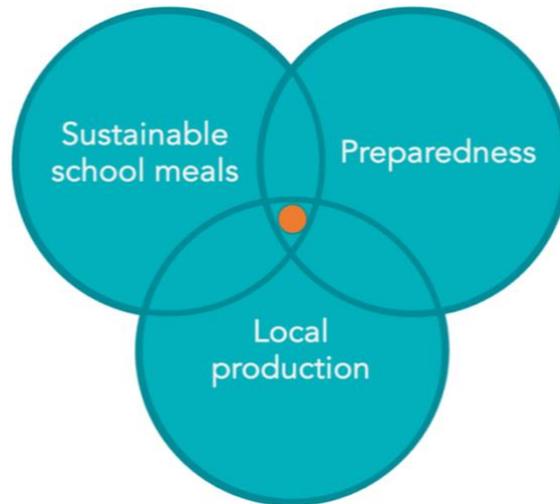


Figure 1. The focus of this study is on the interactions between activities to increase environmental sustainability, crisis preparedness related to food, and the resilience of local food systems, in the context of school meals in Sweden.

1.1. Aim

The aim of this study is to explore opportunities and barriers for environmental sustainability and crisis preparedness to go hand in hand, using the case of Swedish municipalities' work with school meals. Specifically, we ask how recent crises and calls for preparedness affect the municipalities' work with sustainable school meals and what short-term solutions and long-term strategies may have emerged as a result.

1.2. Scope

In this report, the focus is on public meals served in Swedish schools, including both public and private schools. Meals served in elderly care homes, hospitals, prisons, or other public institutions are beyond the scope of the study. The reason for this is that school meals are deemed particularly interesting from a transformation perspective, due to its unique norm building and pedagogical role.

2. School meals and preparedness

This section presents context and previous findings relevant to the research questions. First, an overview of the governance of school meals in Sweden, including relevant targets, guidelines and laws, is provided. Then, a brief background is given about Swedish preparedness and civil defence, specifically in relation to school meals and the responsibility of municipalities.

2.1. School meals in Sweden

The Swedish Education Act (2010:800) stipulates that all children in compulsory school (age 6–16 years) are entitled to school meals that are both nutritious and free of charge. The responsibility of school meals falls to the municipality or, in the case of independent schools, the owner. The local food distribution organization may vary, and the meal production can be operated by either the municipality or a purchased contractor. The food may be prepared in the schools' own kitchens or transported from another kitchen for later heating, the former being the most common in public schools (Swedish Food Agency 2022b). The vast majority of municipalities have a politically established meal policy in which local targets, priorities, and organization are made clear.

2.1.1. Public food procurement

Public food procurement has been identified as a possible “game changer for food system transformation”, with its potential to determine what food will be purchased (such as local, diverse, and, healthy), from whom (e.g. from local smallholder farmers), and from what type of production systems (e.g. produced in line with environmental sustainability and biodiversity conservation) (Swensson & Tartanac 2020; Swensson et al. 2021). Many actors in the Swedish public sector wish to see that public procurement contributes to promoting food production in Sweden or the local area, as reflected in many municipalities' politically established meal policies (Swedish Food Agency 2022b). According to the Public Procurement Act, all suppliers in the EU must be given the same opportunity to compete and it is therefore not possible to set requirements for locally produced food (National Agency for Public Procurement n.d.). However, there are ways to use procurement strategically in order to source more locally produced foods. Innovative examples on how municipalities can work more closely with local producers include paying a monthly subscription to local farmers to access grass-fed meat (MATtanken n.d.) and tailoring procurement calls to smaller wholesale suppliers with a focus on food from the nearby area (MATtanken 2023).

In 2022, the share of organic food in the public sector was 37% (Ekomatcentrum 2023). To put this in perspective, organic foods made up about 8% of total food purchases in Sweden in 2022 (Organic Sweden & Ekologiska Lantbrukarna 2023). Since 1999, Ekomatcentrum has mapped the purchases of organic food in the public sector and seen it steadily increasing every year until 2020. From 2020 to 2022, it has declined by one percentage point per year. Possible explanations for this development may be a shift in focus from organic products to locally produced products and the economic situation with rising food prices (National Agency for Public Procurement 2021; Ekomatcentrum 2023).

2.1.2. Guidelines and targets

The Swedish Food Agency has produced national guidelines for school meals to support municipalities and schools in preparing tasty, healthy and sustainable meals that also are an integrated part of the education program (Swedish Food Agency 2019). The recommendations for environmentally sustainable meals include:

- minimize waste in the kitchens, during serving and from the plates;
- choose food products that have been produced with consideration for the environment, animal welfare and social sustainability;
- ensure that wild-caught fish comes from stable stocks and has been fished with care for the environment;
- limit the proportion of meat and replace it with other protein-rich foods;
- primarily choose storable fruits and vegetables and vary according to season; and
- recycle waste and minimize transport and energy consumption.

These guidelines are generally referenced in the municipalities' meal policies (Swedish Food Agency 2022b).

At the point of conducting this study, there are two national targets that relate to food: 1) food waste should be cut in half between 2020 and 2030, and 2) 60% of public food consumption should consist of organic food by 2030 (Swedish Food Agency 2022b). In February 2024 (after finishing the data collection for this study), the Public Health Agency and the Swedish Food Agency (2024) proposed two additional national targets for sustainable and healthy food consumption. By 2035, they propose that, 1) food consumption has contributed to better and more equitable health, and 2) the negative impact of food consumption on climate, biodiversity, and ecosystems has decreased, while the positive impact on biodiversity and ecosystems has increased. Six sub-targets detailing the most important changes at the population level that need to occur by the year 2035 are also proposed: reduced consumption of meat, salt, energy-dense and nutrient-poor foods, and increased consumption of legumes, vegetables, fruit and berries, root vegetables and whole grain products. This work is separate from the government assignment to update the Nordic Nutrition Recommendations 2023 to new Swedish dietary guidelines.

In 2021, the Swedish Food Agency conducted a survey on municipally-run meal programs in preschools, schools and elderly care homes, paying special attention to preparedness for societal disturbances and goals related to sustainability (Swedish Food Agency 2022b). The survey reveals that one in three municipalities have set a target on climate impact of food consumption. It is worth noting that as of writing this, there is no national governance on climate impact of food to guide or motivate local targets. The same

is true for targets on nationally and locally produced foods, which several municipalities have politically adopted targets on. The most prevalent municipal-level targets, however, relate to organic food consumption and food waste, reflecting the national targets in these two areas. According to the Swedish Food Agency (2022b) the proportion of organic purchases has typically been the municipalities' only environmental target linked to meals.

2.2. Crisis preparedness

In recent years, there has been increased attention and efforts to increase the crisis preparedness of public meal operations in Sweden. This development should be seen in the light of the restoration of Sweden's total defence, a whole-of-society approach towards national security, initiated in 2015 in response to the deteriorating security situation (Reg. 2015:1053). As part of the work to build up Sweden's crisis preparedness and civil defence, a government directive on national food security was issued in 2022 (Dir. 2022:33), followed by a proposal for a new law (SOU 2024:8). The directive and law proposal emphasize that the municipalities have a civil defence mission related to food, ensuring that public meal services continue to function during crises or war. Moreover, it states that a functioning Swedish agricultural and food production sector, along with undisturbed supply chains and commodity flows, forms the basis of national food security. In the proposal for a new law on food preparedness in Sweden (SOU 2024:8) it is proposed that municipalities shall have a legal responsibility to make appropriate preparations for the provision and distribution of food in case of a severe food supply disruption.

In 2023-2024, the Swedish Food Agency received project funds from the Swedish Civil Contingencies Agency (MSB) to provide support for municipalities and county councils to develop contingency plans and crisis preparedness for meal operations. As part of this work, a manual on crisis preparedness in public meals was released (Swedish Food Agency 2022a). Other relevant projects in this sphere include "Beredskapsnätverket" run by MATtanken and, at the local level, "Mat härifrån" by the County Administrative Board in Värmland. The latter integrates sustainability and procurement of locally produced foods into the work with crisis preparedness. The increased attention to preparedness in relation to public meals is also reflected in the contingency plans of the municipalities. In 2021, six out of ten municipalities had a contingency plan describing how the municipality's public meals should be handled in the event of a crisis – a significant increase from just three years earlier when four out of ten municipalities had such plans (Swedish Food Agency 2022b).

A 2015 study (Molin & Östensson 2015) on municipal food preparedness by the Swedish Defence Research Agency (FOI), conducted on behalf of the Swedish Food Agency, puts the current risk landscape in context. The results indicate that the issue of preparedness was not high up on the agenda prior to the recent redirection of political priorities. The interviews with municipality officials in the 2015 study point to, amongst other things, widespread confusion and inaction related to preparedness and the responsibility of municipalities. At the time, the vulnerability of food supply chains had generally not been exposed in any recent events or crisis, and since the municipalities had not been assigned a clear mission to handle preparedness related to food, other activities were prioritized.

3. Food system sustainability and resilience

3.1. Shifts needed for sustainable food systems

The ways in which food is produced, distributed, and consumed have major negative impacts on both people and the planet (Gordon et al. 2017; Willett et al. 2019). Globally, food systems account for around a third of greenhouse gas emissions (Crippa et al. 2021), over 70% of freshwater withdrawals (FAO 2021), and 40% of land use (Foley et al. 2005). It is also the principal driver of biodiversity loss (Benton et al. 2021).

A dietary shift towards more plant-based diets, coupled with a substantial reduction of food waste, are two of the major shifts identified in the scientific literature as key to transitioning to sustainable food systems within the planetary boundaries (Springmann et al. 2018; Willett et al. 2019; Benton et al. 2021). The share of animal products in the diet is a key factor determining the footprint of food consumption, mainly due to the disproportionate negative impact of animal agriculture on climate, biodiversity, and land-use (Aleksandrowicz et al. 2016; Sandström et al. 2018; Springmann et al. 2018; Benton et al. 2021). In a study of the footprint of diets across the EU, it was found that dairy, meat, and eggs accounted for 83% of food supply emissions (Sandström et al. 2018). To put this in context, transport of food is estimated to account for only about 4.8-6% of food emissions (Poore & Nemecek 2018; Sandström et al. 2018; Crippa et al. 2021). Work by Moberg et al. (2020) indicated that the typical Swedish diet surpassed the global limits (set by the *EAT-Lancet* report (Willett et al. 2019)) for greenhouse gas emissions, cropland utilization, and nutrient application by two to four times when adjusted to a per capita basis.

Since transport is not responsible for any large share of the carbon footprint of food, what types of food we eat (and specifically how much of it is animal-based or plant-based) generally matters much more in terms of climate emissions than whether it is locally grown or produced far away. However, motives for choosing local food are often connected with environmental and social aspects beyond climate impact, such as supporting local food security and economy, preserving open landscapes, and the belief that local products are healthier and of higher quality (Granvik et al. 2017).

As mentioned, another key shift needed for a green transition of food systems is reductions in food loss and waste, which would reduce food demand and the associated environmental impacts. It has been found that 24% of the emissions of food come from food that is lost in supply chains or wasted by consumers (Poore & Nemecek 2018). This

means that about 6% of *all* greenhouse gas emissions worldwide are caused by food that is never eaten (Ritchie 2020).

Finally, will a conversion to organic food production be a part of a sustainable transformation of food systems? Scientific evidence demonstrates that organic and conventional farming entail distinct advantages and disadvantages. Organic farming leads to benefits for biodiversity as it increases crop and landscape heterogeneity (Reganold & Wachter 2016; Seufert & Ramankutty 2017; Rööös et al. 2018). Another benefit is that it reduces negative impacts related to chemical and pesticide use (Reganold & Wachter 2016; Seufert & Ramankutty 2017) as well as antibiotic use (Mie et al. 2017). At the same time, evidence shows that organic production causes more eutrophication per kg of product than conventional production (Clark & Tilman 2017). The climate impact per production unit tends to be similar under organic management, but with high variability (Reganold & Wachter 2016; Clark & Tilman 2017; Seufert & Ramankutty 2017). Finally, organic agriculture tends to have lower yields and would therefore need expansion of agricultural land to produce the same amount of food as conventional farms, with potentially adverse consequences through deforestation if demand is not managed (Muller et al. 2017; Smith et al. 2019). Worth noting, however, is that yield differences are contextual and under the right conditions – with good management practices, particular crop types and growing conditions – organic systems have been found to nearly match conventional yields (Seufert et al. 2012).

3.2. Food system resilience

Resilience can be understood as a system's capacity to deal with change and continue to develop (Walker et al. 2004; Folke et al. 2010). It is about how people and nature can use unexpected events and crises to spur renewal and innovation. In the context of this study, resilience thinking is useful to understand the vulnerabilities and strengths of the Swedish food system, and specifically the capacity of Swedish municipalities to cope, adapt, or transform in order to uphold a functional meal service for its inhabitants in times of crisis.

If food preparedness is about withstanding shocks in the short term, for example through stockpiling food products or agricultural inputs in case of supply chain disruptions, food resilience instead means the ability to not only withstand disturbances, but also being able to adapt or transform in the face of change (Meuwissen et al. 2019; Mistra Food Futures 2024). Adaptability here signifies the capacity to adapt to disruptions, for example by using other types of supply routes or production methods. Another example of an adaptive response could be a localization of food systems, that is to reduce the geographic distance between where food is produced or processed and where it is consumed (Granvik 2012; Granvik et al. 2017), this to reduce the reliance on upstream suppliers and uncertain supply chains. By strengthening the capacity of local food system actors, municipalities may spread risk and reduce vulnerability, and in this way build resilience through adaptation. Transformation, on the other hand, may be understood as the capacity to fundamentally restructure an organization's operations when disturbances make it impossible to function as before. It is about having the flexibility to rethink and reorganize in a way that makes it possible to continue to procure, cook, and serve food amidst change.

3.3. Risks and disturbances

The risks that can disrupt the food system are many and often co-occurring. Here, we identify four global threats to food security: climate change, conflict, economic or political crisis, and pandemics (Queiroz et al. 2023). These can seem abstract and distant at the local level (e.g. a school kitchen), but may take the shape of urgent disturbances such as supply chain disruptions, rising food prices, or worker shortages. Based on a list of extraordinary events by the Swedish Civil Contingencies Agency (MSB) (2022), we identified nine disturbances of relevance to public meal operations, shown in Table 1. In the survey, respondents were asked which out of these risks (if any) the municipality has identified as a risk for the functioning of school meal operations and which they had a plan for how to handle. Some, but not all, of these disturbances may have their roots in the four broad threats of climate change, conflict, economic or political crisis, and pandemics.

Table 1. Identified societal disruptions of relevance to school meal operations.

Urgent disturbances
Extreme weather and climate event (e.g. flood, storm)
Riot or military conflict in the immediate area
Severe outbreak of infectious disease
Disruption of water supply
Disruption of power supply
Cyber incident
Issue with transport and logistics
Chemical accident or release of hazardous substances
Extensive fire
Extreme weather and climate event (e.g. flood, storm)

4. Method

4.1. Survey

A national survey was distributed in November 2023 with the aim of charting Swedish municipalities' work with the sustainability and resilience of school meals in times of increased pressure on the public meal system, and indeed the food system at large. A questionnaire was created in the survey tool QuestionPro and shared via email. Email addresses of municipal officials with responsibility over 1) school meal organization, 2) food procurement, and 3) emergency preparedness were requested from all 290 municipalities. In this way, individual email addresses of 700 dietary managers, procurement officers, emergency preparedness managers and similarly were collected. For the approximately 30 municipalities that did not reply, the general email addresses to the municipality were used to circulate the survey. The recipients were asked to share the survey with relevant people in their municipality. The survey was open for responses for six weeks in November and December 2023. One reminder was sent out to the list with individual email addresses.

The design of the survey was guided by a non-systematic literature review of previously published scientific and non-scientific literature on public meals as a leverage point for a green transition. The focus of the survey was on how measures to increase the sustainability, preparedness, and the inclusion of locally produced foods in school meals relate to each other. Respondents were asked about the municipality's sustainability targets and priorities for public meals, their preparedness work, and if they had any collaborations with local food actors. The questionnaire can be found in Appendix 1.¹

4.2. Interviews

4.2.1. Semi-structured interviews

Interviews were conducted with 5 municipality officials around the country to gain a more in-depth understanding of how municipalities approach the synergies and tradeoffs between crisis preparedness and sustainability related to public meals. Semi-structured interviews was used as the data collection method since its open-ended nature and

¹ The Swedish original is not included here due to space reasons. Contact the authors if you wish to see it.

flexibility is suitable to provide richness and detail to a topic. See Appendix 2 for the interview guide used for this study.

4.2.2. Selection of participants

Participants to interview were identified from the survey data. In order to capture experiences and conditions from diverse municipalities, the following criteria were used to guide the selection of interview participants:

- Geographic dispersion
- Diversity in municipality types
- Work position of the interviewee
- Ongoing work or interest in the relationship between preparedness, sustainability, and resilience

4.2.3. Data treatment

Informed consent was obtained from all participants included in the interview study. See Appendix 2 for the written information and consent form shared with interview participants prior to the interview. At the start of the interview, all participants were provided oral information about the study and data management and the opportunity to ask questions.

All interviews were carried out in December 2023 and January 2024. They were conducted over Zoom and lasted for 45-60 minutes. The recorded interviews were later transcribed using the transcription tool Whisper, with a server located at Stockholm Resilience Centre. Upon transcription, the recordings were immediately deleted from both the computer and Whisper. Any names of individuals and municipalities were edited out from the transcribed text files.

The transcribed interviews were coded according to inductively identified categories which were later sorted into thematic areas.

4.3. Terms and translations used

The term “local food” is in this report used to describe food that is grown or produced in the nearby area, for example in the county or neighboring counties, i.e. not the same as food grown or produced in Sweden. No common definition of “local food” exists in Sweden (Granvik et al. 2017) and it is expected that research participants assign it different meanings. By continuously referring to the abovementioned definition of local food in interviews and survey questions, misunderstandings are hoped to be minimized.

Note that when survey results are reported, the terms “survey respondents” and “municipality officials” do not correspond to that same number of individual municipalities. In other words, 50% of survey respondents (in total 120) is not exactly the same as 50% of municipalities participating in the survey (in total 115). The reason for this is that in some cases, more than one employee in a municipality responded to the survey,

while in other cases, the respondent is employed to work in several neighboring municipalities at the same time.

In the table below, a list of relevant Swedish-to-English translations used in this report are given.

Table 2. Translations used.

Swedish	English
Beredskapsansvarig	Emergency preparedness manager
Beredskapsplan	Contingency/preparedness plan
Kostchef/måltidschef	Dietary manager
Kostpolicy	Dietary policy
Krisberedskap	Crisis preparedness
Livsmedelsverket	Swedish Food Agency
Länsstyrelse	County Administrative Board
Myndigheten för samhällsskydd och beredskap (MSB)	Swedish Civil Contingencies Agency
Trygg livsmedelsförsörjning/ livsmedelsberedskap	Food security/food preparedness
Upphandlare	Procurement officer

5. Findings

Findings are presented in the following way: first quantitative results from the survey are presented. This is followed by a section on the main findings from the interviews, discussed in the light of survey results and divided into three sections: managing a new crisis and risk landscape; trade-offs between sustainability and preparedness; and synergies between sustainability and preparedness.

5.1. Survey

5.1.1. Respondents

The survey was open from 13-11-2023 to 27-12-2023. It received 120 completed responses from officials working in 115 different municipalities, corresponding to almost 40% of Sweden's municipalities. For about a dozen municipalities, 2 or 3 employees with different functions in the organization responded to the survey. In two cases, the survey respondents reported that they were employed to work with public food procurement in several neighboring municipalities. Municipalities in all 21 Swedish counties except Gotland County (with only one municipality) are present in the sample, demonstrating a wide geographic range (see Figure 2).

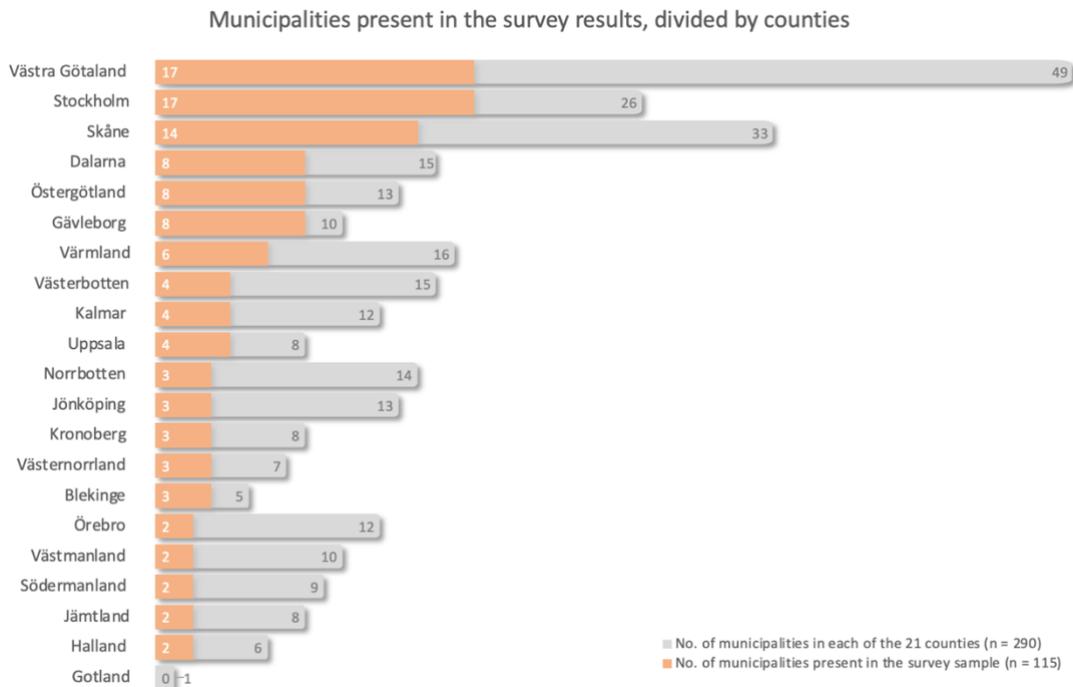


Figure 2. The number of municipalities who responded to the survey, divided into Sweden's 21 counties, is shown in the orange bar, with the gray bar indicating the total number of municipalities for each county. In total, the survey was filled out by 120 people working in 115 of Sweden's 290 municipalities.

Of those who participated in the survey, 64% were dietary managers, 14% emergency preparedness managers, 11% procurement officers, and another 11% were municipality officials with other responsibilities (e.g. environmental strategists). The aim was not to compare groups but rather to analyze the data on an aggregate level.

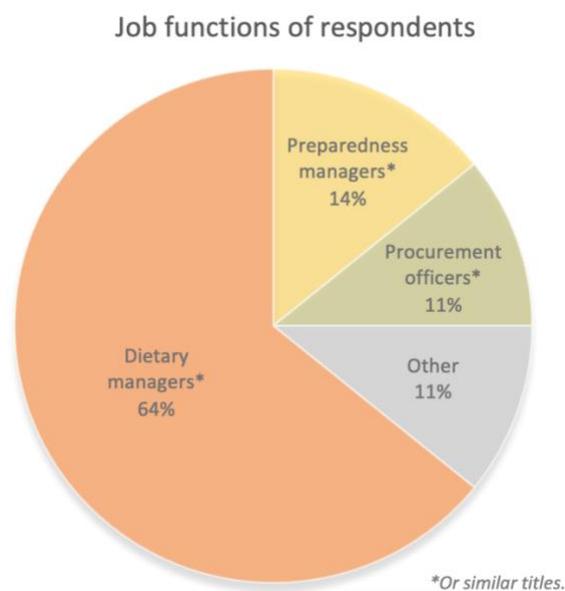


Figure 3. Distribution of job functions among the respondents. Note that work titles and what they imply may differ widely between municipalities. The figure should be interpreted as giving an overview of the survey respondents' main areas of work rather than exact positions.

5.1.2. Targets

The survey results indicate that a vast majority of municipalities have set some sustainability targets for the school meal service. The most common target area is shown to be food waste followed by organic food, as reported by 67% and 65% municipality officials, respectively. At the point of conducting this study, these two areas are also the only ones which have a national-level target. Of the given options, targets on local food and vegetarian food are the least common, with 35% of respondents reporting that their municipalities have set targets in these areas.

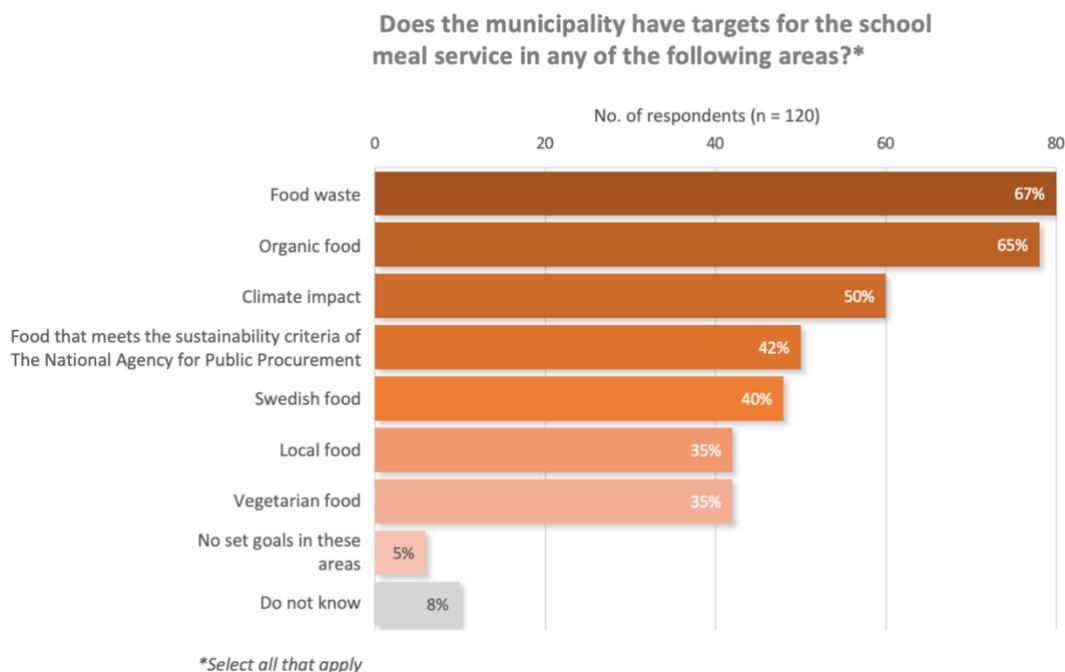


Figure 4. Environmental targets for school meals. The figure shows the number of respondents who report that the municipality they work in have targets in different areas related to the sustainability of school meals. Local food is here (and throughout this report) defined as food that is grown/produced in the immediate area, for example in the county or neighboring counties, i.e. not the same as food grown/produced in Sweden.

One of the survey questions asked if the municipalities' targets for the environmental sustainability (i.e. not including targets for local/Swedish food) of school meals are different now compared to five years ago. Around 44% reported that targets have changed due to higher environmental ambitions, while only around 4% said that targets have changed due to lower environmental ambitions. Around 30% reported that environmental targets had not been revised or revised on other grounds. The last fifth stated that they did not know. The interview results draw attention to the fact that ambitions may change regardless of whether the targets are revised or not, with all interview participants stating that serving organic food has been less prioritized in the last few years.

Follow-up questions in the survey revealed that the most prevalent reason (74-80%) for environmental targets related to school meals becoming both more ambitious and less ambitious is the support, or lack of support, from municipal politicians and officials. The second most prevalent reason for lowered environmental ambitions (as reflected in revised municipal targets) was reported to be increasing food prices, seen by 40% of the officials

who reported that the level of ambition for environmental targets had been lowered in the last five years. Multiple selections were allowed, see Appendix 1 for all response options.

5.1.3. Procurement of local food

The most common motives for procuring local food for school meals was stated to be perceived benefits for the local economy (27 out of 32 respondents), followed by its contribution to food security in the municipality (25 respondents). The perceived smaller climate impact due to shorter transports was reported as a motive for local food procurement by 24 out of the 32 respondents, while animal welfare and environmental reasons was the least popular of the given options.

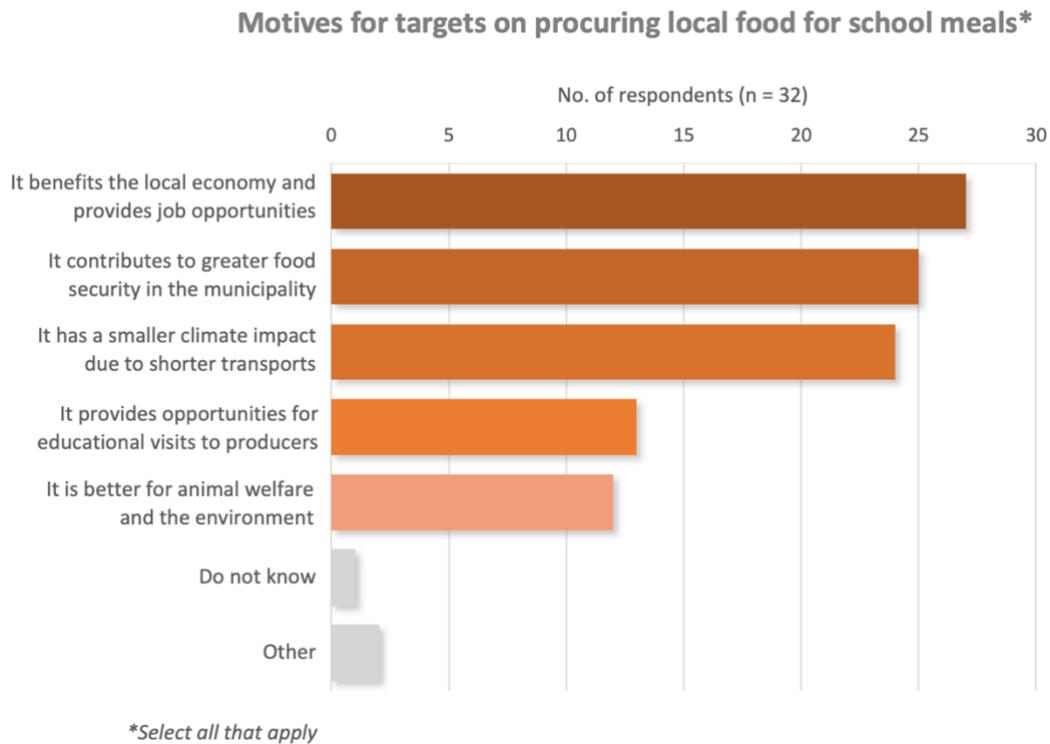


Figure 5. Motives for municipalities to have targets on procurement of local food for school meals (n = 32). Multiple selections possible.

Respondents who marked that their municipality had a target on local food for school meals were also asked whether these looked different now compared to five years ago. A majority (56%) reported that targets on local food had not been revised or that they had been revised for other reasons than those given in the survey question. Still, 38% stated that the targeted proportion of local food had increased due to an increased focus on preparedness and food security, and 9% that it had changed due to the rise in food prices. The final 9% stated that they did not know.

Note that both these follow-up questions were optional and only posed to those who reported that their municipality had targets on local food, hence the respondent group consisted of only 32 people. Respondents were asked to select all options applicable to them.

5.1.4. Preparedness

About a third (32%) of respondents report that the municipality they work in have a contingency plan, risk preparedness plan or similar for how school meal operations should function in the event of a crisis, while only 2% report that they do not. The majority, 64%, of municipality officials report that such a plan is currently being developed.

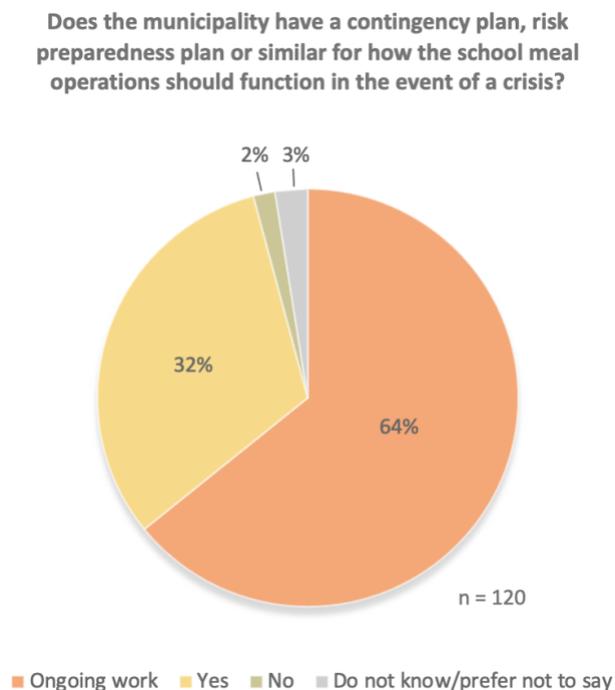


Figure 6. Distribution of municipality officials who report that their municipality has a contingency plan (or similar), those who do not, and those who are in the process of establishing one.

The survey results further indicate that the risks connected to the school meal service (see Table 1 for the full list options provided) that most municipalities have a plan for how to handle include disturbances in the water and electricity supply (53 and 54% of respondents). This is followed by plans to handle issues with transport and deliveries (44% of respondents), extreme weather and climate-related events (32%), and severe outbreak of disease (32%). Other options included risks in relation to cyber incidents (29%), extensive fire (22%), riots or military conflict in the immediate area (11%). The share of respondents who did not know or preferred not to answer was 28%, with many noting that this work was currently under development in the municipality.

5.1.5. Experiences of trade-offs and synergies

Respondents were asked how well different statements reflected the current state of sustainability and/or preparedness work in the municipality they work in. Figure 7 shows how many of the 120 respondents marked each statement on a five-point scale from Strongly Disagree to Strongly Agree. Note that the share of respondents who did not want to respond, or did not know what to respond, was relatively high, between 12-20%. The statements with the highest share of agreement were that the municipality's work with food-related preparedness contributes to long-term sustainable development (53% agree or

strongly agree) and that the increase in food prices means that the municipality must reprioritize the environmental sustainability work for school meals (49% agree or strongly agree). The statements with the highest share of disagreement, on the other hand, were that the increased focus on preparedness means that the municipality must reprioritize the environmental sustainability work for school meals (28% disagree or strongly disagree) and that environmental sustainability is a central part of the municipality's preparedness work for school meal operations (17% disagree or strongly disagree).

Based on your assessment, how true are the following statements for the situation in your municipality:

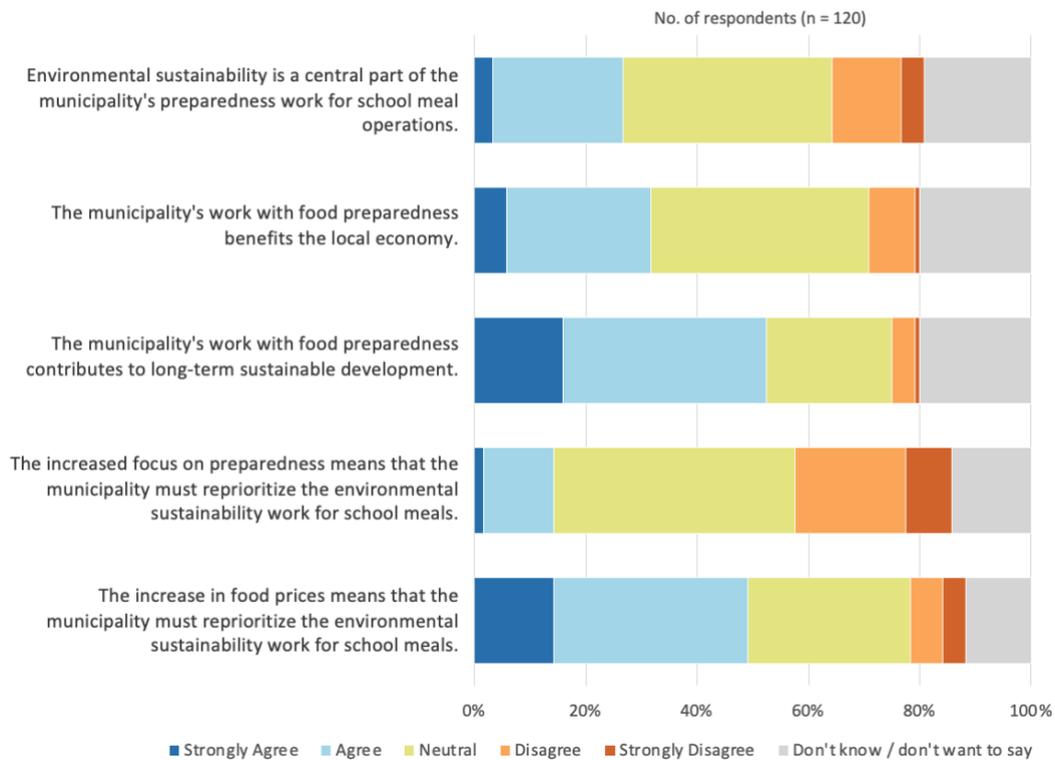


Figure 7. Level of agreement with five statements concerning the situation for sustainability and preparedness work in the respondent's municipality.

As presented in Figure 8, survey respondents were also asked to assess the level of priority of different measures and targets in connection to the environmental sustainability and preparedness of school meals. The area that was assigned the highest overall priority was to increase the public meal service's preparedness for unexpected and short-term crises, which 75% of respondents assigned a 4 or a 5 on a scale from 1 ("very low priority") to 5 ("very high priority"). The second most prioritized area of those given in Figure 8 was to ensure that the school meal service contributes to better public health and good eating habits, which 67% of respondents assigned a 4 or a 5 on the five-point scale. The least prioritized area of the options given was to increase the share of organic food in school meals, followed by reducing the amount of meat in school meals.

What priority do you assess that the following measures have in your municipality?

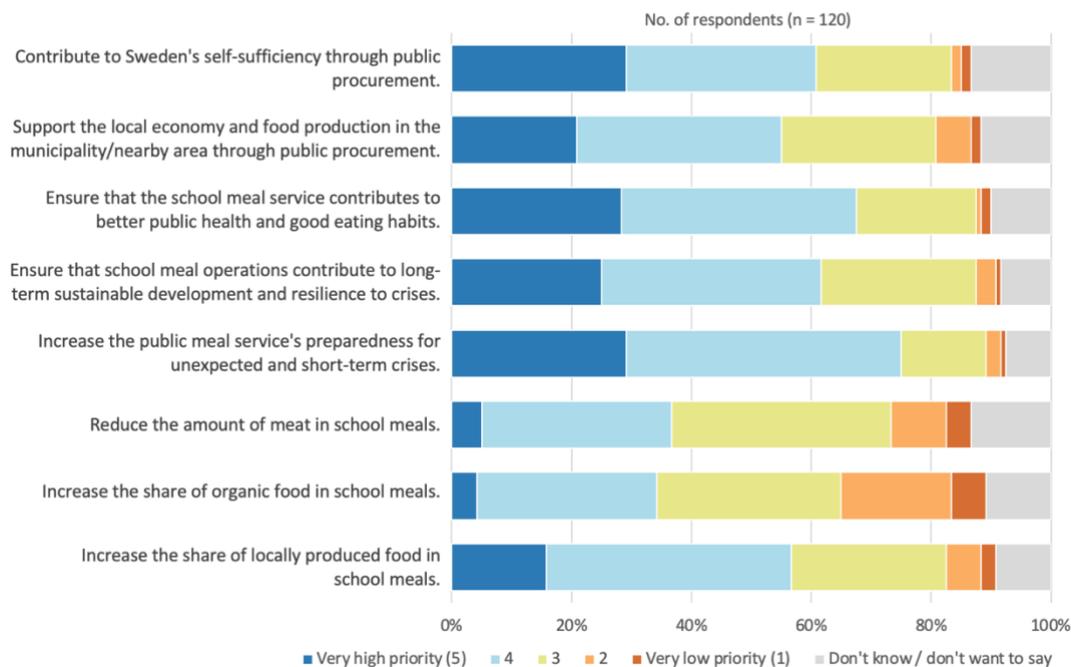


Figure 8. Level of priority of various measures.

5.2. Interviews

5.2.1. Participants

In total, 36% of survey respondents reported interest in taking part in a follow-up interview of 45-60 minutes, indicating a high level of interest in the topic of school meals, preparedness, and sustainability. Five municipality officials were contacted via email with an interview request, along with a description of the study and the research program.

Table 1. Characteristics of interview participants.

Type of municipality ²	Job function	Participant #
Rural municipality	Dietary manager	P1
Medium-sized town	Dietary manager and project manager of a regional food node	P2
Commuting municipality near large city	Dietary manager	P3
Commuting municipality near small town	Dietary manager	P4
Procurement center for eight municipalities	Procurement officer	P5

² Following the classification of Swedish municipalities produced by the Swedish Association of Local Authorities and Regions (2023).

5.2.2. Managing a new crisis and risk landscape

Factors orienting preparedness priorities

Preparedness is high up on the agenda in the meal service organizations around the country. This is shown by the survey results where 75% of respondents reported that it is of high or very high priority to increase the public meal service's preparedness for unexpected and short-term crises, and 62% that it is of high or very high priority to ensure that school meal operations contribute to long-term sustainable development and crisis resilience. The officials interviewed for this study mainly represent municipalities that have come relatively far in their preparedness planning, since one of the interview selection criteria was to have expressed in the survey ongoing work or interest in the relationship between preparedness, sustainability, and resilience. The participating municipalities are at different stages in their preparedness planning and all express that this work will take a long time and develop substantially in the years to come. Measures that do not require much extra capacity or organization, such as crisis folders with phone numbers and crisis menus, seem to be in place in all municipalities interviewed. Some of the participating municipalities have food reserves and a more overarching contingency plan while others are yet to organize this. One of the participating municipalities works with a long-term food planning strategy that connects the municipal operational activities, strategic support for local businesses, the use of agricultural land, and crisis preparedness. A barrier for moving forward in the preparedness work mentioned by two dietary managers is the lack of clarity around what preparedness of public meals should entail and which group the municipality is responsible for serving in the event of a crisis.

There is a decision that there should be a [preparedness] plan but when you look at the conditions it is like this: “make a crisis preparedness plan”. Okay, for what? For whom and how many? For how long? When? So, I've had a million questions back to the politicians and to our management that has taken a while for them to spit out, but I got it last week so now I at least know what to build towards. (Dietary manager, Participant 3)

When asked about what has led the municipalities to start working on preparedness (sometimes in relation to procuring more local food) all referred to the “state of the world” - exemplified by a war in the nearby area, climate change, and fear of terrorism – along with the recent government call for national food security and the restoration of Sweden’s total defense. The COVID-19 pandemic also put the vulnerability of supply chains on the agenda, with experiences of non-delivery and shortages of certain goods. All four broad threats for food security identified in Section 3.3. were thus brought up in the interviews as factors that (could) impact the municipalities’ work. Previous experiences of other forms of more local crises were also mentioned in several interviews as instigating planning on the municipality’s meal preparedness; forest fires, floods, and severe traffic disruptions. In a few cases such events tested the municipality’s crisis management and cooperation with neighboring municipalities, or resulted in (new) routines for managing crises. Increased flexibility and adaptability in the kitchens and the meal service organization is mentioned as another result of recent years’ events, and the pandemic in particular. Across the interviews, it is clear that preparedness work has rarely been on the agenda until a few years ago.

We are building a war organization and we are working very hard to develop our crisis management and war management. It's quite an extensive job. It's not something you do in just one year. Before this assignment came, we had no direct preparedness. Especially not when it comes as part of the total defence. We have really been spared from crises – we haven't experienced any serious ones. (Dietary manager, Participant 2)

Corona meant a logistical disruption throughout the world. This has made everyone put their own house in order a lot more. We have seen shortages of certain foods at certain times. Then it turned out that big players buy up everything to make sure they have it. I think the logistics took a serious hit. (Dietary manager, Participant 4)

The interviews make it clear that food production possibilities and geographic conditions impact how municipalities prioritize issues on preparedness and local food procurement. For example, one municipality notes in the interview that consisting of a collection of dozens of islands without any food production makes them vulnerable to traffic disruptions – but also opens up for shipping food and other forms of help by sea. Therefore, having food reserves is a key preparedness priority, along with increasing the capacity of the harbor and transportation by sea. In a rural municipality interviewed, the strong political support for procuring local (conventionally farmed) food is thought to be rooted in the area's strong agricultural sector and the fact that many of the politicians are part-time farmers.

Finally, in several of the interviews it is mentioned that small municipalities with limited resources, without political support and/or capacity in terms of a designated preparedness manager or procurement unit are likely to fall behind in this work.

Short-term solutions

When asked about ongoing preparedness work and next steps, measures such as backup power and water solutions, crisis menus, and managing in case of staff shortages seem to be high up on the agenda. These are mainly examples of direct preparedness measures that are set in place to manage immediate crises, such as supply chain disruptions, power and water outages. Similar priorities are reflected in the survey findings, where these three risks were the most common to have a crisis management plan for (44-54% of respondents). Such measures can also be seen as attempts to manage the effects of the four global threats to food security identified in Section 3.3: climate change, conflict, economic or political crisis, and pandemics. No additional risks beyond those identified in Section 3.3. were discussed in the interviews. In terms of larger investments in preparedness, building new preparedness kitchens and safer storage and distribution solutions are mentioned as current or next steps. A few municipalities are still in an early phase of preparedness planning where the key priority is to gain clarity on the municipality's civil defense mission concerning food and to set up working groups and an organization or leadership for crisis management.

Long-term strategies

Examples of long-term strategies in which the preparedness and sustainability of meal operations are incorporated in what we may call a resilience approach are also discussed in the interviews. In several interviews, issues of how the municipality's agricultural land is

being used are highlighted. Generally, this is not integrated into strategies for preparedness and local food sufficiency, thus pointed out as a barrier for moving from food preparedness to food resilience. In one interview, the participant comments that large areas of farmland lays fallow because there are not enough incentives to farm it, while another participant in a different part of the country sees agricultural land being turned into housing. One of the interviewed municipalities has a comprehensive plan for land management, resilience and preparedness, and food production and provision, including public meals. In this case, the municipality is also reviewing public land leases and examining opportunities to increase food production and employ more people currently outside the labor market in the food sector.

It is suggested in several interviews that the demands on crisis preparedness and resilience have, or will, give way to new ways of procuring and writing contracts, primarily to allow for more long-termism and stronger support for regional food production. For instance, one procurement officer shares that they are looking into the possibility of establishing longer contracts with farmers than the maximum four-year procurement deals under the Swedish Public Procurement Act allows for. By signing farmers for, say, 10 years, the farmers would then be given greater stability and opportunity to invest in scaling up or transitioning to more sustainable methods. It is still not clear if this will be legally possible, but it shows how dietary managers and procurement officers feel a need for a more long-term approach. In another interview, the limit of four-year long procurement deals under the Procurement Act is also mentioned as a critical barrier because it does not give enough safety and continuity for producers, which also makes it more difficult for the municipality to push suppliers in a more long-term sustainable direction. Moreover, two of the interviewed officials report that they in the next procurement round are seeking to remove force majeure or include a contingency clause in some of their contracts in order to ensure that deliveries will arrive even in the event of a crisis.

Localization of food systems

Importantly, the interviews point to a strong focus on local food systems and working actively to support and develop these through public food procurement. In three of the interviews, reducing dependency on the big wholesalers on the Swedish market in favor of increased local food procurement is brought up as a way to decrease vulnerability. Wholesaler dominance is reported to be potentially negative for resilience because they only have a few storage spaces in the country, meaning that the food may be transported large distances, and that wholesaler giants, by expanding their own product lines and “only focusing on their own profit”, make it more difficult for small producers to survive. Moreover, several of the interviewees express that they do not trust that these wholesalers would continue to sell them food if a severe global crisis would occur.

If we take [Swedish wholesaler] as an example, they are owned by the world's largest food wholesaler – we are a tiny speck in their business. And it's no wonder then that they will prioritize other actors if the worst possible happens, some global crisis like a world war. There will be military forces and others around that will need supplies and we will quickly become de-prioritized. (Procurement officer, Participant 5)

Trust and traceability are, on the other hand, mentioned as benefits of procuring from local producers or smaller wholesalers with a local focus. This is also mentioned as a learning outcome of the COVID-19-pandemic, where local companies were quick to step in and help elderly care homes and hospitals nearby. Increased local food procurement may be seen as a deliberate long-term strategy to build preparedness and resilience, especially when combined with dialogue and capacity-building efforts. By setting demands and keeping an active dialogue with local suppliers, municipalities may increase the resilience, sustainability, and preparedness of food producers in the region. This is particularly visible in one of the interviewed municipalities where strategic and operational support is provided to local food companies with a focus on sustainability. In this case, public kitchens are used as a form of testbed for new sustainable food products.

5.2.3. Trade-offs

All interviewed participants express that there is no trade-off between increasing the sustainability and the preparedness of the school meal organization, although some comment that this might be a risk going forward. At the same time, four out of five interviews state there is, or will be in the next budget, some sort of shift away from organic food in public meals, while the share of local producers remains the same or is increased. The survey results further show that the least prioritized area of the options given was to increase the share of organic food in school meals, followed by reducing the amount of meat in school meals. Although the decreasing focus on organic food is mainly due to increasing food costs and strained budgets, we find it important to note that it can also be seen as a trade-off between increasing food preparedness and increasing the sustainability and resilience of public meals, and food systems at large. A key characteristic of organic farms is that they are not dependent on imported agricultural inputs such as synthetic fertilizers and pesticides (although they indirectly to a certain extent rely on synthetic fertilizers through the use of manure from conventional farms). Moreover, as discussed in section 3.1, organic farms tend to demonstrate a higher degree of biodiversity due to limited pesticide application and more diverse production landscapes. These aspects can make organic farms less vulnerable in the event of restricted availability of inputs such as fertilizer and pesticides. Important to note, however, is that these characteristics are not exclusive for farms certified as organic and that a general shift to less input intensive and more crop and landscape diverse farms could enhance food production resilience across the board.

Other than this, we found no evidence that the increased focus on crisis management and preparedness has led to any sustainability tradeoffs.

5.2.4. Synergies

In two interviews it is confidently proclaimed that good sustainability work and good preparedness work go hand in hand, and that the point of sustainability is to build a more resilient society. Interview participants working in municipalities where the preparedness work has come relatively far and supporting local food systems is a key priority, argue strongly for procurement from local producers as an integral part of the preparedness

planning of public meals. One interviewee states that the closer they have their producers, the longer they will be able to serve food for vulnerable citizens in the event of a crisis.

Just saying that now we will prioritize preparedness over sustainability, and put those two against each other – that feels very strange. It is through sustainability you build a robust society. That is the whole idea of sustainability. (Dietary manager, Participant 2)

In this way, some municipalities exploit synergies by arguing for measures that may be positive for both regional food security, the environment, regional development, and the quality of meals. Indeed, several municipalities find that recent crises (particularly the COVID-19-pandemic and Russia's invasion of Ukraine) and the rebuilding of Sweden's total defense have made political proposals to invest in strengthening local food systems more accepted. Even though the economy is very strained, several interviewees express that the need for better preparedness and civil defense is a strong argument for receiving more funds to build up short-term crisis preparedness and long-term resilience – which in some of the municipalities is closely linked with advancing the work with local and sustainable food actors. Measures that previously might have been politically infeasible, such as investing in “preparedness infrastructure” or increasing public food costs to procure more from local and diverse food suppliers, have gained more acceptance in some municipalities.

If we are to increase our local purchases, it will become much more expensive. (...) You should use as an argument that, yes, it will cost more because we need to build up our preparedness and you must accept this because we need to ensure that we still have a certain level of food self-sufficiency in order to build redundancy. We can't put all our eggs in one basket as we are doing now, and continue to be so heavily dependent on a wholesaler who in turn has their warehouses 100-200 kilometers away. (Dietary manager, Participant 2)

Worth noting is that reducing organic food is not seen as a way of de-prioritizing sustainability. A reason for this not being experienced as a tradeoff between sustainability and preparedness may be that the share of organic food is not primarily reduced to accommodate crisis management and organization, but rather the economic inflation (which, in turn, is strongly linked to Russia's invasion of Ukraine). However, several of the interviews indicate that local food is seen as the most sustainable option, due to shorter transports and the good production standards in Sweden compared to other countries. It is in any case often expressed to be the overall better option in the current situation, with high food costs and security threats, by also being positive for other goals such as regional development and preparedness. This shows how environmental sustainability, in the context of preparedness and otherwise, can mean different things for different people. Indeed, as outlined in section 3.1, research shows that locally produced food is not necessarily more sustainable, especially regarding the climate impact.

Still, we find indications in the interviews that by engaging in dialogue and different forms of support for local producers, municipalities step in and shape the production landscape, potentially in a more sustainable direction. For instance, one municipality with a strong profile on local and organic food, states that the municipality's approach has somewhat changed to become more inclusive of also conventional local farmers as preparedness perspectives and holding onto local production, organic or not, have gained

traction. The importance of having a dialogue with these producers and working to influence them in a more sustainable direction is then strongly emphasized. We also note that other perceived benefits of procuring from local producers, such as educational visits and knowledge sharing, may also bring along sustainability advantages. It is expressed in the interviews that dependency on the big wholesalers does not leave much opportunity to influence food production in a positive direction, whereas the relationship with nearby food actors enables insight into and influence over the food production. In several interviews, the officials share that they have mapped out all relevant food producers in their area and some have even decided to remove everything that can be procured locally from the wholesaler agreement. Several interviewees lament that too little food is produced in the region – if more local producers appeared, they would want to buy from them. Moreover, the interviews provide several examples from different regions where the close dialogue between municipality and local producers has led to increased production and consumption of new and more sustainable and diverse crops and foods, such as “oat rice” instead of white rice. Other more innovative ways of reducing dependency on wholesalers, such as through public subscriptions on meat or municipalities owning their own cattle are also mentioned. Results from the interviews indicate that the interest for solutions such as these, where municipalities step in to shape the production landscape and conditions for local farmers, have increased in recent years. Indeed, most interviews touch upon the responsibility as a public actor to deliberately use the tax money that goes to public meals in a way that considers the environmental, climate, and health aspects of food. Some participants also comment that they, through local procurement, strive to act as a catalyst for local producers and sustainable growth in the region.

The potential synergy of using economic inflation as a way to push for a green protein shift was not explored as an opportunity in any of the interviews. Two interviewees mentioned the lack of acceptance for sustainable foods and reduced meat consumption as a barrier for scaling up the sustainability work.

We could scale up much more, but we have to hold back. We've said that, “let’s remove that damn chicken”, to put it plainly, because in so many ways it's not at all in line with our food and meal policy. But there would be an uproar. You have to serve chicken sometimes. (...) Otherwise, they'll riot out there. (Dietary manager, Participant 2)

Two municipalities express that their way of taking a joint approach on environmental sustainability and preparedness is to continuously use and rotate stockpiled food in order to avoid food waste. Unless this reduces the total amount of food waste, we find this to be a strategy for safeguarding an environmental sustainability principle while doing preparedness work rather than a strategy for a green transition.

6. Conclusion

Using the case of Swedish school meals, this study has explored opportunities and barriers for environmental sustainability and food preparedness to be treated as interconnected areas, reinforcing each other. In a national survey and five semi-structured interviews with municipality officials, we have looked at how recent crises and calls for preparedness affect the municipalities' work with sustainable school meals and what short-term solutions and long-term strategies may emerge as a result.

We find that the present moment represents a unique window of opportunity for deliberately exploiting synergies between increased preparedness, resilience, and sustainability of food systems. With 64% of survey respondents reporting that they are in the midst of making plans for how the school meal operations should function in the event of a crisis, much of the work still lies ahead. Survey results and interviews with municipality officials show that preparedness work has quickly become a highly prioritized area of work and it is likely to continue to influence the priorities of public meal operations for the foreseeable future. This may be compared with the 2015 study performed on behalf of the Swedish Food Agency to investigate conditions for food preparedness at the municipal level (Molin & Östensson 2015), the results of which present a reality in which preparedness was generally not prioritized or even considered. Almost ten years later, when this study was carried out, conditions and measures for crisis preparedness with regards to food have clearly undergone substantial change. Municipalities now have other demands and incentives to invest in building preparedness, not least a civil defense mission concerning food.

The results presented in this report show that it is generally agreed among municipality officials that the increased focus on preparedness has not (as of yet) led to any de-prioritization of environmental sustainability work for school meals. At the same time, we observe a trend away from organic food in school meals – which is likely to be largely caused by the recent increase in food prices. We find it important to note that scientific evidence shows certain positive environmental effects of organic food (see section 3.1) while the environmental advantages of local food are less clear and more context dependent. Often cited benefits of local food include that it supports local economies, improves domestic food security in the event of external crises, and allows for increased insight into and potential to impact production. Indeed, certified organic production is not a silver bullet and conventional farms adopting practices that enhance sustainability and resilience, for example by reducing dependency on imported agricultural inputs, can be an important step in the right direction. Moreover, most municipalities are not prioritizing reducing the amount of red meat in the diet. Survey results showed that reducing the amount of meat in school meals was the least prioritized area together with increasing the proportion of organic food. This is notable as reducing the intake of animal sourced foods

is the most effective way to reduce climate impacts from food consumption (Springmann et al. 2018).

At the same time, the survey and interviews point to a clear trend towards a localization of food for school meals, which has the potential to – under the right circumstances – bring along sustainability advantages. Our results indicate that despite strained budgets, it is perceived as critical in the municipalities to hold onto and develop the collaboration with local producers in times of increased focus on crisis and crisis preparedness. In a new risk landscape, having diverse food suppliers in the nearby area is valued more now than before.

Over 60% of survey respondents report that they deem it to be of high or very high priority in their municipality to ensure that school meal operations contribute to long-term sustainable development and crisis resilience. From the interviews we see examples of efforts to interweave sustainability with increased preparedness in the context of public meals. Short-term coping measures such as crisis menus and backups for power and water, are in some cases complemented with long-term adaptive and transformative strategies that build food system resilience. Examples of the latter include efforts to establish more long-term contracts and procurement strategies that reduce dependency on the market-dominating wholesalers and imported goods. Moreover, by sharing risk with producers and working actively for improved sustainability through dialogue and capability-building, municipalities are in some cases deliberately shaping the local production landscape to benefit rural communities, the environment, and food resilience.

From a resilience perspective, this study of school meal operations has found some evidence of all three components of resilience: coping, adaptation, and – although less prevalent – transformation. In Figure 9, examples of strategies that are employed at the municipality-level are given. Crucially, resilience doesn't emerge as the result of one of these components alone, but rather from a combination of the capacity to cope, adapt, and transform in the face of change (Béné et al. 2012).

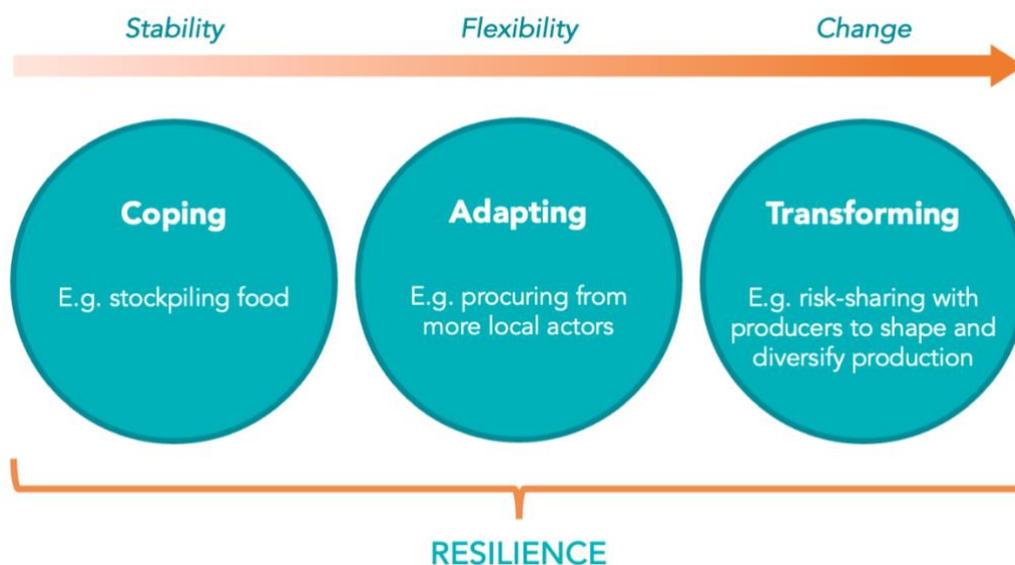


Figure 9. Resilience is a combination of three interlinked capacities: to cope, adapt, and transform. We have found evidence of all three (see examples in the figure), although the weight is on activities to cope rather than adapt or transform. Adapted from Béné et al. 2012.

Finally, we note that municipalities around the country are at very different stages in their preparedness planning and that environmental ambitions vary considerably. While there are examples of municipalities working to procure from, and actively shape, food production systems that build food resilience and sustainability – these tend to be small-scale and without much potential to transform the Swedish food system at large. This calls for a clear national strategy that treats preparedness and a sustainability transition of food systems as interconnected policy areas, leveraging synergies and tackling trade-offs between them. Public meal operations, in particular, could play a key part in supporting and developing resilient food production systems that simultaneously reduce the negative impact of the food system on climate and the environment.

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Appendix 1. Survey questionnaire in English

Do you work with public meal operations, food procurement, or crisis preparedness?

Researchers at the Royal Swedish Academy of Sciences and the Stockholm Resilience Centre invite you to participate in a national survey on how school meals can drive change towards environmentally sustainable food production and consumption, while also contributing to Swedish food security and ensuring a secure food supply even during societal and environmental crises. Your responses are important to gain an understanding of how municipalities are addressing these issues and what support is needed to further develop this work.

The survey consists of 15 multiple-choice questions and is estimated to take 10 minutes to complete. The questions concern the municipality's work and priorities regarding preparedness and environmental sustainability, with a focus on school meals.

Feel free to pass the survey along to colleagues with expertise in the field.

About the study

The study is conducted within the research program Mistra Food Futures, a science-based platform developing strategies for transitioning to a sustainable food system that delivers healthy food. The results of the survey will be presented in a report from Mistra Food Futures during in spring 2024 and a scientific publication later on. Based on the survey responses, a few municipalities will be followed up with interviews to deepen the understanding of opportunities and barriers for sustainability and food preparedness to go hand in hand, based on the municipalities' work with school meals.

Social relevance

The food system is currently facing several interconnected crises. Recent events such as Russia's invasion of Ukraine, the COVID-19 pandemic, as well as droughts, floods, and wildfires in various parts of the world, have raised questions about how food supply can be secured in a time of increased vulnerability. The government has decided to invest in crisis preparedness and food security in Sweden and identified municipalities as a central actor in this work. Against the backdrop of recent efforts to increase Swedish municipalities' preparedness, this study examines how sustainable development and resilience are managed in this work – is environmental sustainability seen as a tool, a threat, or simply not relevant to preparedness efforts?

Confidentiality and data management

Survey responses are collected through the QuestionPro survey software. Only the project team at the Royal Swedish Academy of Sciences has access to the information you provide. Reporting of results will only be done at the group level, and no individual or municipality will be identifiable. All data collected is handled in accordance with the EU's General Data Protection Regulation. Data will be handled in accordance with the Swedish archives law and deleted within 10 years. The research is conducted at the Royal Swedish Academy of Sciences, an independent organization, and is funded by the Foundation for Strategic Environmental Research (Mistra). By completing the survey, you consent to participate in the study. You can quit the survey at any time, and you have the right to withdraw your consent without providing any reasons.

If you have any questions or would like further information, please contact:

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I agree to participate in this research study

* In which municipality/municipalities do you work?

* What is your job function in the municipality?

- Dietary manager or similar
- Preparedness manager or similar
- Procurement officer or similar
- Other

* Does the municipality have targets for the school meal service in any of the following areas:

** With local food we mean food that is grown or produced in the nearby area, for example in the county or neighboring counties, i.e. not the same as food grown or produced in Sweden.*

- Organic food
- Local food*
- Swedish food
- Food waste
- Climate impact
- Vegetarian food
- Food that meets the sustainability criteria of The National Agency for Public Procurement
- No set goals in these areas
- Do not know

* If the municipality has targets on local food*, what are the main reasons for this based on your assessment of the municipality's work?

** With local food we mean food that is grown or produced in the nearby area, for example in the county or neighboring counties, i.e. not the same as food grown or produced in Sweden.*

- It benefits the local economy in the municipality and provides job opportunities
- It contributes to greater food security in the municipality
- It has a smaller climate impact due to shorter transports
- It is better for animal welfare and the environment
- It provides opportunities for educational visits to producers
- Do not know
- Other

* Does the municipality's target(s) related to local food look different now compared to 5 years ago?

** With local food we mean food that is grown or produced in the nearby area, for example in the county or neighboring counties, i.e. not the same as food grown or produced in Sweden.*

- Yes, due to the increase in food costs
- Yes, due to the increased focus on preparedness and local food security
- No, no revision of targets regarding local food has been made due to the above-mentioned reasons
- Targets regarding local food have been revised, but due to other reasons
- Do not know

How have targets regarding local food changed?

* Does the municipality's target(s) regarding the environmental sustainability* of school meals look different now compared to five years ago?

**We are here referring to targets such as reducing climate impact and food waste, increasing the share of organic and vegetarian food or other aspects of environmental sustainability – not targets related to local/Swedish food.*

- Yes, due to higher environmental ambitions
- Yes, due to lower environmental ambitions
- No, no revision of sustainability targets has been made due to the above-mentioned reasons
- Sustainability targets have been revised, but due to other reasons
- Do not know

How have targets regarding environmental sustainability changed?

* Why do the municipality's targets regarding the environmental sustainability* of school meals look different now compared to five years ago?

**We are here referring to targets such as reducing climate impact and food waste, increasing the share of organic and vegetarian food or other aspects of environmental sustainability – not targets related to local/Swedish food.*

- The environmental ambitions have been lowered due to rising food prices
- The environmental ambitions have been lowered due to decreased interest in organic food
- The environmental ambitions have been lowered due to insufficient support from students and parents
- The environmental ambitions have been lowered due to insufficient support from politicians and officials
- Other reason
- Do not know

Why have the targets changed?

***Why do the municipality's targets regarding the environmental sustainability* of school meals look different now compared to five years ago?**

**We are here referring to targets such as reducing climate impact and food waste, increasing the share of organic and vegetarian food or other aspects of environmental sustainability – not targets related to local/Swedish food.*

- The environmental ambitions have been raised due to increased interest in organic food
- The environmental ambitions have been raised due to increased support from students and parents
- The environmental ambitions have been raised due to increased support from politicians and officials
- Other reason
- Do not know

Why have the targets changed?

***Does the municipality have a contingency plan, risk preparedness plan or similar for how the school meal operations should function in the event of a crisis?**

- Yes
- No
- Ongoing work
- Do not know/prefer not to say

* Which risks/disruptions/threats related to the school meal service has the municipality identified, for example in the municipality's risk and vulnerability analysis or contingency plan (if such exists)?

- Extreme weather and climate event (e.g. flood, storm)
- Riot or military conflict in the immediate area
- Severe outbreak of infectious disease
- Disruption of water supply
- Disruption of power supply
- Cyber incident
- Issue with transport and logistics
- Chemical accident or release of hazardous substances
- Extensive fire
- None of the above
- Do not know/prefer not to say
- Other

Has the municipality identified any other risks/disruptions/threats related to the school meal service?

* Which risks/disruptions/threats related to the school meal service does the municipality have a plan to manage?

- Extreme weather and climate event (e.g. flood, storm)
- Riot or military conflict in the immediate area
- Severe outbreak of infectious disease
- Disruption of water supply
- Disruption of power supply
- Cyber incident
- Issue with transport and logistics
- Chemical accident or release of hazardous substances
- Extensive fire
- None of the above
- Do not know/prefer not to say
- Other

Which other risks/disruptions/threats related to the school meal service does the municipality have a plan to manage?

* What priority do you assess that the following measures have in your municipality?

	1. Very low priority	2.	3.	4.	5. Very high priority	Do not know / prefer not to say
Increase the share of locally produced food in school meals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase the share of organic food in school meals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reduce the amount of meat in school meals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase the public meal service's preparedness for unexpected and short-term crises.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ensure that school meal operations contribute to long-term sustainable development and resilience to crises.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ensure that the school meal service contributes to better public health and good eating habits.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Support the local economy and food production in the municipality/nearby area through public procurement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contribute to Sweden's self-sufficiency through public procurement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*** Does the municipality have any cooperation or agreement with food actors in the local area as part of the work with preparedness?***

- Yes, with local producers
- Yes, with local stores
- Yes, with local wholesalers
- Other type of cooperation or agreement of relevance to preparedness
- No
- Do not know / prefer not to say

What type of cooperation or agreement?

* Does the municipality have any cooperation or agreement with food actors in the local area as part of the work with **environmental sustainability**?*

- Yes, with local producers
- Yes, with local stores
- Yes, with local wholesalers
- Other type of cooperation or agreement of relevance to preparedness
- No
- Do not know / prefer not to say

What type of cooperation or agreement?

* Based on your assessment, how true are the following statements for the situation in your municipality:

	1. Very untrue	2.	3.	4.	5. Very true	Do not know / prefer not to say
The increase in food prices means that the municipality must reprioritize the environmental sustainability work for school meals.	<input type="radio"/>					
The increased focus on preparedness work means that the municipality must reprioritize the environmental sustainability work for school meals.	<input type="radio"/>					
The municipality's work with food preparedness contributes to long-term sustainable development.	<input type="radio"/>					
The municipality's work with food preparedness benefits the local economy.	<input type="radio"/>					
Environmental sustainability is a central part of the municipality's preparedness work for school meal operations.	<input type="radio"/>					

* Would you be willing to participate in a follow-up interview of approximately 30 minutes regarding the relationship between school meals, sustainability, and preparedness? Reporting of results can be done completely anonymously if desired.

Yes/maybe, contact me with more information

No

Please provide your email address:

Appendix 2. Interview guide

INTERVJUGUIDE

Innan inspelning

- Funkar ljud och bild
- Om studien och forskningsprogrammet
- Om datahantering, sekretess och samtycke
- Frågor?

Roll och ansvarsområden

- Kan du berätta lite om din arbetsplats och ansvarsområden?
- Vad har du för ansvarsområden?
 - *Och vad innebär det, kan du förklara lite mer vad du gör?*
 - *Hur ser ditt ansvar ut när det gäller beredskapsfrågor?*
- Hur länge har du jobbat med de här frågorna?

Mål/policys om hållbarhet

- Vad har kommunen för mål eller policys för hållbara skolmåltider?
 - *Fanns det någon särskild anledning eller händelse som gjorde att de här målen sattes/policyn antogs?*
 - *Var det någon särskild person eller grupp som var särskilt drivande, eller exempelvis en annan kommun som inspirerade?*
- Under åren som du har jobbat med de här frågorna, hur har prioriteringar och synen på hållbara skolmåltider generellt förändrats?

Beredskap

- Arbetar ni med beredskap i förhållande till skolmåltider på något sätt? Hur då?
- Vad vet du om livsmedelsberedskapen i kommunen generellt?
- Finns det några mål eller policys i kommunen på området livsmedelsberedskap eller måltidsverksamhetens krisberedskap?
- Vad är nästa steg i beredskapsplaneringen för skolmåltider?

Lokala livsmedelssystem

- Hur ser kommunen på upphandling av lokalproducerad mat för de offentliga måltiderna?
 - *Kan du berätta mer om vilka motiv/anledningar kommunen har för den inriktningen?*
 - *Stärker upphandlingen av lokal mat kommunens motståndskraft mot kriser?*
 - ⇒ *Finns det exempel på det redan nu? Eller är det mer "i fall att"?*
- Finns det några planer eller önskemål om att samarbeta mer med andra livsmedelsaktörer i närområdet?
 - *Handlare, grossister eller andra typer av producenter?*
- Kan du berätta lite om hur ni jobbar för att stötta lokala livsmedelsproducenter och företag?
 - *Transport och logistik?*
- Hänger beredskapsarbetet och insatser för att främja och utveckla lokala livsmedelssystem i kommunen samman på något (annat) sätt?

INTERVIEW GUIDE

Before recording

- Sound and video check
- About the study and the research program
- About data management, privacy, and consent
- Questions?

Role and responsibilities

- Could you tell me about your workplace and what your responsibility is?
- What are your areas of responsibility?
 - *And what does that entail, more in detail?*
 - *Do you have any tasks related to preparedness?*
- For how long have you worked with these issues?

Sustainability targets/policies

- Can you tell me about the municipality's targets or policies for sustainable school meals?
 - *Was there any specific reason or event that led to the establishment of these goals/policy?*
 - *Was there any particular individual or group that was particularly influential, or perhaps another municipality that served as inspiration?*
- Over the years you've worked on these issues, how have priorities and perspectives on sustainable school meals generally changed?

Preparedness

- Do you work with preparedness in relation to school meals in any way? If so, how?
- What do you know about the general food preparedness in the municipality?
- Are there any goals or policies in the municipality regarding food preparedness or crisis preparedness in meal operations?
- What is the next step in preparedness planning for school meals?

Local food systems

- How does the municipality view the procurement of locally produced food for public meals?
 - *Can you tell me more about the motivations/reasons the municipality has for this approach?*
 - *Does the procurement of local food strengthen the municipality's resilience to crises?*
 - ⇒ *Are there examples of this already? Or is it more of a "just in case" scenario?*
- Are there any plans to collaborate more with other food actors in the local area?
 - *Retailers, wholesalers, or other types of producers?*
- Can you tell me a bit about how you support local food producers and businesses?
 - *Transportation and logistics?*
- Do the efforts in preparedness and initiatives to promote and develop local food systems in the municipality intersect in any other way?

- Påverkar kommunens geografi och produktion hur man jobbar med de här frågorna?

Förändring och utveckling

- Om du tittar tillbaka på de senaste åren, är det någon händelse eller utveckling som har *försvårat* för hållbarhetsarbetet i måltidsverksamheten?
- Hur har det ekonomiska läget med ökade matpriser påverkat arbetet med skolmåltidernas miljömässiga hållbarhet?
- Är det någon händelse eller utveckling som har påverkat hållbarhetsarbetet i måltidsverksamheten i positiv riktning?
- Om vi tittar på arbetet med beredskap i förhållande till skolmåltiderna, vilka händelser har påverkat arbetet där?

Hinder och möjligheter

- Vilka utmaningar för ökad beredskap i de offentliga köken ser du?
 - *Sårbarheter (lagerhållning, transport, kompetens)?*
- Vilka möjligheter för ökad beredskap i de offentliga köken ser du?
- Upplever du att man har gjort några avvägningar mellan att öka beredskapen och att stärka hållbarhetsarbetet? T.ex., när vi nu prioriterar det här så måste vi nedprioritera det här andra.
- Finns det exempel på när insatser för att stärka måltidsverksamhetens beredskap eller motståndskraft mot kriser kan ha gett hållbarhetsarbetet en skjuts framåt?
- Vad skulle man kunna göra för att i större grad få ökad beredskap och ökad hållbarhet att gå hand i hand?
- Om vi blickar framåt, tror du att man kommer att jobba annorlunda med de här frågorna i framtiden och i så fall på vilket sätt?

Har vi missat något?

- Är det något jag har missat att fråga? Något du tycker är viktigt att lyfta?
- Har du några frågor till mig?
- Vill du ta del av forskningsrapporten innan publikation?

- Does the municipality's geography and production affect how it deals with these issues?

Change and development

- Looking back over the past few years, is there any event or development that has made sustainability work in meal operations more difficult?
- How has the economic situation with increased food prices affected the work on the environmental sustainability of school meals?
- Is there any event or development that has positively influenced sustainability efforts in meal operations?
- What events or developments have influenced the work on preparedness in relation to school meals?

Barriers and opportunities

- What challenges do you see for increased preparedness in public kitchens?
 - *Vulnerabilities (food reserves, transportation, expertise)?*
- What opportunities do you see for increased preparedness in public kitchens?
- Do you feel that any trade-offs have been made between increasing preparedness and strengthening sustainability efforts? For example, when we prioritize this, we must de-prioritize that.
- Are there examples of when efforts to strengthen meal service preparedness or resilience to crises may have boosted sustainability efforts?
- What could be done to a greater extent to align increased preparedness and increased sustainability?
- Looking ahead, do you think we will see a different approach to these issues in the future?

Have me missed anything?

- Is there anything I have missed asking? Anything you think is important to address?
- Do you have any questions for me?
- Would you like to review the research report before publication?

Appendix 3. Information and consent form

Information och samtyckesfrågor för forskningsintervju

Du är inbjuden att delta i ett forskningsprojekt om skolmåltider, livsmedelsberedskap och miljömässig hållbarhet som genomförs av forskare vid Kungl. Vetenskapsakademien och Stockholms universitet. I det här dokumentet får du information om studien och om vad det innebär att delta.

Om studien

Mot bakgrund av den senaste tidens fokus på att öka svenska kommuners livsmedelsberedskap undersöker den här studien hur hållbar utveckling och motståndskraft hanteras i förhållande till kommunernas måltidsverksamhet – ses miljömässig hållbarhet som ett verktyg, ett hot eller helt enkelt inte relevant för beredskapsarbetet? Studien genomförs inom ramarna för forskningsprogrammet Mistra Food Futures som utvecklar strategier för en omställning till ett hållbart livsmedelssystem. Studiens första del bestod av en nationell forskningsenkät som distribuerades till Sveriges kommuner i november 2023. Du besvarade enkäten och anmälde intresse för att delta i en uppföljande intervju. Ett urval (omkring 10) av alla som svarade på enkäten blir tillfrågade om de vill vara med på en intervju.

Vad är syftet med intervjun?

Syftet med intervjuerna är att fördjupa förståelsen av möjligheter och barriärer för en hållbar omställning och livsmedelsberedskap att gå hand i hand, utifrån kommunernas arbete med skolmåltider. Dina svar är viktiga för att få en bild av hur kommuner arbetar med dessa frågor och vilket stöd som behövs för att utveckla arbetet.

Vad innebär det att delta i intervjustudien?

Intervjun sker via videolänk (Zoom). Den tar cirka 45-60 minuter och utgår ifrån ett antal öppna frågor. Deltagandet är frivilligt och du har rätt att avbryta intervjun och deltagandet i projektet när du vill utan att ange orsak. Om du vill dra tillbaka dina intervju svar eller dina enkätsvar så har du fram till den 15 februari 2024 på dig att göra detta.

Hur kommer min information att behandlas i forskningsprojektet?

De uppgifter vi samlar in behandlas så att ingen utanför forskningsgruppen kan ta del av dem. Intervjun kommer att spelas in och transkriberas, det vill säga göras om från ljud till text, i dokumenterande syfte. Så fort intervju svaren har transkriberats kommer ljudfilen att raderas. Namn på kommuner och personer kommer att raderas från de transkriberade textfilerna. De transkriberade textfilerna kommer att förvaras i ett säkert skyddat arkiv i 10 år i linje med gängse praxis för arkivering av forskningsdata. Efter genomförda intervjuer, eller efter att du fått möjlighet att ge feedback på forskningen om du önskar det, kommer dina kontaktuppgifter raderas.

Hur kommer min information att användas i forskningsprojektet?

Resultaten från intervjuerna kommer att presenteras i form av en rapport från Mistra Food Futures under 2024 och eventuellt i en vetenskaplig publikation. När forskningsresultaten publiceras kommer dina svar inte att knytas till ditt namn eller kommunen du arbetar i. Om du godkänner det så kan typ av kommun (t.ex. landsbygdskommun i mellersta Sverige) och din roll (t.ex. kostchef) komma att uppges i forskningsresultat. Om du godkänner det så kan citat från intervjun publiceras. Citat från dig kommer i så fall inte att presenteras med namn eller kommun, utan endast genom kommuntyp, del av Sverige, och din roll inom kommunen - beroende på vad du ger samtycke till. Du bekräftar vilka uppgifter som får användas i det bifogade samtyckesformuläret.

Om du har frågor eller önskar ytterligare information är du välkommen att kontakta:

Rakel Alvstad, *Beijerinstitutet för ekologisk ekonomi, Kungl. Vetenskapsakademien* (rakel.alvstad@kva.se)

Malin Jonell, *Beijerinstitutet för ekologisk ekonomi, Kungl. Vetenskapsakademien och Stockholm Resilience Centre, Stockholms universitet* (malin.jonell@beijer.kva.se)

Therese Lindahl, *Beijerinstitutet för ekologisk ekonomi, Kungl. Vetenskapsakademien* (therese.lindahl@beijer.kva.se)

Samtycke till att delta i projektet

- Jag går med på att forskarna inom projektet använder de uppgifter som samlats in på det sätt som beskrivs i det här dokumentet.
- Jag går med på att bli ljudinspelad.
- Jag förstår att mitt deltagande är helt frivilligt och att jag kan dra mig ur studien utan att ange orsak och utan några påföljder.
- Jag förstår att jag kan dra tillbaka mina intervjusvar fram tills den 15 februari 2023.

Jag samtycker till att delta i studien.

Citat och andra uppgifter som du delar under intervjun kommer **inte** att identifieras genom namn eller kommun i denna studie, utan endast genom typ av kommun, del av landet och din yrkesroll, beroende på vad du känner dig bekväm med.

Kryssa för att godkänna vad du vill ge ditt samtycke till:

- Att citat från intervjun kan publiceras (utan namn och kommun).
- Att vilken kommuntyp jag arbetar i uppges (t.ex. mindre tätort i norra Sverige).
- Att min yrkesroll uppges (t.ex. kostchef).

Dagens datum är:

Mitt namn är:

Underskrift:

