

University of Salford, Manchester

Sustainable Food Procurement in Public Catering
– comparison of the UK with Denmark & Sweden

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Appendix 2 Local authority catering - some basic phrases

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Appendix 4 UK local authorities, 2013 to 2021 - Food for Life Served Here
Accreditations

Appendix 5 Survey of Meat Reduction In Swedish Kommunes

List of Abbreviations

Apr	April
APSE	Association of Public Services Excellence
ARYE	Annual report and accounts for the year ending
Aug	August
BERAS	Baltic Ecological Recycling Agriculture & Society
Catg	Catering
CC	City Council
CF	Carbon footprint
CSA	Community Supported Agriculture
Dec	December
DK	Danish
DKK	Danish Krone
DKLA	Danish local authority
Dec	December
DEFRA	Department of the Environment, Food and Rural Affairs
DFP	Dynamic Food Procurement
DPS	Dynamic Purchasing (Procurement) Systems
DHSC	Department of Health & Social Care
ERDF	European Regional Development Fund
Ed	Editor
En	English
FAO	Food & Agriculture Organisation
Feb	February
F2F	Face to face
FFL	Food for Life
FFLP	Food for Life Partnership
FFLSH	Food for Life Served Here
FLW	Food Loss and Waste
F2S	Farm to School
GBP	Great Britain Pounds
GHG	Green House Gas
GPP	Green Public Procurement
Govt	Government
Int	Interview
Intnl	International
iPOPY	Innovative Public Organic food Procurement for Yout
Jan	January
KRAV	Swedish Association for Control of Organic Production
LA	local authority
LACA	Lead Association for Caterers in Education
LRF	Lantbrukarnas Riksförbund
MAFF	Ministry of Agriculture, Fisheries & Food (Denmark)
Mar	March
Mgr	Manager
MSC	Marine Stewardship Council
NAO	National Audit Office
N/A	Not available
N/K	Not known

NGO	Non Governmental Organisation
Nifa	Varmland food industry association
Nov	November
Oct	October
Proct	Procurement
PSPFI	Public Sector Food Procurement Initiative
Q	Question
RISE	Research Institute of Sweden
SE	Swedish
SEK	Swedish Krona
SELA	Swedish local authority
Sept	September
SKI	Staten og Kommunernes Indkøbsservice (Denmark)
SKL	svenske kommuner landstinge
SPF	Sustainable Food Procurement
SME	Small & Medium Enterprises
SOU	Statens Offentliga Utredninga (Official government research)
SPP	Sustainable Public Procurement
Sust	Sustainability
Tel	Telephone
UFSM	Universal Free School Meals
UIFSM	Universal Infant Free School Meals
UK	United Kingdom
UKLA	UK local authority
UNEP	United Nations Environment Programme
URBACT	European exchange and learning programme promoting sustainable urban development.
USDA	United States Department of Agriculture
WRAP	Waste Resource Action Plan

Table 1a Danish Organisations

Danish Name	English Translation
Danmarks Naturfredningsforening	Danish society for Nature Conservation
Danmarks Statistik	Statistics Denmark
Dansk Vegetarisk Forening	Danish Vegetarian Association
Hotel- og Restaurantskolen	Hotel and Restaurant School
Fødevare Danmark	Food Denmark
Fødevarestyrelsen	Danish Veterinary and Food Administration
Forum for Bæredygtige Indkøb	Forum for Responsible Purchasing
Grønt Regnskab	Green Accounts glossary
klimakommuner	Climate Municipalities
Kloge fødevarerindkøb	Smart Food Procurement
Københavns Kommun	City of Copenhagen
Københavns Madhus Kommune	Copenhagen House of Food Municipality
Kost og Ernæringsforbundet	Diet & Nutrition Association
Landbrug & Fødevarer	Agriculture & Food
Landbrugsstyrelsen	Danish Agricultural Agency
Madfællesskabet	Food Community
Mad- og måltidspolitik	Food and meal strategy
Ministeriet for Fødevarer, Landbrug og Fiskeri	Ministry of Agriculture, Fisheries and Food (MAFF)
Økologisk Landsforening	Organic Food Association
Økologiske Spisemærke	Organic Food Label
ØkoValg 2017	Organic Election 2017
Partnerskab for Offentlige Grønne Indkøb	Partnership for Public Green Procurement
Råhandel	Raw Trade
Spisemærk	Official organic accreditation
Staten og Kommunernes Indkøbsservice (SKI)	State and municipal procurement service

Table 1b Swedish Organisations

Swedish Name	English Translation
Ekomatcentrum	Organic Food Centre
Energikontorsydost	Energy Agency for Southeast Sweden
Forum för miljösmart konsumtion	Forum for Environment-smart Consumption
Jordbruksverket	Agriculture Agency/Ministry
KRAV	“Requirements” (Association for Control of Organic Production)
kommun	Kommune/Municipality
Konkurrensverket	Swedish Competition Authority
Kost Och Naring	Diet & Nutrition Association
Landsbygdsnätverket	Swedish Rural Agency
Lantbrukarnas Riksförbund (LRF)	National Farmers Federation
Länsstyrelsen Västra Götalands län	County Administrative Board of Västra Gotland County
Livsmedelsverket	National Food Agency
Mattanken	Food Tank (Centre of Expertise)
Nationellt Centrum för Kommunal Samordnad Varudistribution	National Center for Municipal Coordinated Goods Distribution
Regeringen	Government
Regeringskansliet	Government Offices
Region	Region
Riksdagen	Parliament
Skolmatsakademin	School food academy
Skolmatens vänner	School Food Friends
Statistiska centralbyrån	Statistics Sweden
Svensk Fågel	Swedish Bird
Svenske Kommuner Landsting	Swedish Association of Local Authorities and Regions
Svensk Kött	Swedish Meat
Sveriges Offentliga Inköpare	Swedish Association of Public Purchasers
Sveriges forskningsinstitut	Swedish Research Institute
Trafikverket	Swedish Transport Administration
Upphandlingsmyndigheten	Swedish Public Procurement Authority

Note on currencies

Reference is made in the text to amounts in sterling £ and to Swedish Kronor [SEK] and Danish Kronor [DKK]. The exchange rates vary from time to time.

	UK Sterling £	Danish Kronor [DKK]	Swedish Kronor [SEK]
10 th July 2019	1.00	8.30	11.82
24 Sept 2020	1.00	8.13	11.60
29 June 2022	1.00	8.60	12.36

Abstract

The research compares sustainable food procurement in public catering in three countries: Denmark, Sweden and the UK. The greatest difference between the UK and the other two countries was the very much higher percentage of organic food in Denmark and Sweden. Within Europe Denmark and Sweden are leaders in organic food consumption – both in the overall market and in public procurement. The rest of Europe – apart from the UK - appears to be going in the same direction. The PhD research examines Denmark and Sweden's achievements. It shows that Danish local authorities have often measured the percentage of organic food by weight rather than value. This means that the well-publicised achievements of the City of Copenhagen since 2001 in increasing organic food in its public kitchens to 88% are difficult to compare with that of local authorities in other countries which measure organic food by value. The achievements of Sweden in increasing organic food in its public kitchens from 2.5% in 2004 to 38% in 2020 are arguably more impressive but have had less academic recognition and international publicity.

As regards procurement arrangements, Sweden is de-centralised with its 290 kommuner buying food singly or in small groupings and with a strong emphasis on local procurement. Denmark by contrast is highly centralised with a single national contract, although there are some local procurement initiatives. In the UK most food procurement is carried out through large city, sub-regional and regional contracts

The move to increased cooking from fresh ingredients and seasonal menus has been a common feature of public kitchens in all three countries. Reducing meat has also been a common theme, although in rural parts of Denmark there has been controversy over the absence of vegetarian alternatives. Emphasis on reducing food waste has been very considerable in Sweden, significant in Denmark and rather limited in the UK. There has been much greater emphasis on measuring and reducing carbon footprint in Sweden than in Denmark or the UK.

School food quality standards in Denmark and Sweden have improved. In England, by contrast, widespread outsourcing to private caterers has undercut local authority catering organisations and undermined school food quality. In the last two years school food in Scotland has diverged increasingly from England – with no outsourcing, improved quality standards and extra money for universal primary free meals.

The research has thrown light on many issues not hitherto covered in academic literature. It proposes a framework for analysing public sector food procurement which could be used to analyse policies in any country

Chapter One Introduction

1 .1 Background to the Research

1.1.1 Growing importance of sustainable procurement

The importance of public procurement within the economy has been emphasised in numerous studies. In 2013 , EU public authorities spent around 14% of Gross Domestic Product (GDP) on the purchase of services, works and supplies while corresponding spend in the USA was over 10% (Cernat & Kutlina-Dimitrova, 2015). Other studies which underline this point include Piga & Tatrai (2015, p.14) and Edler & Georghiou (2007, p.950). Sustainable Public Procurement (SPP) refers to an approach adopted by governments around the world attempting to reduce the negative environmental and social impacts of public procurement policies. Other terms used to describe the same policies are green public procurement, environmentally responsible public procurement, green purchasing, and eco-procurement. (Grandia, 2016; Witjes, & Lozano, 2016). The amount of academic literature on sustainable procurement in both the public and private sectors has seen a steep increase over the last few years (Appolloni, Sun, Jia & Li, 2014; Johnsen., Miemczyk & Howard ,2017). The growing international importance of sustainability within procurement is underlined by a recent international survey carried out by the United Nations Environment Programme.

All the 41 countries participating in this study reported having SPP commitments and provisionsCompared to 2013, the inclusion of SPP in policy provisions has increased in all policy arenas.... However, the integration of sustainability consideration in procurement processes, procedures, software or tools has still not been fully accomplished. SPP is rarely implemented at a broad scale and is often the initiative of an individual department or agency within the government. This leads to fragmented implementation efforts and results. However, SPP practices are becoming more widespread in all regions (UNEP, 2017, p. ix).

1.1.2 Public Food – “A powerful market force”

A review of school food procurement carried out by the European Joint Research Centre on behalf of the European Commission and the Maltese Presidency states that the total EU social food service market, including private sector expenditure, approximated to €82 billion per annum. The phrase “social food service” referred to five sectors:

- schools, nurseries and other education institutions,
- hospitals,
- elderly homes and meals and wheels,
- canteens in private and public employers
- prisons and armed forces

This constitutes a sizeable market as well as a powerful market force which should not be ignored. Because of the sheer value and volume of food public procurement, public institutions have the potential to drive the market and prompt innovation towards the provision of more nutritionally balanced foods and healthier diets in a fair and transparent way. (Caldeira, et al., 2017, p.13)

The review of *Healthy and Sustainable Diets for European Countries* published by the European Public Health Association asserts that

“By changing the routines and practices of public food catering services in a way that is more supportive of sustainable diets, the public sector is sending a strong signal to citizens (and to the food industry) about official ambitions regarding the future direction of food systems.” (Birt et al., 2017, p.52)

In several countries there has been support at both national government and municipal level for introduction of organic food into public catering and this has had a certain amount of coverage in academic literature. This has been discussed in Danish academic literature – particularly works by Bent Egberg Mikkelsen and Nina Nørgaard Sørensen. It has also been mentioned in case studies of Italy (Caputo et al., 2017; Cerutti, 2016; Galli et al., 2014; Maietta et al., 2016) Finland (Lehtinen, 2012; Mikkola, 2009; Wahlen, 2012; Risku-Norja, & Løes, 2017) and the UK (Morgan & Sonnino, 2008). Previous work done in this area explored sustainable food procurement policies and practice in UK school catering (Stein, 2014). In the PhD it is now intended

to compare policies and practice in the UK with two other European countries, Denmark and Sweden.

In Denmark the percentage of land farmed organically rose from 7.4% in 2012 to 8.6% in 2017. In Sweden it rose from 15.6% to 18.8% (Willer & Lernoud, 2014, p.204; Willer & Lernoud, 2019, p.223). By comparison in the UK in the same years the percentage fell from 3.4% in 2012 to 2.9% in 2017. Denmark and Sweden both have large-scale public catering systems. In Sweden there is a longstanding national policy of the provision of free meals to all children in schools and nurseries and also extensive public catering for elderly people (Gulberg, 2006). In Denmark the growth of school and nursery catering is a recent development linked to lengthening of the school day and growing concerns about child nutrition. In most municipalities children bring sandwiches to school and the school does not provide cooked school meals (Løes & Nölting, 2011, p.103). There is extensive provision of public catering for the elderly. Denmark and Sweden are two of the four European countries which consume the highest percentage of organic food in Europe, with organics making up respectively 8.4 per cent and 7.3 per cent of total food consumption in 2015. (Willer & Lernoud, 2017, p.231). The other top countries are Switzerland, Luxembourg and Austria. In both Denmark and Sweden the high percentage of organic food in public procurement has been achieved through changes in the organisation of public catering, normally without increasing the overall budget (Mikkelsen & Sylvest, 2012; KRAV, 2014, p.4). This reflects a strong public desire in these countries to reduce the environmental burden of water pollution caused by non-organic pesticides and fertilizers and belief that organic food is healthier. There is a marked contrast here with the UK, where the percentage of organic food is much lower and the argument has been made in government circles that organic was not worth the extra cost because there was no scientific evidence that organic food was more nutritious (Randerson, 2006; Dangour et al., 2009.) The Scottish government however has continued to support organic food in agriculture and public catering and these policies have been inspired by Denmark (Soil Association, 2013).

Other European countries are following Denmark and Sweden in terms of increasing the percentage of organic food in public catering. Of the larger European countries

Germany had 4.8% of its food market taken up by organic food, France 2.9 per cent and Italy 2.5 per cent . The overall trend in Europe is for strong growth in organic retail sales. The European organic market more than doubled between 2006 and 2015. During 2014-2015 double digit growth rates for organic markets were seen in ten European countries. This included large countries such as Germany, France and Italy, as well as smaller countries such as Austria and Switzerland. In France the percentage of land farmed organically was 6.6% at the end of 2017. In June 2018 the government adopted a new plan for organic farming development – Ambition Bio 2022 which has a budget of 1.1 billion euros and envisages extending organic to 15% of French farm land by 2022. With public catering there is a goal of a 20% organic share by 2022 (Valleix, S. 2018) A detailed survey of out of home catering published in November 2018 showed that 1.4% of food in public restaurants was organic but there were widespread aspirations to increase this percentage (Agence Bio, 2018).

The German government has also made a commitment to increasing the percentage of land farmed organically to 20 per cent and increasing the use of organic food in out of home catering – reiterated in a statement by Parliamentary State Secretary, Michael Stübgen on 15th January 2019 (Stübgen 2019). The percentage of organic food in the overall German food market has been estimated at 5% but much lower in out of home catering – around 0.5% (Fürst, 2019). The introduction of an increasing percentage of organic food into public catering in Germany has been directly inspired by the example of Denmark. Danish organic food exporters have promoted this (Friis, 2017). This has been publicised through seminars in Hamburg and Berlin (Oekolandbau, 2017; Pebonline, 2019). The City of Berlin has established a House of Food modelled on Copenhagen (Strauß, 2018). Other German cities interested in imitating the Copenhagen House of Food were Bremen, Cologne and Munich (Gruene Fraction Muenchen, 2018 Wulf, 2020). In February 2018 the German organic association, Bioland, introduced a scheme for promoting organic food in restaurants, hotels and public kitchens, with awards modelled on the Danish Spisemærk – Gold for 90-100% organic food, Silver for 60-90% or Bronze for 30-60% (Bioland, 2018 – Fig 1).

Mundt-Nielsen (2019) states that other countries showing interest in the Danish example include Korea, Indonesia and China. For new Italian government guidance promoting organic food in public catering see Minambiente (2020). For a Belgian initiative promoting healthy and sustainable school meals see GoodFood@School (2020). For Austrian initiatives see Greenpeace (2018b, p.6).

The European Union announced in September 2020 a policy objective of increasing the organic percentage of EU farmland to 30 per cent from a present level of 8 per cent, with public institutions being encouraged to increase their procurement of organic food (European Commission, 2020, pp.11,14).

There has also been increasing imitation by other countries of Sweden's example in introducing universal free school meals (UFSM). The UK introduced Universal Infant Free School Meals (UIFSM) for children aged 5-7 in September 2014 to combat child obesity – costing £1 billion+ between 2014 and 2016 (Gove & Laws, 2016). During the 2017 UK general election Theresa May proposed to abolish this while Labour advocated extending it to all primary age school children. Theresa May's loss of her parliamentary majority led to the retention of UIFSM (Peck, 2017; Coughlan, 2017). The Scottish government announced in February 2021 that it would extend free school meals to all primary school children by August 2022 (Foad, 2021).

The Parliament of the German State of Berlin voted in December 2018 to introduce UFSM for all primary school children at an additional cost of 40 million euros. (Klesmann & Reinsch, 2018; Zilz, 2019a). UFSM has been advocated as a policy for the whole of Germany by an opposition political party – Die Linke (DNSV, 2019) Within the German government a new family law is now being proposed to provide free school meals for all children and young people from low income families (Zilz, 2019b).

In Czechia UFSM has been suggested by the prime minister - although this proposal has not so far been adopted by the government (Bućan, 2019). In Russia the government announced in September 2020 that regional governments were required to introduce free school meals which would be introduced in all primary schools by the

beginning of the school year 2023/24 (DNSV, 2020). In Norway a new government announced in October 2021 that it would introduce free meals in all Norwegian schools (Magasin Maltid, 2021).

1.1.3 Choice of Denmark and Sweden as case studies

For the purposes of this PhD thesis it was concluded that Sweden and Denmark were particularly suited as case studies for comparison with the UK because they are relatively small countries where the adoption of organic food by public catering is well documented at both national and local level by a variety of government and NGO sources – as will be shown below. As regards agricultural trade Denmark is one of Europe's major food exporting countries – exporting a great deal to both the UK and Sweden. It is only with fruit and vegetables that it has a substantial and increasing trade deficit. Sweden and the UK both have substantial and historically increasing food trade deficits (FAO, 2018, pp. 99, 210,225. This refers to trade figures between 1995 and 2016 On Swedish food imports see Jordbruksverket, 2017).

The inclusion of Germany as a fourth case study was considered. However Germany is a much larger country and finding out what is happening is much more of a challenge than with Sweden or Denmark. Unlike in Denmark or Sweden statistics are not available giving an overall national picture of the use of organic food in public catering. It is possible to obtain statistics covering a few large cities. The Biostadten network consists of ten German cities promoting organic food. They conducted a survey of their members in Spring 2017 which produced statistics for six cities (Oekolandbau, 2017).

1.1.4 Centralised and de-centralised procurement policies

A three way comparison between the UK, Sweden and Denmark would also be worthwhile because of considerable differences in procurement policies in the three countries.

- Denmark has introduced a centralised approach. A single national contract for buying food was awarded in November 2016. All municipalities were encouraged to use it. Municipalities in Denmark went through a reorganisation process in 2007, with the number of municipalities being reduced from 270 to the current 98. Its population is 5.7m, so average population per municipality is 56,943. There are 25 municipalities with a population less than 30,000.
- Sweden by contrast has a decentralised approach. It has 290 municipalities for its population of 9.8 million, making an average population of 33,592. The large number of smaller municipalities often make their own procurement arrangements or form into small groups. There are 77 municipalities with a population of less than 10,000 inhabitants and 131 municipalities between 10,000 and 30,000.
- The UK is somewhere in between. Total population of England is 55.6 million divided amongst 326 local authorities, making an average population of 170,613. The ten smallest municipalities have populations between 34,900 and 56,600 (excepting the sui generis City of London and Scilly Isles). There are 86 municipalities with less than 100,000 population. There are many collaborative procurement arrangements at regional or sub-regional level, although individual local authorities are free to join or depart from these. In Scotland (5.2 m population) the devolved government had set up a national procurement contract and encouraged the thirty two local authorities to use these. There was a similar arrangement in Wales (3m population).

1.1.5 Effects of different government policies

It would also be possible to compare the impact of different national government policies towards organic food in the three countries:

- In Denmark there was strong government support for introduction of organic food in public catering under the Social Democrat-led government which was in power between 2011 and 2015 (MAFF, 2015). The centre-right government which succeeded it cut back national government financial assistance for organic conversion in public catering. The Social Democrats came back to power after the May 2019 election.

- In Sweden the Social Democrat-led government which has been in power since 2014 promoted increased use of organic and Swedish food in public catering. After the September 2018 general election the political parties were so evenly balanced that for three months the future composition of the government was unclear. After negotiations about policy with two opposition parties, it was agreed in January 2019 that the Social Democrat-led government would remain in office.
- In Britain the Conservative-Liberal coalition government of 2010-2014 produced a national strategy for public food procurement in 2014 – the British Food Plan. This promoted increased purchasing of local and British food and also gave encouragement to organic food by supporting the Food for Life Catering Mark. More recently however all government activities have been overshadowed by Brexit and the pandemic.

1.1.6 Brexit's effect on public procurement

Prior to departure from the European Union, the UK's procurement legislation was based on EU law, with its requirement that all public procurement should be open to competition from suppliers based anywhere in the European Union. The post-Brexit legal regime still requires UK public organisations to offer equal treatment to suppliers based in EU countries – although in some respects the legal environment may be more favourable for UK suppliers (Rush & Whitfield, 2021).

Another consequence of Brexit was new immigration restrictions which had the effect of excluding many EU nationals who had up till then provided a significant percentage of the workforce producing food within the UK. See for example a press report relating to the Scottish Highlands (Arnaud, 2019).

1.2 The Need for the Research

The introduction to the recent special issue on public procurement of the *International Journal of Public Sector Management* says that the lack of international comparative studies into the effectiveness of public procurement as a policy tool is a critical gap “in the research landscape and key to understanding the full potential and effectiveness of public procurement as a policy tool” (Grandia & Meehan, 2017). The literature review demonstrates the scarcity of international comparative studies in public procurement. The PhD will therefore help to fulfil this need for further evidence of what is actually happening in public procurement – through a comparative study of three countries. Previous work made a contribution to the limited UK literature on public food procurement through a survey of fifteen public catering organisations. (Stein, 2014). In Sweden there has been a great deal of activity among national government, municipalities and NGOs relating to public food procurement which is well documented in Swedish language sources (For example Ryegård, 2013; Ekomatcentrum, 2017; Svenskt Kött, 2017) There has been little academic research published in English The best available survey is that of Granvik (2012). There are also two brief conference papers. Röcklinsberg, Lindström, Osowski & Rööös (2016) discusses using digital tools to facilitate procurement decision making and Brunius, Moula, and Sandin (2016) discuss the ethical matrix as a decision-making tool. In Denmark there is a great deal more academic research – particularly by Bent Egberg Mikkelsen and Nina Nørgaard Sørensen as lead authors. However most of the published research relates to the period before the change of government in mid 2015. Existing comparative literature exists but is limited in its scope. The seminal study *School Food Revolution* dates back to 2008 (Morgan & Sonnino, 2008). There are three articles which give rather a superficial treatment of this subject (Smith et al, 2016; Neto & Caldas, 2017; Oostindjer et al ,2017). Løes & Nölting (2011) report on a comparison of school food procurement in Denmark, Finland, Germany, Italy and Norway, carried out by the Ipopy project. Reference will also be made to the comparative study of Bristol and Malmo (Moragues-Faus & Morgan, 2015).

1.3 Research Outline

1.3.1 Research Questions

- To examine how UK policy and practice with regard to sustainable food procurement for public catering compares with other EU countries, particularly Denmark and Sweden.
- To explore how policy and practice are shaped by the interaction of national government policies, municipal policies and NGOs campaigning around public food policies.

1.3.2 Research aims and objectives

The research compared sustainable food procurement policy and practice within local authority public catering in three countries – the UK, Denmark and Sweden. National and local governments have instituted these policies with a view to reaping both economic and environmental benefits. The economic benefit has been support for local and national food producers – safeguarding employment in highly competitive industries. Environmental benefits have included greater usage of organic food and lower carbon emissions.

The research objectives were

- To consider the organisation of public procurement, particularly quality standards, organic and local food procurement, the scale of public procurement, coordinated distribution, specific product issues (eggs, fish, palm oil) and procurement of innovative products
- To examine specific catering techniques which included introduction of seasonal menus, moves to prepare meals from fresh ingredients, reductions in meat and waste and centralisation or decentralisation of kitchens

- To develop a theoretical framework which can be applied to analysis of policy and practice in other countries.

1.4 Significance and intended contribution of the research

In this work thorough consideration will be given to the ways in which public authorities – particularly municipalities – in the three countries go about trying to embed sustainability in public food procurement policies. The goal is to ascertain what practices have been successful in achieving this aim and barriers to sustainable public food procurement. The research will examine differences and similarities between the three countries. It will consider procurement and catering practices.

The research is highly original. It is the first academic research which carries out a three way comparison of sustainable public food procurement policies in these three countries. Two of these three countries – Sweden and the UK – have previously received extremely limited coverage in academic literature. This research greatly increases the amount of information available about these countries.

The research has developed a model for analysis of sustainable food procurement for public kitchens which can be applied to any country. This can be used by public officials and NGOs attempting to understand and promote sustainable public food procurement policies.

1.5 Research Methodology

The general research approach of this thesis is interpretivist and phenomenological. Interpretivism stresses that the researcher must aim to understand the differences between people as social actors. Phenomenology is a research philosophy that “sees social phenomena as socially constructed and is particularly concerned with

generating meanings and gaining insights into these phenomena” (Saunders, Lewis & Thornhill 2012, p.677). The interpretivist approach looks at the subjective meanings which people attach to social phenomena and how these motivate their actions (See further discussion in Chapter 3.). The research mainly involves semi-structured interviews with individuals knowledgeable about local authority catering in the three countries. It also includes some participant observation and review of documents.

1.6 Structure of Thesis

This thesis features six chapters:

- Chapter 1 introduces the proposed research.
- Chapter 2 undertakes a review of published academic literature summarising the current level of knowledge relating to sustainable public food procurement – particularly in the UK, Sweden and Denmark but also taking into account other countries. The concept of “sustainable public food procurement” is explained – showing how it covers topics set out in the research objectives (see 1.3.2 above.).
- Chapter 3 provides overviews of national and municipal policies for Sweden, Denmark and the UK.
- Chapter 4 describes the research methodology and sets out the research questions, showing their relationship to the literature review (paragraph 3.8)
- In Chapter 5 the author will present findings from the data collection stage of the research.

- In Chapter 6 there will be discussion of the extent to which the research objectives have been achieved, originality and contribution to knowledge, limitations of the study and recommendations for further research.

Chapter Two Academic literature Review

2.1 Structure of this Chapter – academic literature relevant to the research objectives

2.1.1 Introduction

This chapter will review academic literature relevant to the specific PhD research objectives set out in Chapter 1 (1.3.3 above). It will summarise what is already described in the academic literature and assess the gaps in knowledge which justify further research (Saunders, Lewis & Thornhill, 2012, pp. 70-80). The structure of the academic literature review is shown in Table 2. The chapter commences with brief discussions of European Union procurement law (2.2), nutritional standards for food in public kitchens (2.3), sustainable and green public procurement (2.4) and sustainable food procurement policies (2.5). It continues with a discussion of municipal food procurement policies (2.6) and the closely related topic – the role of civil society (NGOs) (2.7). The chapter continues with discussion of five themes which are aspects of food procurement policies: promoting organic food (2.8), supporting local/regional suppliers (2.9), safeguarding animal welfare and biodiversity (2.10), promoting decent working conditions among suppliers ((2.11) and supporting innovative suppliers (2.12). The chapter then discusses the critical topic of reducing environmental impacts (2.13) and the closely related topic of reduction of meat usage (2.14). There follows discussion of five elements of sustainable catering practice: preparing meals from fresh ingredients (2.15a), Increasing staff training and job satisfaction (2.15b), introducing seasonal menus (2.16), reduction of food waste (2.17) and de-centralised versus centralised kitchen systems (2.18)

Table 6 (section 2.29) summarises themes covered in sections 2.6 to 2.18 . It relates them to specific references and chapter sections. This in turn forms the basis for the Research Questions (see Table 21 below 4.15).

The second half of this chapter gives a summary of the academic literature for the three countries which are the subject matter of this thesis – United Kingdom (2.20) Denmark (2.21) and Sweden (2.23) and discussion of Nordic Nutritional Recommendations and the New Nordic Diet (2.22). This is summarised in Table 7 (section 2.29).

Table 2 Academic Literature Review - Themes

Theme	Section
Structure of this chapter	2.1
European Union procurement law	2.2
Nutritional standards for food in public kitchens	2.3
Sustainable and green public procurement – Need for more research	2.4
Sustainable food procurement policies	2.5
Municipal food procurement policies	2.6
Role of civil society (NGOs)	2.7
Promoting Organic food	2.8
Supporting local/regional suppliers	2.9
Safeguarding animal welfare and biodiversity	2.10
Promoting decent working conditions among suppliers	2.11
Supporting innovative suppliers	2.12
Reducing environmental Impacts	2.13
Reduction of meat usage	2.14
Preparing food from fresh ingredients	2.15a
Increasing staff training...and job satisfaction	2.15b
Introducing seasonal menus	2.16
Reduction of food waste	2.17
De-centralised versus centralised kitchen systems	2.18
National Overview of academic literature – for selected countries	2.19
United Kingdom	2.20
Denmark	2.21
Nordic Recommendations & New Nordic Diet	2.22
Sweden	2.23
Themes emerging from the academic literature	2.24

2.1.2 Searching the published academic literature

A large number of searches were performed of two principal databases of published English language academic literature – sciencedirect and SCOPUS. In addition weekly alerts were set up on google scholar for a large number of search terms. A list of search terms is given in Appendix 1.

2.2 European Union procurement law

At the time of writing Sweden, Denmark and the UK are all members of the European Union and subject to EU public procurement law. The core assumption of EU public procurement law is that suppliers from all over the European Union should be able to compete on an equal basis for public procurement opportunities. See – for example – Maciejewski, 2018. It is therefore illegal for public authorities to specify that suppliers must be local. It is permissible for tender specifications to lay down requirements about the nature of the food purchased – for example that the food should be organic. Protected Designated Origin (PDO) and Protected Geographical Indication (PGI) are European Union quality schemes that promote and protect the names of quality agricultural products and foodstuffs. Such as Scottish Beef, Blue Stilton cheese or Parma ham. Within Europe the countries with the greatest numbers of these designations are Italy with 318, France with 274 and Spain with 222, followed by 95 in Germany and 79 in the UK. In Denmark by contrast there are only 10 food products protected in this way and in Sweden only 8. Austdal (2018, p. 242) suggests that the historical explanation for these differences is that the countries with large numbers of designations have built up large-scale export of designated traditional products and therefore have an incentive to protect them against counterfeiting. EU regulations permit a public authority to specify a product with a protected designation in their tender and thereby give a great advantage to local producers of this product. This is a widespread practice in Italy (Soldi, 2018, p.11-13) It is carried out to a limited extent

in the UK – particularly with respect to Scottish Beef (Lyne, Beechener, Tregear, Wyatt & Wheeler, 2009, p. 51). There is practically no scope to do this in Denmark or Sweden because the number of products with protected designations is so small. New EU procurement regulations came into force in April 2016. The new rules allow for environmental and social considerations to be considered when awarding public contracts as well as the need to encourage innovation. The new regulations endeavour to make it easier and cheaper for small and medium-sized enterprises (SMEs) to bid for public contracts by encouraging public authorities to divide tenders into lots and limiting of turnover requirements (European Commission, 2018).

2.3 Nutritional standards for food in public kitchens

There are large differences between different countries. Lucas et al (2017) gives an overview of the approaches to the provision, regulation, and improvement of preschool and primary school meals in the UK, Sweden, and Australia. Sweden has a national policy which applies to all preschool and school meals. . Legislation demands that meals are nutritious.; All children must receive free meals, and a pedagogical approach to meals is encouraged – that is meals are aimed at educating the children as well as providing nourishment. By comparison the UK system is varied and decentralised. Preschool-specific meal standards only exist in Scotland, which reflects the fact that almost all nursery care in the UK has been outsourced to private sector providers. Meals in most primary schools are regulated by food-based standards, but academies and free schools set up between 2010 and June 2014 were exempted from these standards and many still do not comply. Both the UK and Sweden use food groups (starchy foods, fruit and vegetables, proteins and dairy) in a healthy plate approach. The third country covered in Lucas's comparison is Australia. Australian States and Territories all employ guidelines for school canteen food, predominantly using a “traffic light” approach outlining recommended and discouraged foods; however, most children bring food from home and are not covered by this guidance.

For this thesis the third country to bring into the comparison is Denmark and here most children do not have school meals but bring lunch packs from home. In 2006 only one-

fourth of Danish state schools provided school canteens and 25% subscribed to a fruit and vegetable provision programme. There were no national regulations relating to provision of school meals or their quality. Meal systems in Danish schools were organised at municipal level or by individual schools.

A school food debate has recently arisen in Denmark and it has been argued that lunch provision is needed during school days in order to prevent the increasing prevalence of overweight and obesity in Danish children, although organic food is not usually involved (He & Mikkelsen, 2014, p. 111).

For an overview of countries with laws prescribing the standard of school food see Sisnowski, Handley & Street, 2015. For an overview of the new US Department of Agriculture school meal standards see Cohen, Richardson, Parker, Catalano & Rimm (2014). There is a considerable literature on the relationship between poor diet and the physical and mental well-being of children. To explore this in detail is beyond the scope of this thesis.

2.4 Sustainable and Green Public Procurement – Need for more research

Ruparathna & Hewage (2015, p.306) summarise the origins of the concept of sustainable public procurement. In 2002 the World Summit on Sustainable Development in Johannesburg recommended that all governments should take account of sustainable development considerations in public procurement (United Nations, 2002). In the UK this led the government to establish a Sustainable Procurement Task Force which defined sustainable procurement as

“A process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization, but also to society and the economy, whilst minimizing damage to the environment.” (DEFRA, 2006, p.10)

Smith et al (2016, pp.239-241) discusses how the phrase Green Public Procurement is sometimes used interchangeably with sustainable public procurement and sometimes used to refer specifically to measures which target the environment.

Amann et al 2014 underline the need for research into sustainable or Green public procurement – introducing a study of procurement in four EU member states. They stress the importance of the public sector internationally as representing substantial market demand. Sustainable public procurement is gaining momentum throughout European Union member states. It has the potential to influence markets in terms of environmentally friendly, socially responsible and innovative products and services:

However, until recently, there have been very limited theoretical and empirical investigations in SPP in academic literature ...Additionally, limited research.. has investigated public body engagement with SPP from a multi-country perspective; the vast majority of extant literature has investigated sustainability management and performance issues from a single-country perspective (p.352).

Grandia & Meehan (2017) add that public procurement remains an understudied topic in public sector management:

Little is known about how procurement is implemented, how successful it is, what factors and actors determine its effectiveness and successfulness, and how public procurers deal with the (often conflicting) goals that they have to combine in their procurement (p.303).

The literature review by Cheng, Appolloni, D'Amato & Zhu (2018) points out that there is relatively little literature on the effectiveness and efficiency of GPP as an environmental policy tool. Cheng refers to the arguments by Marron (2003) and Lundberg (2015) that Green Public Procurement can be counter-productive – based on the assumption that if public procurers choose green products the price of the conventional alternative will fall and price sensitive private consumers will buy more conventional products. Lundberg and Marklund are Swedish academics and refer specifically to the impact of public procurement of organic food. Public sector purchases account for only about 4% of Sweden's food market – so public sector purchasing of organic food cannot be expected to have any significant impact on the food market and in the long run no significant impact on domestic agriculture's conversion to organic (Lundberg & Marklund, 2018, p.43) Lundberg & Marklund, think it likely that the Swedish private sector has increased its purchasing of non-organic food in response to increased public purchasing of organic food, while acknowledging that they have found no evidence to confirm this. For further discussion of Sustainable Public Procurement within EU procurement laws see Calleja (2015) and Sjøfjell, & Wiesbrock, (2016) . For an international perspective see McCrudden (2007).

2.5 Sustainable food procurement

2.5.1 Overview studies

Rimmington, Smith & Hawkins (2006) is one of the first academic articles to discuss the concept of sustainable food procurement. The article was written in response to a new UK government initiative, the Public Sector Food Procurement Initiative, which was launched in 2002 (Deloitte, 2009). It reports on a survey of leading UK contract caterers about sustainable procurement practices. It sets out a broad definition of sustainable food procurement encompassing supporting the local economy, seasonality, sustainable farming involving high environmental standards and reduced energy consumption, promoting animal welfare and valuing nature and biodiversity and promoting fair trade and ethical employment in the UK and overseas.

One of the most recent and comprehensive overviews of sustainable food procurement is Goggins & Rau (2015). This presents FOODSCALE - an innovative tool for measuring the sustainability of food intended for public consumption in organizations such as schools, hospitals and workplaces. FOODSCALE is based on an in-depth review of the food sustainability literature. It was tested through a comparative study of 8 cases across 5 organisations in Ireland. The FOODSCALE method quantifies 11 sustainability categories which together cover 36 food sustainability indicators. It covers the three dimensions of sustainability: society, economy, environment. It considers the entire food system, thus incorporating aspects of production, distribution, procurement, consumption and waste disposal. It proposes to award scores for performance on each indicator – see Table 3 which presents the FOODSCALE indicators.

It will be noted that there is a strong correspondence between the specific research objectives of this PhD (paras 1.3.3 and 2.1) and the sustainability categories set out in the Foodscale method. Personal communications from Rau and Goggins (5 April 2019) have confirmed that they do not know of any institutions that have adopted the FOODSCALE method but it has been used by two researchers in completed Masters

dissertations about Swedish hotel breakfast buffets and Parisian restaurants (Brebán, 2016; Gube, 2016). They add that other researchers are applying this method in the Philippines, USA, Australia, New Zealand and several places in Europe. They consider that the FOODSCALE method has been successful in influencing further academic research in this field.

Table 3 FOODSCALE method – food sustainability indicators & scores
(Goggins, 2016 – see Table 1)

<u>Criteria with scores envisaged under FOODSCALE method</u>	<u>Explanation</u>	<u>FOODSCALE indicator</u>
1. Organic (10 points)	Avoids use of artificial chemical fertilizers and pesticides and reducing antibiotic usage - leads to lower environmental impact	Percentage of total food organic certified
2. Seasonality (5 points)	Fresher/less processed food Facilitates local producers to provide food all year round	Changing menus to suit seasons. Displaying a seasonal food calendar for the region
3. Fairly traded produce (5 points)	Improved well-being for farmers in developing countries	Using fairly traded coffee, tea and bananas
4 Meat (15 points)	Reduced meat consumption benefits human health. It also reduces GHG emissions, and other environmental damage caused by meat production. Meat should be produced with higher animal welfare standards, less intensive farming and fewer antibiotics	Percentage of total food and drink budget spent on meat (distinguish between red and other meat) Percentage of main course dishes containing meat Animal welfare certification for meat products
5. Sustainably sourced seafood (5 points)	Protects against overfishing, catching of non-target species and marine biodiversity loss. Animal welfare concerns associated with intensive aquaculture are addressed.	Seafood sourced from recognized accredited scheme which incorporates sustainability
6. High welfare Eggs (5 points)	Organic and free-range eggs produced to higher animal welfare standard	Type of egg used (e.g. organic, free-range, regular)
7 Water (5 points)	Drinking water is a healthy alternative to sugary drinks And using tap water avoids the environmental impact of bottled water	Source available for customers (e.g. filtered water free of charge, tap water, bottled water only)

8. Reducing Food waste (10 points)	Less food waste reduces environmental impacts and costs for producers, consumers, caterers and intermediaries. Promoted by more efficient management (e.g. stocktaking, ordering, storage)	Staff trained in waste minimization Separate composting for organic material
9. Food origin – local or regional (20 points)	Sourcing food locally/in the region promotes jobs locally. It increases food security and resilience to external shocks in food system. Reduces long-distance food transport and energy used for storage. Protects local food cultures	Provenance of five key foods to local, regional, national or international origin Number of intermediaries between producer and consumer.
10. Consumer engagement (10 points)	Links producers and consumers and educates them about healthy and sustainable foods.	<ul style="list-style-type: none"> • information on nutrition and food provenance on menus • Health/sustainability promotion activities • Customer surveys
11. Engaging with smaller producers and local communities (10 points)	Increasing business opportunities for small producers. Foster relationships between local producers and consumers	<ul style="list-style-type: none"> • Hosting information events (re tendering) for small and local producers • Incorporating specifications into contracts that increase opportunities for smaller and local producers

The work of Kevin Morgan of Cardiff University on sustainable public food procurement has been widely cited. Morgan & Sonnino (2008) is a full length book which links public food procurement and sustainable development. It makes a pioneering attempt to give a global overview, presenting case studies of sustainable food procurement initiatives in four UK local authorities as well as New York City, Rome and developing countries. Morgan has also published several academic articles about public food procurement: Morgan 2006, 2007, 2008 and 2010 and Morgan & Sonnino, (2008), His collaborator Roberta Sonnino has also published several articles (Sonnino, 2009; 2010) and Sonnino & McWilliam (2011). The definitions of sustainable food procurement given in the book and articles are consistent with those found the above-cited works by Goggins & Rau (2015) and Rimmington, Smith & Hawkins (2006).

2.5.2 International comparative studies emphasise the need for more research

Moffat & Thrasher (2016) state that there is a need for more evidence-based knowledge of the benefits of school meal programs around the world. Most academic literature to date has examined meal programs in the UK and USA. With the exception of discussions of school meal programs in Italy, Brazil and Colombia there has been less attention paid to programs located in other parts of Europe and Asia. Botkins & Roe (2018, p.126) observes that

home-grown school feeding (HGSF)... is broadly defined as the promotion of national or more localized agricultural systems through school food programs. HGSF programs are prevalent in developed and developing economies in South America, North America, Sub-Saharan Africa, Asia, and Europe (Espejo et al., 2009). However, little scholarship exists that explores the uptake and efficacy of HGSF programs (Botkins & Roe , 2018, p.126).

The need for more research is reiterated in the comparative studies by Smith et al & Netto & Caldas. Neto and Caldas (2017) is a brief overview derived from a much more detailed study carried out by the EU Joint Research Centre. The article summarises 23 food-related GPP schemes – including eight national schemes, three regional schemes and ten local schemes (of which five have previously been discussed in Smith et al, 2016: Copenhagen; East Ayrshire; Malmo; Rome; Vienna). This article is a factual listing of organisations involved, food products covered and the non-price criteria according to which food procurement are being made: environmental, animal welfare or ethical. The paper suggests that further research is needed to better understand how public authorities use green criteria in their calls for tenders when procuring food products and/or catering services. What do public authorities actually look at – for example – if appraising tenders with regard to environmental benefits or animal welfare. Smith et al. (2016) sums up the work of the EU-funded Foodlinks project. It includes five brief case studies of European cities which devised and implemented innovative approaches to sustainable public sector food procurement. These comprised three capital cities - Copenhagen, Rome and Vienna – a regional capital city, Malmo, and a Scottish municipality, East Ayrshire. All five places saw increased procurement of better quality food – including organic, seasonal and local fresh food. The paper stresses the need

for further research studies to gather empirical data in order to compile an evidence base on the scope and scale of food procurement schemes. This includes the mechanisms employed (what works), the tangible benefits for sustainability and how these are extended and mobilized in the wider society (Smith et al., 2016, p. 255).

Oostindjer, et al. (2017) provides a review of the history and health implications of school meal programs in a cross-national comparative framework. The essay discusses the potential of school meals as a platform to promote healthy and sustainable food behavior. School meal programs are of particular interest for improving public diet because they reach children at a population scale across socio-economic classes and for over a decade of their lives, and because food habits of children are more malleable than those of adults.

The project of integrating school meals with learning healthy and sustainable food behaviors is relatively new, has been implemented in very few cases, and thus has not been extensively studied... it appears that there has not yet been a systematic evaluation of school meals on sustainability. Lack of a clear definition or disagreement on what healthy and sustainable means will be challenging during any attempt to evaluate impact of school meals (Oostindjer et al., 2017, p.22).

2.5.3 Innovative Public Organic Food Procurement for Youth (iPOPY) project

The most detailed international study of public food procurement in Europe was carried out between 2009 and 2011 by an international team of researchers, comparing organic food procurement in schools in Denmark, Finland, Germany, Italy and Norway. The paper compared school food in the five countries using five analytical categories:

(a) Type of school food service. The range here is from a comprehensive service – provision of complete meals in every school – as in Finland and several Italian regions – to extremely limited provision as in Norway. Denmark and Germany have seen a recent growth of school food provision from a low base.

(b) Degree of public financing, from 100% state funding in Finland and considerable public funding in Italy to limited public funding in Denmark and Germany – with meals largely paid for by parents and least of all in Norway.

c) Degree of political and administrative involvement in school food procurement in general. In Finland universal school meals are overseen by national government and

administered locally by municipalities. In Italy certain regions and cities run large-scale school meal systems. In Denmark and Germany school meals are provided by a minority of municipalities – or by individual schools - with little involvement by national government. The least public sector involvement is in Norway.

(d) Degree of specific support for organic school food. This is highest in Denmark and Italy. There is some specific support for organic school food in Finland, less in Germany and very little in Norway.

(e) Availability of organic food supply adapted to school food service. This is highest in Denmark. Next is Italy, followed by Finland and Germany. It is lowest in Norway.

The work carried out by the iPOPY project bears considerable similarities to the research proposed in this thesis. The differences are that this thesis makes a different inter-country comparison - Sweden, Denmark and the UK, explores a wider range of sustainability practices besides organic food and examines in more depth the differences in the approach taken by different local authorities in each of the countries studied. Besides the published academic articles, iPOPY produced a number of reports containing valuable detail. On Denmark – for example – He & Mikkelsen (2009) is a forty eight page report giving a detailed account of developments within three Danish municipalities including transcripts of discussions with three named municipal officials.

2.6 Municipal food procurement strategies

2.6.1 Wider city strategies

Sustainable food procurement policies are very often implemented within wider city strategies aimed at promoting healthy and sustainable food (Marsden & Sonnino, 2012, p.429). Cohen & Ilieva (2015) describe how in New York municipal procurement now encourages regional food purchasing as part of a broader sustainability campaign.

2.6.2 City resources & powers – Sweden & England

Cities' ability to shape healthy and sustainable food policies are of course dependent upon the resources and legal powers which they possess – which are very much affected by national government policies. Swedish cities benefit from being in a country with one of the most de-centralised systems of public administration in Europe. From the late 1970s a process of decentralisation of government functions began in Sweden which involved the devolution of responsibilities to local authorities. “Unlike in England, therefore, in Sweden local authorities have gained in significance in the past 20 years” (Cohen, Moss & Petrie, 2004, p. 33). Hall, Löfgren, & Peters, (2016) presents a study of procurement practices relating to textiles and clothing by procurement officers in Swedish local and regional government. This study concluded that the local outcome of GPP depended on specific local conditions within the city

Political commitment and environmental knowledge, the organizational structure of local government and the local interpretation of the regulatory framework. This study shows that a decentralized structure has possibilities of furthering ambitions of buying green if there are committed politicians and public officials, an optimal level of internal centralisation and an external support structure of knowledge and enabling rules (p. 467).

Alpenberg, Wnuk-Pel & Henebäck (2018) report on a survey of all 290 Swedish local governments which concluded that Swedish local authorities are taking on a key role in promoting environmental goals. Moragues-Faus & Morgan (2015) presents comparative case studies of the third largest Swedish city, Malmo, and a large UK city, Bristol. In Malmo there is an active local government working inside the de-centralised Swedish system which gives local governments considerable power to shape their local areas. It has been able to make considerable changes in terms of introducing sustainable food procurement in the public kitchens within the city (see below para 2.23.8). In Bristol by contrast the article shows how local government's power and influence has shrunk – stripped away by a centralizing national government which has removed money and legal powers from local authorities. Innovative civil society in Bristol is trying to lead an urban healthy and sustainable food agenda but its attempts to influence an increasingly powerless local government are often fruitless.

2.6.3 Reviews of city food strategies

The recent review of city food strategies in thirty seven cities by Sonnino, Tegoni & Cunto (2018) concluded that public procurement was a policy area which was significantly underdeveloped at the urban level – with only fourteen (37%) having introduced public procurement guidelines to promote local, seasonal, organic or Fairtrade food and recyclable packaging in public kitchens. See also Sonnino (2017) on city food strategy documents and Zasada et al. (2017) on metropolitan foodsheds and self sufficiency, comparing London, Berlin, Milan and Rotterdam.

2.6.4 Performance measurement in local government

Kuhlmann (2010) presents a comparative study of performance management in European local governments – comparing the UK with France, Sweden and Germany. In the UK she finds that performance measurement has been imposed by the central government on local authorities in a top-down and highly coercive fashion, with great power to impose penalties. She contrasts this approach with Sweden where the performance measurement movement did not come from central government but from the bottom-up. There is a political culture characterised by freedom of information, a long tradition of evaluation and consensus democracy. Numerous indicators and data relating to the costs and activities of local services are made available through a database run by the local authorities association, enabling inter-municipal comparison over time of costs and performance of municipal services (Kuhlmann, 2010, p. 338).

2.7 Civil society campaigns for healthy and sustainable food

2.7.1 Important role

NGOs/civil society play an important role in campaigning for healthy and sustainable food in public institutions. For involvement of civil society campaigns in local and organic food procurement in Brazil see Blanc & Kledal (2012). In the UK there has been a growth over the last ten years of city food alliances which together form the Sustainable Food Cities movement which campaigns for a common healthy and sustainable food agenda. Sustainable Food Cities brings together civil society and municipal officers and politicians (Moragues-Faus, 2017).

2.7.2 Italian case studies

Galli et al. (2014) provides a case study from Pisa, Italy, of involving civil society and parents in the governance of school meal services, through canteen committees. This reflected public concern over school food quality and unhealthy dietary habits. The same paper describes the role of civil society in the US Farm to School movement. The intentions are to teach students about food by connecting them to local farmers and to help the farmers find new markets. Parents, school administrators, government agencies and environmental organisations seeking to preserve farmland from urban sprawl are all involved. The recent review of the link between child obesity and use of school canteens in Italy, states that in most Italian schools strong parental involvement through school canteen committees which bring together parents, teachers and municipal personnel helps to ensure that the school meals are of an acceptable quality (Decatoldo & Fiore, 2018).

2.7.3 English case studies – Brighton & Bristol

Barnes, Durrant, Kern & MacKerron (2018) describes how the Brighton Food Partnership went about campaigning to transform public food procurement policies

within the city. All catering companies tendering for catering contracts to be awarded by the City Council and larger than £75,000 to were required to apply for Bronze Catering Mark within the first year of the contract.

By September 2015 four contracts with a value over £75,000 were achieving this standard, whilst all meals served by local primary and special schools (approximately 6000 per day) were reaching the Silver Catering Mark standard (p.8).

This policy change by the City Council was the result of lengthy lobbying by the Brighton & Hove Food Partnership after it was established in 2003. The Food Partnership brought together all the existing catering contractors holding City Council contracts with key council staff from procurement, planning and sustainability teams. A consensus was achieved about the need to introduce Catering Mark within all catering contracts awarded by the City Council. A cautionary note is however introduced by Reed & Keech (2017). The sustainable food networks of Bristol – urban groups and business associations – have influenced municipal strategies. However the activism of these movements has had limited success because English cities have little control over the structure of food provision.

2.7.4 Award schemes

The role of award schemes in promoting sustainable behaviour is not widely discussed in academic literature. Coulson & Sonnino (2018, p.7) point out that the criteria of national schemes such as Sustainable Food Cities Award in the UK which started up in southern England may not be appropriate to recognise achievements by people in other regions who may have made substantial forward steps in their own terms but do not meet the minimum criteria for an award. Van der Heijden (2016) discusses low carbon city initiatives in Australia and the the USA as examples of “experimental governance” – developing new ways of dealing with societal problems. He highlights the failure of the award schemes he studied to make a significant impact on energy reduction or attract more than a relatively few organisations who were already leaders in the field.

2.8 Promoting Organic Food

2.8.1 Benefits and consumer views

The worldwide increase in organic food sales has been accompanied by a proliferation of academic articles about organic agriculture and organic food. A search of science direct for research articles with the words “organic food” health produced 2,110 results (11th August 2018). The numbers of articles published every year rose steadily over time. From 25 in the year 2000 to 50 in 2005, 95 in 2010, 191 in 2015 and 255 in 2018. A search using the words “organic food” consumer yielded even more results - 3,504. A science direct search also showed a very large number of studies relating to surveys of individual consumers – examining why they were increasing organic purchases.

There has been an academic debate as to whether organic food is better than conventional – taking into account impacts of organic food on animal welfare and biodiversity and the argument that organic food is of higher nutritive quality than conventional food. There is widespread agreement that organic farming produces yields per hectare which are lower than conventional farming – the question is how much lower and what are the factors affecting yields. For a meta-analysis of yields and a discussion of the issues around predicting differences between organic and conventional farming yields see De Ponti , Rijk, & Van Ittersum (2012). It has been argued that despite lower yields the world could still be fed by organic agriculture by reducing food waste and healthier diets – with less meat and dairy – see Seufert, Mehrabi, Gabriel & Benton (2019, p.446). Goded,et al. (2018) summarises the extent to which organic farming may enhance biodiversity . Mie et al. (2017, p.1) reports on a comprehensive review of the human health implications of organic food and organic agriculture, which summarises existing evidence. It concludes that organic food consumption may reduce the risk of allergic disease and of overweight and obesity but the evidence is not conclusive. Epidemiological studies have reported adverse effects of certain pesticides on children’s cognitive development and the restricted usage of pesticides in organic agriculture may consequently be beneficial to children who are fed organic foods. Popa et al. (2018) assesses studies comparing organic food

products and conventional ones as regards nutritional quality. There are some studies suggesting organic food is better but more research is needed to reach firmer conclusions about this. Recent studies by Apaolaza, Hartmann, D'Souza & López (2018) and Olson (2018) show that many organic consumers are strongly attached to their belief that organic food is better for their health and likely to disregard any contrary evidence.

2.8.2 Organic food and Carbon Footprint

Until recently there has been almost no academic research comparing the carbon footprint of organic food with conventional food. Treu et al. (2017) reports on a comparison of the carbon footprints and land use of organic diets, which had not previously been quantified for Germany. The research concluded that the carbon footprints of the average conventional and organic diets were essentially equal (ca. 1250 CO₂-eq cap⁻¹ year⁻¹), while the land use to provide food was ca. 40% greater in the organic diet. The average conventional diet contained 45% more meat than the average organic diet, which on the other hand contained 40% more vegetables, fruits, and legumes (combined). Animal-based food products dominated the carbon footprints and land use (ca. 70-75%) in both diets. The organic diet, in particular that of women, was more aligned with health-based dietary guidelines. Diet-related carbon footprints and land use could be reduced by shifting toward diets with less animal-based food products.

2.8.3 Productivity of organic agriculture

A study for the Nordic Council of Ministers by leading Nordic academics presents two food system scenarios for Denmark, Finland, Norway and Sweden, where the majority of food is produced within the region using organic farming and livestock is mainly fed on grass and by-products not suitable for human consumption.

The results show that we could feed the projected Nordic population in 2030 on organic food, mostly grown within the region, while reducing the climate and nitrogen footprints of our food system.

Meat consumption fell by 8—90 per cent, substituted by cereals, legumes and vegetables. Food waste was reduced by half (Nordic Council of Ministers, 2018b, pp 6-7). There are academics who support this conclusion – such as Muller et al. (2017) who make similar assumptions that it will be possible to make drastic reductions in food wastage and production and consumption of animal products. Other academics take a very different stance. David Connor declared recently that

Persistent claims over the past decade that transformation of world agriculture to organic methods could feed the world have been grossly overoptimistic because they have used faulty methodology (Connor, 2018, p. 128).

2.8.4 Organic food and public procurement

There have been three countries where academics provide detailed discussion of the introduction of organic food into public kitchens: Denmark, Finland and Italy. (In Finland and Italy local authorities have frequently sought to source food which is both local and organic.) Other countries where this topic has been discussed in academic literature but where coverage has been very limited are Sweden, the UK, Germany, Brazil and USA.

2.8.4a Denmark

Danish academic literature is summarised in 2.21 below. It provides the most detailed discussion of the process of organic conversion – whereby public kitchens change over from conventional to organic food, in a process whereby the choice of ingredients, recipes and cooking methods is systematically rethought with a view to achieving this change at minimum cost and with maximum benefit to the people eating the food. This process took place in Copenhagen and other Danish cities between around 2000 and 2016.

2.8.4b Finland

Risku-Norja, & Løes,, (2017) provide a comprehensive overview of policies relating to adoption of organic and local foods in public kitchens in Finland. Hitherto the level of organic has been much less than in Denmark or Sweden. However since 2010 government has encouraged increased consumption of organic food generally and in public catering. Government guidance presents local, organic, seasonal and vegetarian as options to promote sustainability. The goal was defined that by 2010, 5% (one meal per month) and by 2015, 15% (one meal per week) of public meals should be based on local, organic, vegetarian or seasonal raw materials.

In 2003 the training agency Ekocentria commenced Steps to Organic, which is a voluntary training program helping professional kitchens increase use of organic. By 2015 Steps to Organic kitchens comprised 8 % of all professional kitchens and 20 % of public kitchens. About 5% of food in public kitchens was now organic, compared to 1.6% in the retail market (Risku-Norja & Løes, 2017, p.120). When organic products were introduced in schools and nurseries, the most important reason was the benefit to children's health from pesticide-free food, which parents supported. With continued use, taste ethical and sustainability issues became increasingly important in justifying the use of organic products. Nuutila, Risku-Norja & Arolaakso, (2018) describe an experiment where school menus were modified to increase the percentage of organic ingredients without increasing costs. By reducing the share of the most expensive ingredients – red meat and poultry - it was possible to achieve a 20% organic menu without increasing overall ingredient costs.

2.8.4c Italy

Loes & Nolting (2009) state that Italy was the pioneer in Europe in using organic and local food in school meals and attribute this to high awareness of environmental problems and strong food culture and traditions (Loes & Nolting, 2009, p. 649). Morgan & Sonnino (2008, pp. 65-88) provides a detailed overview of government policies promoting organic and local food in school meals – focussing particularly on

school meals in Rome. Experiments with improving the quality of school meals and introducing organic food led to legislation in December 1999 – Finance Law 488 – which envisaged that school and hospital canteens would provide organic food as well as local and traditional products (Morgan & Sonnino, 2008, p. 69). In 2008, the National Action Plan on GPP required minimum percentages of organic food and of food having other quality labels (e.g. Protected Designation of Origin – PDO, Protected Geographical Indication – PGI) in public food procurement of food - 60% for vegetables and fruit; 40% for meat; and 20% for fish (Soldi, 2018, pp. 11-13).

Filippini et al. (2018) reports on a survey of the public food procurement system in 524 of the 1554 municipalities of Lombardy in Northern Italy. The results showed that the initial introduction of organic food correlated with higher population density. In other words the larger cities were more likely to introduce it than smaller towns. It also correlated with the presence of bigger farms in the area. It strongly depended on pressure from municipal administrations and canteen committees demanding greater environmental sustainability and pesticide-free and therefore healthier food for children. The introduction of organic food was often driven by the initiative of catering service management. It also took into account municipal policies to support local food production and purchase products with certified origin (which would be produced locally). The adoption of organic food was found to be pursued more intensely when food procurement was being carried out by private catering contractors and there was strong pressure from stakeholders – such as canteen committees.

2.8.4d Sweden

There have been only very brief references in academic literature to the process of organic conversion in Swedish public kitchens – see below 2.23.3 to 2.23.8. There is a definite gap in the literature considering that Sweden has seen a sustained and successful large-scale effort to increase the percentage of organic food in public kitchens (See below 3.2.4-3.2.15).

2.8.4.e UK

There has been very limited discussion in academic literature of efforts to increase the percentage of organic food in UK public kitchens (See below 2.20.3; 2.20.5). This also is a gap in the literature considering there have been sustained efforts to promote organic food in public kitchens under the Food for Life scheme (see below 3.4.11).

2.8.4f Germany

There has been little academic discussion of school food policies within Germany (Lülfes-Baden & Spiller 2009; Løes & Nölting, 2011). There has been a small amount of coverage of initiatives aiming to introduce organic food. Strassner, Noelting, & Reimann (2009) examined school food in the federal states of Berlin and North Rhine-Westphalia and described how these were support for introducing organic food – particularly in Berlin with the launch of quality criteria for primary school meal provision, which recommended 10% organic food. . Some Berlin districts planned an increase to 20% organic and one district envisaged 30% organic. Rolf & Strassner (2010) describes research on school meals in Lower Saxony, focussing particularly on organic food and sustainability. The standard of school meals was not high – due to small budgets, time constraints and lack of experience, little organic food was provided and the tenders did not require adherence to existing quality standards. School inspections did not look at school meal quality.

2.8.4g USA

In the USA the emphasis within Farm to School has been very largely on purchasing non-organic food. There are a few references to purchasing of organic food – as in Motta & Sharma (2016, p.83) and Lyson (2016, p.26).

2.8.4h Brazil

The program regulations promoted inclusion of organic food in school meals but in practice small farmers usually lacked the resources to obtain organic certification and the amount of organic food being purchased was very limited (Soares et al. , 2017, p.291).

2.8.5 Organic and local procurement

The examples given above of procurement policies in Finland and Italy show that they encouraged procurement staff to source both organic and local food (2.8.4b; 2.8.4c) There may however be a conflict between buying locally and buying organic. This is pointed out by Smith et al. (2016, p. 255) who emphasises that a Green Procurement approach – one which gives sole priority to environmental benefit – may lead to the sourcing of imported organic food through central suppliers, whereas a Sustainable Procurement approach – which also takes into account social and economic benefits – may lead the public body to give priority to sourcing conventional food from local suppliers. A similar point is made by Rimmington, Smith & Hawkins (2006, p. 827). Post & Mikkola (2012) refer to procurement professionals who prefer to give conventionally grown local food preference over organic food.

2.8.6 Organic food concentrated in cities

In many countries organic food consumption is concentrated in cities. This is the case in Russia, India and China (Nesterenko & Shagalkina, 2019; Wang, Li, Zhang & Su, 2019; Basha & Lal, 2019). Pekala (2020) shows that this is true of Denmark, Finland, Latvia, Lithuania and Estonia (pp. 20, 96, 106, 113). Filippini, De Noni, Corsi, Spigarolo & Bocchi (2018, p.116) suggests that

urbanized areas are more prone to introduce organic food and to intensify the provision. This is consistent with the literature on consumer behavior that indicates the higher propensity to buy organic food for urban dwellers ...the physical distance between urban consumers and producers results in a lack of personal trust between the food demanders and food producers, thus leading urban consumers to buy more trustable food, such as certified organic food.

2.9 Supporting local/regional food suppliers

2.9.1 Engaging small producers in public procurement is “critical, difficult and under-studied”

Rimmington points out that not every public authority wants to buy from small producers. For many public authorities

opening the door to small producers mean losing the economies of scale that make food accessible at a lower cost and also some of the environmental benefits of efficient multiple drop distribution (Rimmington, Smith & Hawkins, 2006, p. 827).

Nonetheless a large number of public authorities have procurement policies with a declared aim of opening up opportunities to smaller local suppliers – often referred to as Small & Medium Enterprises (SMEs). The recent study by Harland, Callender, Grimm, & Patrucco (2019, p.2) observes that engaging “small business in public procurement is critical, difficult and understudied”. This reinforces earlier studies which reached the same conclusion as to this research gap (McKevitt & Davis , 2014, p.559, Flynn & Davis, 2016b, pp.616-617 and Loader, 2013, p.39). Flynn & Davis (2016a, p.559) reports on a survey of 436 public buyers in Ireland.

Compliance is high on measures including open tendering, provision of feedback and self-declaring financial capacity, but low on measures that impose higher transaction costs, such as dividing contracts into lots and encouraging consortium bidding.

Flynn & Davis (2017) concludes that Small & Medium Enterprises (SMEs) do better in public procurement if they have invested in tendering capabilities and devised buyer engagement strategies. Public sector organisations and enterprise support agencies can play their part through better communication with SME suppliers and provision of targeted training programmes. The need for provision of information and advice to

SMEs to encourage them to participate in public procurement is further supported by Woldenbeset & Worthington (2018). McKevitt & Davis (2014, p.551) have extended the limited literature on supplier development by public buyers, stressing the importance of informal buyer-supplier interaction in public procurement. Within the EU public procurement regulations buyers are permitted to conduct market research and talk informally to potential suppliers prior to issuance of the formal tender (McKevitt & Davis, 2015, p. 79). Below a certain threshold public bodies are permitted to carry out procurement without a tender – often referred to as “direct procurement” (Morgan & Sonnino, 2008). Buyer-supplier interaction is not constrained by the EU tender rules. (For more on these rules see European Commission, 2018).

2.9.2 Scale of procurement – implications for SMEs

At one extreme it is possible for a government to mandate that procurement should take place through large national contracts. In Brazil for many years procurement of food for school meals took place through national contracts, which excluded small local suppliers. Quality of food was often poor. After the restoration of democracy following decades of military dictatorship Brazil decentralised various state functions, including the provision of school meals. In 1994, Law 8913 transferred to municipal governments the responsibility of organizing daily menus, purchasing the ingredients, performing quality control and monitoring the use of resources through the operation of School Nutrition Councils, which were designed to enhance parent, teacher and civil society participation in school food policies (Sonnino, Torres & Schneider, 2014). Within the EU new public procurement regulations have been adopted which are aimed at giving small food producers and SMEs more opportunities to access public sector food procurement contracts:

simplified rules and procedures should enable public authorities to use more contract ‘lotting’ – where large contracts for food commodities are divided into more manageable lots that make tendering a possibility for SMEs (Smith et al (2016, p. 251).

The 2014 EU Public Procurement Directives require procuring entities to explain why they opt out of structuring a contract whose value exceeds €500,000 into lots in this way. Nicholas & Fruhmann (2014, p.342) observed that while

the use of procurement procedures that allow for partial offers coupled with appropriate selection of lot sizes might theoretically enhance SME opportunities... there is little evidence of this in practice.

Glas & Eßig (2018) investigated Bundeswehr procurement spending to test the widely accepted assumption that SMEs have a better chance of being awarded smaller contracts. Data from 380 contract award files showed that a higher number of lots in a tender did not significantly increase the success rate of SMEs. Other factors, including the type of public procurement procedure, the number of participating companies and the overall tender volume, significantly influenced SME success. They argue the need for more research on SME participation in public tendering and the causes for underrepresentation of SMEs:

theoretical discussions are still few and the empirical discourse is limited to a few studies ...The theoretical gap with regard to the underrepresentation of SMEs in public procurement is surprising (Glas & Eßig, 2018, p.66).

2.9.3 Logistical solutions to support local food producers

Small food suppliers everywhere face the logistical challenge of delivering food to a large number of different outlets - schools, hospitals, restaurants or shops. A widespread development within the USA and Canada has been the creation of local or regional food hubs to address the distribution problems faced by small suppliers (Mount, 2012; Izumi, Wright & Hamm, 2010b; Motzer, 2018; USDA, 2019). Blay-Palmer, Landman, Knezevic, & Hayhurst (2013) define

food hubs as networks and intersections of grassroots, community-based organisations and individuals that work together to build increasingly socially just, economically robust and ecologically sound food systems that connect farmers with consumers as directly as possible.. Economically robust means the food system keeps as much money as possible in local economies, provides a living to farmers and food that is economically accessible (p. 524)

Kuhmonen (2017) identifies local food hubs – linked to public food procurement – as examples of alternative modern food systems – promoting economic, social and environmental sustainability. Swedish academic literature describes the establishment

of city logistics initiatives/urban consolidation centres. These are typically established by municipalities and intended to provide a co-ordinated distribution service for food and often other goods required for local authority schools, nurseries, elderly care and other facilities. They thereby reduce environmental impact by reducing the number of vehicle movements and they may have the effect of assisting small suppliers to access public markets. See below “Sweden” section 2.23.10.

Björklund, & Johansson, H. (2018) report on a review of literature relating to urban consolidation centres and set out a future research agenda.

Urban consolidation centre (UCC) is a popular initiative targeting the challenge of negative environmental and social impacts from freight transports in cities. Despite this, UCC often fails in practice, which indicates a knowledge gap. Furthermore, research within the field can be described as fragmented, transdisciplinary and fast growing. ...Despite substantial research on UCC, very little research ends up in academic journals.... although environmental and social arguments are often applied to justify the implementation of UCCs, few studies measure or evaluate their impact (p. 745).

In Denmark there have been attempts to reduce the volume of urban freight congestion by setting up city logistics centres – in which the municipality could be a major stakeholder. Gammelgaard (2015) describes the early history of the Citylogistick centre in Copenhagen which after several years of discussion within the city had still not been launched at the time of writing. In the UK academic literature shows several instances where small food producers have been assisted to access public food procurement opportunities through provision of logistical assistance by a specialist transport contractor - see 2.20 below: Morgan & Sonnino (2008); Levidow and Psarikidou (2011).

The knowledge gap which the research would address is to assess the extent to which co-ordinated distribution arrangements have been established in the three countries and to evaluate their impact.

2.9.4 Role of food wholesalers– relationship to local food sourcing

A contrast can be drawn between large national food wholesalers who seek to provide food at the lowest possible price and source worldwide and smaller regional wholesalers who may be more attuned to supplying local food. The case study of the small Swedish municipality of Klippan (Knutsson & Thomasson, 2014; see below 2.23.8) illustrates how a municipality has to contend with the market power of national food wholesalers, who are also prone to launch legal challenges against procurement decisions which run counter to their interests. Hockerts & Wusthagen (2010) describe how in the early stages of an industry's sustainability transformation, new entrants ("Emerging Davids") are more likely than incumbents to pursue sustainability-related opportunities. Incumbents will eventually react to the activities of the new entrants by engaging in their own corporate sustainable entrepreneurship activities. The "Greening Goliaths" are often less ambitious in their environmental and social goals but may have a broader reach due to their established market presence. Izumi, Wright, & Hamm (2010b) highlights the role of regionally-based food distributors in supporting the growth of Farm to school programs in the USA. Through their strong relationships with local farmers, these distributors can assist schools with expanding local food procurement.

2.9.5 Dynamic Purchasing (Procurement) Systems

The concept of a Dynamic Purchasing System (DPS) was introduced into the EU procurement regime with the 2004 EU procurement directives. DPS was defined as an online process for making commonly used purchases which was open throughout its validity to any suitable supplier. DPS had potential for providing better value through encouraging smaller suppliers to enter the market. By contrast conventional tender processes selected a supplier and awarded a contract for a period of years, excluding all other suppliers (Özbilgin & Imamoğlu, 2011). Eyo (2017) has evaluated UK usage of DPS. He concluded that DPS was gradually becoming more popular in UK public

procurement, purchasing large quantities of low value items in social care, special education and minor building works.

2.9.6 Local and global food chains – sustainability debated

O'Neill (2014) summarises academic discussions about local food systems. They are seen as an important means to revive lagging rural economics. There have been numerous policy interventions at different scales – local, sub-regional, regional, national and EU – and considerable academic research. She concludes however that this subject is still poorly understood – as to the capacity of different places to develop local food systems and how policy makers can support them and how they can promote sustainable rural development. Sonnino & McWilliam (2011, p.823) sum up the academic debate about local food and public procurement

Re-localization, in particular, has often been seen as a crucial strategy to create food systems that promote democracy, environmental integrity and more equitable forms of economic development – the main objectives of sustainable development ... Central to this argument is the idea that local food systems curb the energy and pollution costs associated with the transportation of food (i.e., “food miles”), foster relationships of trust between producers and consumers, and enhance human health by emphasizing freshness and seasonality).

However they point to recent studies which question whether food re-localisation is the key to a more sustainable food system. It may bolster a rural elite. It may reduce food miles but lead to unsustainable pressures on local water or energy resources. There is a need for a comprehensive approach to assessing sustainability of food systems, examining product life cycles. Schmitt et al. (2017) compares the results of sustainability assessments for 14 local and global food products in four sectors – bread, cheese, pork and wine - within four European countries (Italy, UK, Switzerland, France). The paper concluded that overall global products consistently came last in terms of sustainability. Global products were considerably cheaper and the greater distance travelled was outweighed by scale economies which resulted in lower GHG emissions. This finding undermined the “food miles” argument. However local products scored well on nutrition, biodiversity, information and communication, creation and distribution of added value, territoriality, resilience, animal welfare and governance - the degree to which the supply chain was controlled by the food

producers. There are few detailed case studies of how local food procurement actually works in practice. Bui, Cardona, Lamine & Cerf (2016) describes Agricourt, a successful community procurement platform for local and/or organic products founded in 2009 by a group of parents in the Drôme valley in France with public grant assistance. The intention was to buy local fresh food for school canteens instead of factory-made meals. Food waste should reduce if pupils were given tasty, better quality, seasonal food. Agricourt now sells to around 40 schools, nurseries and local purchasing groups, with food mainly supplied by 36 local producers – small farmers who are given an adequate price for their produce (Bui et al, 2016, p.95). Objectives have been extended to include support for setting up of new farms- aiming to encourage younger people to enter farming.

2.9.7 Obstacles to purchasing local food

Studies from Finland, Germany, USA and Brazil discuss obstacles to public procurement of food from local suppliers.

2.9.7a Finland

Risku-Norja & Loes (2017) concluded that expanding organic and local food in public kitchens was a slow process, dependent upon sustained support from local policy-makers. Municipal customers were important for SMEs, providing secure income and encouraging new food supplier. Both businesses and municipal purchasers needed to understand how to use public procurement procedures. Procurement staff needed to resist pressure to only buy the cheapest food and to understand how local suppliers could be encouraged within EU procurement legislation.

Muukka et al, (2008) reports on a survey of municipal food procurement which showed that there were severe practical problems regarding the uneven availability of organic and local food and the low availability of appropriate processed products, in volumes and qualities adapted to catering.

Availability and delivery problems were considerable in sparsely-populated Finland, Organic producers were often SMEs, producing in small volume. Hence the use of organic products was more common in smaller kitchens (Risku-Norja & Loes, 2017, p.120). Mutual co-operation among SME food suppliers was desirable to secure continuous supply and overcome logistic problems. Lehtinen (2016) described the procurement practices of institutional kitchens. She highlighted the operational and logistics factors that constricted the use of local food suppliers. She concluded that deeper co-operation was needed between institutional kitchens and the local producers so that they could better respond to market demands and provide lower transportation costs, short delivery times and delivery flexibility.

Korhonen, Kotavaara, Muilu & Rusanen (2017) studied widely scattered local berry producers seeking access to regional markets. Small-scale local food producers struggled to produce volumes necessary to enter large-scale food markets, where distribution was organised by centralised, large-scale logistics companies. Korhonen analysed potential for networking of local food production and transport companies to overcome volume and logistical challenges. Korhonen was inspired by research carried out in Sweden by Bosona & Gebresenbet (2011) who investigated local food supply networks with computational help and identified suitable central locations for local food clusters with shared distribution arrangements.

2.9.7b Germany

There are two studies of potential and limitations of regional supply of organic food in the Berlin-Brandenburg region. Doernberg et al (2016) carried out a qualitative case study with two different types of alternative food networks: organic community supported agriculture and organic retail trade. Demand for regional organic food was higher than regional supply, which offered good possibilities for organic farmers. However, organic farmers seeking to supply this demand needed to overcome obstacles, including limited access to land, increasing rentals, insufficient processing capacity and an unsupportive political environment for organic farming. Braun et al. (2018) investigated purchasing of organic vegetables by school catering in the Berlin-Brandenburg region. The paper concluded that while organic food was important in

school catering in Berlin, there was little purchasing of locally produced organic vegetables and this was attributable to insufficient supply from local producers, who needed assistance with infrastructure such as pre-processing facilities to access the school catering market.

2.9.7c USA

Motta & Sharma (2016) reports on a survey of food service directors in a North Eastern state with regard to purchasing of local food – including local organic food. The main obstacle to purchasing locally produced food was lack of year-round availability of the products required. See also Izumi, Wright & Hamm, 2010a for an earlier discussion of problems of small producers with providing the volume, variety and regularity of products required for school kitchens and the logistical challenge of delivery of food to schools. Recent farmer surveys illustrate the problems of farmers who wish to sell fruit and vegetables to local school districts. Lehnerd et al. (2018) found that the major obstacles included schools paying too little, volume needs of schools were too large, the tendering process was disliked and seasonal availability of products did not match the school year. F2S adopters did derive benefits – 50 per cent reported overall farm income increasing some or greatly. Watson, Treadwell, & Bucklin (2018) highlighted how local fruit and vegetable farmers lacked facilities to aggregate and store products as well as equipment to minimally process products to prepare them for school kitchens. The paper recommended that farmers should be given grant for capital equipment. The paper also stressed the logistical challenges facing small local producers seeking to sell their food to schools. Farmers should be encouraged to pool their resources to serve schools and other public markets.

2.9.7d Brazil

National government policy since 1996 encouraged purchasing of non-processed, local and seasonal foods for school meals (Sonnino et al., 2014) . In 2009, a new law obliged all municipalities to spend at least 30 per cent of their food budget on local produce purchased directly from small-scale farmers (Otsuki, 2011a and 2011b).

Soares et al. (2017) examined the effect of new school feeding program purchase criteria on the quantity, variety and origin of food products bought by a municipality for school meals. The paper concluded that new procurement criteria encouraging direct purchase from family farms resulted in an increase in the variety and quantity of healthy foods in the schools, with more legumes and vegetables bought and fewer high sugar foods. However the overall percentage of food supplied by family farms rose only slightly – from 36 to 39 per cent.

Wittman & Blesh (2017) described how the Fome Zero (Zero Hunger) social welfare programme linked public nutrition and rural development initiatives through public procurement from family farms. The paper assessed the experience in seven municipalities of land reform beneficiaries who were contracted to produce food for public procurement, particularly school meals. Overall the programme had benefitted many small farmers but there were problems and limitations. Better capitalized farmers derived most benefit. Small farmers lacked money to invest. Rural roads were poor and transporting food to schools could be challenging. School cooks sometimes opposed taking extra time to prepare meals using fresh fruit and vegetables.

2.9.8 Geographical distribution of local food procurement initiatives

The most intensive studies of the geographical distribution of local food procurement initiatives have been two studies relating to the USA. Lyson (2016) discusses the factors affecting very substantial state level differences in participation in Farm to School (F2S) programmes – the sourcing of local food for school meals. She concluded that state affluence and the average F2S rate of neighbouring states were the most significant, positive predictors of state-level farm to school rate. She emphasized the important role of NGOs in promoting F2S and stressed that such NGOs were best developed in affluent states with liberal political ideology, particularly a group of adjoining states in the northeastern USA. State political ideology was a potentially relevant factor in determining F2S participation given that progressive,

local, food practices and policies have long been championed by liberal democrats as opposed to republicans, who have been aligned with industrial agriculture sector ,producing processed, pre-packaged foods (Lyson, 2016, p.28). Lyson advocated further research into state-level factors which determined F2S activity and for research which compared U.S. school food policy and reform efforts with other countries. Botkins, & Roe (2018) report on a path-breaking analysis of factors associated with school district F2S participation. A study of F2S participation by school district concluded that the most important supply side and community factors associated with school districts' F2S decisions were three measures of consumer interest in local food - numbers of farms selling directly to consumers, number of farmers markets per thousand population and the establishment of a food hub within the county plus the proximity of adjoining school districts which had already adopted F2S programs (Botkins & Roe, 2018).

2.10 Safeguarding animal welfare and bio-diversity

2.10.1 In this section

In this section we discuss four dimensions of public procurement. The purchasing of free range eggs is a very important animal welfare issue. Farm animal welfare legislation mandates minimum welfare levels for cattle, sheep, pigs and other farm animals. EU law specifies minimum standards but member states can prescribe higher levels. The purchasing of sustainable fish aims to conserve fish stocks for the benefit of future generations. The purchasing of sustainable palm oil aims to minimise the biodiversity loss from destruction of rain forests. It should of course also be borne in mind that purchasing of organic food – discussed above – promotes a form of agriculture with the best performance on animal welfare and biodiversity.

2.10.2 Free range Eggs

Conventional battery cages were prohibited throughout the European Union from 1st January 2012 (Scott et al, 2018). The permitted chicken accommodation options are “enriched cages”, barns or free range. Mench & Rodenburg (2018) summarises the differences between these approaches. Enriched cages are larger and contain perches, a nesting area and often a scratching area. Barns provide hens with greater freedom of movement. Free range hens are given outdoor access to pasture during the day. They may be classified as organic if they meet organic standards for provision of organic feed and restrictions on permitted medicines. Organic standards in the UK and EU require that the hens have access to outdoor space with soil and vegetation. It is generally assumed that this provides hens with a better quality of life. The review by Holt (2021) questions these policies - suggesting that free range hens may be more exposed to pathogens, predators and aggression by other hens and may ingest dangerous amounts of dioxins from contaminated soil.

Newberry (2017) provides an international overview of commercial free range egg production practices. Based on International Egg Commission data it shows the top twenty countries reporting free range egg production. Switzerland has nearly 70 per cent free range eggs. The UK has the second highest percentage with 46% free range in 2013, 8 percentage points higher than the 2008 figure. . Denmark also scores highly – with 22.6 % in 2008 and 25% in 2013. Sweden reported a zero figure in 2008 but by 2013 it reported 12.3%, (These figures can be seen in a bar chart in Newberry, 2017, Figure 9.1. Thanks also to Ruth Newberry for supplying the absolute figures in an email dated 2 January 2019). Windhorst (2017, Table 6) provides 2015 statistics for organic and free range egg production in EU countries. It shows that 26.3 % of eggs in Denmark were organic and 16.1% in Sweden. It would appear that almost all free range eggs in these two countries are also organic. In the UK however by 2015 49.9 % of eggs were free range but only around 5% were organic (Windhorst, 2017, Table 5). Windhorst (2017, p.17) notes that there is little international trade in eggs within Europe, while there is extensive international trade in poultry meat. There are brief references to public procurement of free range eggs in UK academic literature about Food For Life (Brindley & Oxborrow, 2013 Morgan, 2020).

2.10.3 Farming cattle, sheep and pigs

Farm animal welfare laws in the European Union are passed by national governments. They have to comply with minimum standards stipulated by European Union directives. UK, Sweden and Norway have imposed significantly stricter animal welfare measures in their national laws compared to other EU countries. In addition countries may introduce industry-based quality assurance schemes covering animal welfare and food safety (Lagerkvist & Hess 2010, p.56). The principal UK scheme is Red Tractor (Cook, 2018). Public procurers in a country where national standards are stricter than EU standards have to consider whether they should specify national standards or the equivalent in food procurement or accept food meeting the standards of any EU state.

2.10.4 Sustainable Fish

2.10.4a Marine Stewardship Council (MSC)

Gulbrandsen (2009) describes the emergence and effectiveness of the Marine Stewardship Council as a leading wild-capture fisheries certification program. The MSC logo has become a familiar sight, shown on tins of fish on supermarket shelves – certifying that the fish are sustainably sourced. In principle, to become certified by the MSC, the fishery must show that it meets three core principles: (1) it supports sustainable fish stocks; (2) it minimizes impacts on the surrounding ecosystem and (3) effective, legally based management measures that maintain stock sustainability are in place. Fisheries are assessed by third party certifiers, and once certified, audited annually and reassessed every 5 years. A certified fishery can apply to use the MSC ecolabel on its seafood products. All parties, including buyers, dealers, distributors, and retailers, that wish to use the MSC ecolabel must complete a chain of custody audit in which they are required to track MSC products and ensure that they can be traced back to a certified fishery. A fishery can lose certification if failing to keep up standards (Goyert et al., 2010). Nonetheless Gulbrandsen (2009, p.654) reaches the downbeat conclusion that “fisheries certification alone is unlikely to arrest the decline

of fish stocks”, overfishing and resultant environmental harm. Christian et al (2013) analyses nineteen formal objections submitted by conservation organisations to MSC certifications, of which one was upheld. He concludes that the MSC is too lenient and permits unsustainable exploitation of fish stocks and the MSC label may be misleading both consumers and conservation funders (Christian et al, 2013, p.10).

2.10.4b Land-based fish farming

With continued serious pressure on wild fish stocks, there has been a widespread growth of fish farming (aquaculture) throughout the world – including in Europe. There have been major concerns about the environmental impacts of sea-based aquaculture. On Norwegian salmon farms – for example – see Holmen, Utne & Haugen, 2018. Innovative recirculating aquaculture systems have been developed which potentially make intensive fish production compatible with environmental sustainability – water usage is reduced and waste management and nutrient recycling are improved. Such systems can be land-based and may be combined with vegetable growing operations – so that the waste water from fish production is used to fertilise the vegetables (Graber & Junge, 2008, p. 147). Martins et al 2010 reviews the development of recirculating aquaculture systems in Europe and estimates tonnages of fish being produced in different European countries. The highest production was in Denmark and the Netherlands with 12,000 and 9,680 metric tonnes respectively in 2009. Sweden was well behind with 780 and the UK produced only 100 metric tonnes.

2.10.4c Public Procurement of fish

There are brief references to public procurement of MSC-labelled fish in articles about Food For Life accredited catering in the UK (Brindley & Oxborrow, 2013 ;Morgan, 2020). Urquhart & Acott (2013) describe a coastal fishery in Cornwall and suggest that more localised public procurement policies could give fishermen an increased return on their catch, enabling them to catch less fish for the same level of income. Bianchini, Muzzini & Pagliarino (2010) describe an Italian pilot project for serving trout produced through aquaculture in a public sector canteen.

2.10.5 Sustainable Palm Oil?

Palm oil is one of the world's most rapidly expanding food crops and used extensively as an ingredient for numerous food products. It is also used in biodiesel, animal feed, soaps and cosmetics. Its production has been linked to rainforest destruction in Indonesia, Malaysia and Thailand, and it is a rising source of GHG emissions from forests clearance (Schouten & Glasbergen, 2011; Edward & Laurance, 2012). With rising demand for vegetable oils, substantial biodiversity losses will only be averted if future oil palm expansion is managed to avoid deforestation. The Roundtable on Sustainable Palm Oil has been established which has developed a set of environmental and social criteria for producers. The RSPO has been the subject of continuing criticism for not being effective in safeguarding biodiversity (Laurance et al., 2010). Ruyschaert & Salles (2014) condemn RSPO ineffectiveness in protecting orangutan habitats. Ostfeld, Howarth, Reiner & Krasny (2019) argue that banning palm oil is not practicable because it is so much more cost effective than other vegetable oils. It recommends that governments should require manufacturers and retailers to purchase only verifiably sustainable and traceable palm oil.

2.10.6 Brazilian beef

Brazil is a major international exporter of beef, with substantial amounts being exported to Europe – although these amount to less than 10 per cent of total exports (USDA, 2018). Environmental concerns about Brazilian beef focus on the link between expansion of beef production and destruction of vulnerable wildlife habitats – particularly the Amazon rainforest and Cerrado (Persson, Henders & Cederberg, 2014; Fearnside, 2017). However some Brazilian beef may be produced under more environmentally friendly conditions (Da Silva, Ruviano & Filho, 2017).

2.11 Promoting decent working conditions among suppliers

2.11.1 Fairtrade

Fairtrade refers to the movement to secure better prices, decent working conditions, local sustainability and fair terms of trade for farmers and workers in the developing world. Food products such as bananas, pineapples, sugar, tea, coffee, chocolate and cocoa can be awarded the Fairtrade label if they meet certain minimum standards. The Fairtrade movement aims to support smallholder farmers with fair prices and also to improve worker conditions in plantation agriculture. A 2014 literature review in the 'Journal of Economic Perspectives' concluded that Fairtrade does achieve many of its intended goals, although on a comparatively modest scale relative to the size of national economies (Dragusanu, Giovannucci & Nunn, 2014, p.233). A recent systematic review concludes that certified farmers do benefit from higher prices and greater income from produce sales but employees wages do not seem to benefit (Oya, Schaefer & Skalidou, 2018). Up until introduction of the new European procurement directive in 2014 public authorities faced legal risks if they specified Fairtrade in public procurement (Fisher & Corbalán, 2013). Hughes, Morrison & Ruwanpara (2018) consider UK public procurement in relation to ethical trade and global supply chains. They argue that this is an under-researched area. They conclude that

ethical sourcing is significantly less advanced in the UK public sector than it is in consumer goods sectors, with implications for social justice in a whole realm of under-researched global supply chains (Hughes, Morrison & Ruwanpara 2018, p.1).

2.11.2 Modern Slavery

Slavery as a legal status recognised under national laws was abolished almost everywhere in the world in the course of the 19th century. However forms of forced labour have continued all over the world – to a greater or lesser extent in different countries and with varying degrees of toleration by government. Miers (2003) provides a thorough overview of the persistence of forms of slavery and forced labour during the twentieth century. More recent discussions of Modern Slavery are provided by

Kara (2017) and Kotiswaran (2017). Forced labour describes a situation in which a worker performs work or services involuntarily and under a threat of some form of penalty. There is considerable potential for goods produced by forced labour to end up being sold in developed countries such as Europe or North America. This may particularly include food products such as bananas, pineapples, fish or chicken. Stringer & Michailova (2018) assert that modern slavery thrives in multinational corporations' global value chains and this is an issue long ignored in international business research. This risk is particularly well documented for certain food products originating from certain countries – such as fish from Thailand (Chantavanich, Laodumrongchai & Stringer, 2016). Public sector procurers should be aware of the possibility that food they are purchasing may have been produced by unfree labour. This is referred to briefly in Giuliani (2018). There is however not yet any substantial academic literature on public procurers' response to the challenges posed by Modern Slavery.

2.12 Supporting innovative products

Poppendieck (2010, p.229) gives an example from New York City, where the purchasing power of a large school district persuaded a yogurt manufacturer to develop a new product - a healthier yogurt free from high fructose corn syrup. The recent review by Obwegeser & Muller (2018) observes that policy makers and researchers internationally are showing growing awareness of public procurement as an innovation policy tool, with an increasing number of studies being published every year. However they observe that public procurement practitioners do not have a tradition of publishing their results in academic journals and the published academic studies typically apply an innovation perspective while paying scant attention to the public procurement aspects. Few studies have investigated in detail the specific conditions within public procurement that promote or hinder, innovation and repeated efforts to use procurement budgets to promote innovation have had limited success (Uyarra, Edler, Garcia-Estevez, Georghiou & Yeow, 2014, p.632).

The Lombardy regional government has tried to use public procurement to promote innovation in healthcare, energy and food. These included enhancing traditional foods of Lombardy to make them more suitable for the dietary needs of elderly people. However EU procurement regulations appear to discourage public authorities from using procurement to promote innovation, pushing them to purchase readymade products and thereby miss opportunities to upgrade .

the competitive advantage of the industrial system of the region (and its whole nation) (Vechiatto & Roveda, 2014,p.442).

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2.13 Reducing Environmental Impacts

There is quite a large number of studies of the environmental impact of dietary choices Martin & Brandão (2017) highlight the importance of this topic, stating that “many studies find that activities related to food production account for nearly 20–30% of anthropogenic greenhouse gas (GHG) emissions”. They conclude that the largest reductions of GHG emissions would result from a halving of meat consumption – which would be in accord with nutritional guidelines advocate increased fruit and vegetables consumption. An increase in organic foods would significantly reduce toxicity impact, but with no significant change in climate impact. An increase in Swedish food production and consumption would reduce environmental impacts but there was only scope for a minor increase given limits in the Swedish growing season and availability of domestically produced foods. Reference will be made below to several representative studies – especially those which refer to the countries which are particularly studied in this thesis.

2.13.1 Danish elderly catering (Saxe et al, 2018)

This study calculated environmental impacts of the Danish meal service supplying vulnerable home-dwelling senior citizens and assessed how these could be reduced. Five public and private meal producers had a combined annual production of 1.2 million main meals provided for senior citizens in nine municipalities. Meals were divided into five categories: vegetarian, fish/seafood, pork, poultry, and veal/beef. The

study calculated for these categories the global warming impact and overall environmental impact for each recipe, including ingredients and processing. The environmental impacts of packaging, meal delivery, and food waste were estimated separately. The study found that the average environmental impact of main meals with veal/beef were 5–7 times higher than the average impact of all other meals, and 8–11 times higher impact than the impact of the average vegetarian meal. Differences among the non-beef meal categories were smaller, with vegetarian and fish/seafood meals having the lowest impact. The study concluded that the most important strategy for reducing the environmental impact of Danish meal service would be to reduce the number of meals containing veal/beef. Vegetarian meals were rarely more sustainable than fish/seafood. Packaging, food waste, and delivery of meals played minor roles in overall sustainability.

2.13.2 Carbon footprint of Turin school catering

Cerutti et al (2016) reports on a pioneering attempt to use environmental impact assessment indicators to assess the environmental savings achieved by sustainable food procurement policies. The research by Turin University calculated the climate change potential of five foods - potatoes, apples, carrots, pears and peaches – in relation to production, provisioning (focusing on the transportation from production sites to the peripheral food hubs of the city), and distribution (focusing on the transportation from the city hubs to schools). The study calculated the different climate impacts of the three phases of the supply chain. It concluded that 61–70% of the greenhouse gases were emitted in the production phase, 6–11% in the provisioning phase and 24–28% in urban distribution. In consequence, policies that affect production practices would have the greatest potential for reducing the carbon footprint of the catering service. As regards geographical origin, in the school year 2013/2014 the City of Turin decided to restrict the place of origin for all major fruit and vegetables to the Piedmont region for the school year 2013/14.

2.13.3 Institutional catering in Lombardy – environmental impacts

Caputo et al, 2017 reports how five academics from Milan universities have devised a food chain evaluator – a tool for analyzing the impacts and designing scenarios for the institutional – particularly school - catering in Lombardy (northern Italy). The research particularly examined the following products: rice; potatoes; tomatoes; lettuce; beans, beef and poultry meat. It considered usage of non-renewable energy in food production. The research found that in general, the shift towards local and organic products implied a reduction of the environmental impacts evaluated. The research stressed the important impacts of beef consumption in terms of energy and land consumption and the environmental benefits in switching from beef to poultry meat or non-meat proteins such as beans.

2.13.4 UK Primary School Meals - Carbon and water footprint

Laurentiis, Hunt & Rogers (2017) quantifies the carbon footprint (CF) and water footprint (WF) of primary school meals served in England. The contribution to the total impacts of different food groups was analysed: meat dishes were responsible for 52% of the total CF and 38% of the total WF. Chocolate desserts contributed 19% of the total WF. One fifth of the impacts were associated with the production of plate leftovers.

2.13.5 Desirability of reducing meat consumption

Numerous studies argue for the environmental desirability of reducing meat consumption. Hallström, Carlsson-Kanyama & Börjesson (2015) report on a systematic review of 14 peer-reviewed journal articles assessing the GHG emissions and land use demand of in total 49 dietary scenarios. The results suggest that dietary change could play an important role in reaching environmental goals, with up to 50% potential to reduce GHG emissions and land use demand associated with the current diet. The greatest potential for GHG emission reduction would come from avoiding all

animal-based products (vegan), followed by scenarios of avoiding all meat (vegetarian) and replacing ruminant meat with pork and poultry.

Other studies underlining the environmental benefits of reducing meat and dairy consumption include D'Silva & Webster (2010); Hallström, Rööös, & Börjesson, . (2014); Harwatt et al, (2017) and Salonen, Siirilä, & Valtonen, (2018). On the health and environmental benefits of reducing consumption of animal-based foods see Springmann, Godfray, Rayner & Scarborough (2016); Rööös et al. (2017). Poultry and pigmeat apparently have much lower GHG intensity than food produced by ruminant animals - beef, sheepmeat or milk/dairy products. However much of the land used by grazing ruminants is not suited to other forms of food production. "By eating animals that are reared on land unsuited to other food producing purposes, we avoid the need to plough up alternative land to grow food elsewhere" (D'Silva & Webster, 2010, p. 41).

The carbon emissions from legumes are one thirtieth those of meat (Carlsson-Kanyama & González, 2009). Nonetheless consumption of legumes is very low compared to intake of red meat. In Denmark – for example – adults consume on average 137g of red meat daily compared to 7g of legumes. People prefer not to eat beans because they find them unfamiliar, unpalatable and causing gastrointestinal discomfort (Kristensen, Bendsen, Christensen, Astrup & Raben, 2016, p.2).

2.14 Meat reduction in public catering

There have been a few studies of public catering which examine meat reduction initiatives. Leenaert (2012) discusses how Ghent won local support for Veggie Days. Vegetarian days have also had some success in Finland (Lombardini & Lankoski, 2013, p.159). Kurz (2018) reports on a successful intervention at Gothenburg University restaurants, where making vegetarian dishes more visible increased sales.

2.15.1 Preparing food from fresh ingredients (scratch cooking)

A new approach in public catering has been to prepare an increasing percentage of meals from fresh ingredients rather than using food manufactured elsewhere (such as a pizza which simply needs to be heated up before serving) or semi-processed ingredients – such as a manufactured sauce. This is often referred to as cooking from scratch . This approach is an attempt to reverse the massive growth in usage of convenience foods which took place in the USA and Western Europe, particularly the UK, since the 1970s (Jackson & Viehof, 2015; Pepper & Milson, 1984). In the UK the Soil Association's Food for Life Catering Mark has encouraged this approach by making the preparation of 75% of all meals from fresh ingredients an entry level requirement.(Carey 2013; Soil Association, 2018). In the USA the Healthy, Hunger-Free Kids Act passed by Congress in 2010 led to the introduction of new school meal nutrition standards which became effective in 2012. The new rules increased the quantity and variety of fruits, vegetables, and whole grains required in school meals and required reductions in sodium and saturated fat. School kitchens needed more equipment and space for onsite preparation of fresh ingredients. School nutrition staff needed training to expand the limited skillset which developed from preparing frozen and other convenience-type foods (Hildebrand et al, 2018 See also Poppendieck, 2010, p. 226, and Gaddis, 2014.)

2.15.2 Increasing staff training...and job satisfaction

The corollary of preparing an increasing percentage of food from fresh ingredients is that staff training has to be enhanced. An increase in staff training has already been mentioned in the context of the USA's Healthy, Hunger-Free Kids Act of 2010 (Hildebrand et al, 2018). This runs contrary to a widespread deskilling trend which has prevailed in many large-scale kitchens. Goggins (2018) reports on a survey of large-scale catering providers in Ireland. He concludes that the predominant trend was for large catering organisations to introduce standardized recipes across nationwide operations de-skilling and disempowering on-site catering staff. Goggins argues that mass centralisation of catering knowledge and skills is unlikely to feed well into

sustainability – because deskilled staff will be untrained about the social, economic and environmental impacts of food choices and disempowered from following more sustainable food practices. In the UK a survey of kitchen staff following the introduction of the Food for Life approach to school food showed that the increased training helped produce greater feelings of job satisfaction – through learning new food preparation skills and recipes and meeting with food producers and learning more about food sourcing (Kimberlee, Jones, Morley, Orme & Salmon (2013, p.765). Organic food conversion in Danish kitchens has required a considerable amount of staff training (Mikkelsen & Sylvest, 2012). There have also been improvements in staff job satisfaction. Sørensen, Løje, Tetens, Wu, Neal & Lassen (2016) reports on a longitudinal survey of wellbeing at work among kitchen workers during organic food conversion in Danish public kitchens. The survey concluded that psychological wellbeing at work showed no significant difference after training in organic food conversion. The only significant difference was that kitchen workers experienced greater body fatigue. Kitchen workers reported improved work motivation from working with organic food and increasing food quality.

2.16 Introducing seasonal menus

There is a widespread belief that eating a “seasonal menu” is better for the planet. Any assessment of the significance of a “seasonal menu” is difficult because there is no single definition of this concept. Röös & Karlsson (2013) endeavoured to assess the effect of eating seasonal on the carbon footprint of Swedish vegetable consumption (carrots and tomatoes). Their study points out that there are four possible definitions of a seasonal menu (Table 4).

Table 4. Definitions of seasonal produce (Röös & Karlsson, 2013)

Definition	Description	Transport	Accepts produce from heated greenhouses
A	Swedish season. Consumes only Swedish produce. Heated greenhouses allowed. Main argument: decreases transportation.	Short	Yes
B	Swedish season with no energy use for heating. Consumes only Swedish produce that has been cultivated in unheated greenhouses. Main arguments: decreases transportation and energy inputs.	Short	No
C	European season. Consumes European produce with the shortest transport distance (therefore prioritises Swedish produce when this is available). Heated greenhouses allowed. Main argument: decreases transportation.	Medium	Yes
D	European season with no energy use for heating. Consumes European produce (but prioritises Swedish produce when this is available) that has been produced in unheated greenhouses. Main arguments: decreases energy use for greenhouses.	Long	No

They concluded that local outdoor vegetable crops did indeed have a lower carbon footprint. The strictest possible definition of seasonality (B) excluded the use of heated greenhouses and long distance transport but this meant that tomatoes were only available for three months in the year. A reduced carbon footprint from eating only Swedish tomatoes (option A) was due to the use of renewable fuel (woodchips) instead of fossil energy in Swedish greenhouses. Only consuming Swedish carrots entailed heavy carbon footprint from refrigeration. The actual reduction in GHG emissions from eating seasonal vegetables is limited as emissions from vegetable production make up a small proportion of total emissions from food consumption (Röös & Karlsson, 2013). Maietta & Gorgitano (2016) found that pupils in 33 Naples schools were more satisfied with school meals after a switch to seasonal menus.

2.17 Reducing food waste

2.17.1 Sweden

The large-scale spending involved in a national free school meal system has led to considerable further academic research in Sweden into understanding the reasons for food waste with a view to minimising it. Most recently there has been the survey of kitchens in five municipalities by Steen et al., (2018) This study concluded that increased plate waste could be linked to a number of factors:

- Older children wasted more food
- More food was wasted in larger dining halls – perhaps due to rising stress and noise levels
- More food being produced than required due to inaccurate estimates of the number of children wanting to dine that day
- Higher wastage in satellite units which bring in cooked food from outside compared to production units which cook and serve hot food.

Eriksson, Osowski, Malefors, Björkman and Eriksson (2017) reports on an attempt to quantify food waste in schools, preschools and elderly care homes in one municipality in Sweden. The quantification was conducted during three months, spread out over three semesters, and was performed in all 30 public kitchen units in the municipality of Sala. The study found that there was great variation in food waste levels between kitchens – ranging from 13 to 34 per cent. Satellite kitchens - which received warm food prepared in another kitchen – had a 42% higher waste level than kitchens preparing all food themselves – production units. This was possibly due to production kitchens having greater flexibility in cooking the right amount and being able to reuse surplus food. Eriksson, Lindgren & Osowski (2018) report on a survey of all Swedish municipalities through a questionnaire and follow-up telephone calls (response rate 93%) which showed that 55% of all Swedish municipalities quantify food waste at central level. School lunch waste is commonly quantified for two weeks per year. Municipalities share many similarities, so a common standard is feasible. Eriksson et al (2018) presents a methodological framework for standardising food waste quantification in food services. The framework was tested and validated in six case

studies in professional (public and private) catering units in Sweden. Data were collected from different schools, elderly care homes and hotels.

2.17.2 Denmark

Thorsen et al. (2015) compared plate waste and food intake in two primary schools with children receiving lunch meals based on New Nordic Diet principles and those bringing their usual packed lunch. The study found that plate waste was closely related to childrens menu preferences – with higher waste on soup and vegetarian days and suggested that portion sizes for lunch meals might be too large. Jensen & Teuber (2018) report on research into food waste prevention in Denmark and give considerable detail on possible measures to reduce waste in the food service sector. These include better tracking and analysis of waste volumes, smaller plates in restaurants and cafeterias and more use of imperfect produce – especially onions and leeks. Optimised buffet management is also advocated - ensuring that as little food as possible is brought to the buffet without being taken by the customers. This requires extra staff time replenishing the buffet during the meal rather than putting all the available food at the start. Food waste reduction has produced cost savings enabling introduction of more organic food into public food service institutions without increasing the budget. This has been assisted by government-funded training and consultancy (Jensen & Teuber, 2018, p.31). Borum & Kidmose (2020) reports on a survey of food waste in 800 kitchens in the public and private sector carried out during 2018. The results are scaled up to produce national food waste estimates. The survey showed the highest level of food waste in hotels and restaurants and a lower level in public sector kitchens.

2.17.3 United Kingdom

In the UK the Waste Resource Action Programme (WRAP) is a government-funded organisation promoting waste reduction – including food waste. The most recent survey of food waste in schools took place as long ago as 2010. This included compositional analysis of food waste from 39 schools in four local authority areas.

There were also interviews and focus groups with school staff and pupils in 16 schools and telephone interviews with local authority and commercial school catering managers across nine local authority areas. The report estimated that that over a school year (40 weeks) a total of 55,408 tonnes of food waste was generated by English primary schools in England and 24,974 tonnes by secondary schools. Waste reduction interventions were trialled in twelve schools (WRAP, 2011, p. 3). WRAP has declared aspirations to collect better statistics in future. In 2019 it anticipated that by 2022 schools and hospitals would have agreed a methodology for collecting food waste statistics (WRAP, 2019). There does not appear to be more recent academic literature estimating UK school food waste. The ageing statistics collected by WRAP are relied upon in the few instances where academic literature makes reference to the subject of food waste in UK food service. See Wickramasinghe, Rayner, Goldacre, Townsend & Scarborough, P. (2017) ; Tonini, Albizzati & Astrup (2018).

2.18 De-centralised versus centralised kitchen systems

For any public catering organisation there is a choice between setting up a production kitchen wherever food is served and producing the food in a centralised kitchen, which can take advantage of scale economies but will require the food to be transported to the individual locations where it is consumed. There appears in several countries to have been an increasing trend towards centralisation of kitchen provision in public catering. A recent review of the impact of school canteens on child obesity in Italy mentions that in almost all municipalities the food is prepared in centralised kitchens. It is then transported to school canteens. It is finally served to the children and the food waste is removed. (Decatoldo & Fiore, 2018). The trend to centralise school kitchens has not however had extensive coverage in academic literature, except for concerns about food safety. Richards et al (1993) is an extensively-cited report on a food poisoning outbreak in elementary schools on Rhode Island USA. It observed that throughout the USA there had been a trend toward centralised school lunch preparation and this had increased the risk of foodborne illness. One study from India compares pupil satisfaction with food from centralised and localised production kitchens. Several Indian state governments were then considering the centralised

kitchen model. The study concluded that de-centralised kitchens were better (Ali & Akbar, 2015).

The survey of Swedish residential care homes by Josefsson, Nydahl, Persson & Sydner (2017) found that having food provided by an on-site kitchen promoted meal satisfaction. And where food was provided through chilled food production systems – from a central kitchen, residents were less likely to have adequate nutritional status. Eriksson et al. (2017, p.415) reports on a study of food waste in municipal kitchens in Sweden which found that there was a much higher food waste level in satellite kitchens – which receive food produced in a central kitchen – rather than kitchens preparing all food themselves - production kitchens (see 2.17 above).

2.19 National overview of academic literature **– for selected countries**

School meal systems are found all over the world. The 2013 World Food Programme report estimated that there are at least 368 million pre-primary-, primary- and secondary-school children receiving food through schools around the world, based on a sample of 169 countries. The biggest programmes are in India (114 million), Brazil (47 million), the United States (45 million) and China (26 million). There are at least 43 countries with programmes of more than one million children (World Food Programme, 2013). For the purposes of this thesis it was not felt to be necessary or practicable to review academic literature for all 169 countries which have school feeding systems. It was decided to provide an overview of academic literature relating to publicly-funded school feeding and other public catering in the three countries which are the main focus of the PhD:

- United Kingdom
- Sweden
- Denmark

It was further decided by way of comparison to review academic literature relating to two European Countries – Italy and Finland – where the school meal system has been particularly well described in academic literature. The fourth European country brought into the literature review is Germany. A large and important country with a growing public catering sector and a strong interest in organic food, where until now academic literature in English has been minimal. Outside Europe it was decided to bring the USA and Brazil into the literature review because they have been well covered in the academic literature (Moffat & Thrasher, 2016, quoted in paragraph 2.5.2). There is little academic literature about public food procurement from anywhere prior to 2000. This subject became an object of increased academic enquiry after 2000, reflecting increased attention to this subject by national and local government agencies and NGOs in several countries.

2.20 United Kingdom

2.20.1 School meals policy

For a review of the history of school meals policy in the UK from the first national legislation in 1906 see Gustafsson, 2002. Long (2018) provides a more recent overview of policy affecting the nutritional quality of school meals.

2.20.2 New school food standards and surveys of meal take-up

The government's introduction of new, healthier school food standards in 2006 had the unintended effect of reducing children's take-up of school meals as many children rejected unfamiliar foods. The government responded by investing in more equipment and training for school kitchens and introduced a subsidy for the cost of school meals. It funded the School Food Trust, tasked with encouraging local authorities to improve the standard of school meals. Between 2006 and 2012 the School Food Trust published detailed reports about school food provision collected through a survey of

all 152 English local education authorities. The surveys reported on the percentage of children receiving school meals, meal prices, whether meals complied with government food standards, whether they were delivered by the local authority or by an external caterer and whether the schools had onsite kitchens. The data within the published reports is broken down by the twelve standard English regions. For the first survey see Nelson, & Nicholas, (2006). For the last survey see Nelson.,Nicholas, Riley & Wood (2012). The School Food Trust surveys have provided a basis for considerable coverage of school meals in academic literature – such as Nelson (2011), Adamson et al, 2013; Nelson, Gibson, & Nicholas (2015); Weichselbaum, & Buttriss (2011).

2.20.3 Public food procurement

A contrast can be made between the very detailed survey evidence relating to the provision and takeup of school meals by local authorities between 2006 and 2012 and the very limited amount of published data relating to public food procurement by these same local authorities. There has never been a national survey of public food procurement by local authorities. Occasionally individual local authorities have released some information about their food procurement activities – highlighting local achievements – see 3.4.17 below.

Pioneering academic work examining public procurement policies for school food has been done by Professors Kevin Morgan and Roberto Sonnino of Cardiff University. Morgan wrote in 2014:

When we began our work about 14 years ago, I can still remember some colleagues in Cardiff feeling it was something comical, somehow beneath the dignity of academics, to look at such things as school food, the provenance of school meals, and what ended up on a child's plate. At that time it was not seen as a valid subject of academic inquiry, and I am delighted that in recent years the academy has begun to recognize the validity of these issues...Nowadays, such issues are second to none on the academic agenda, up there in the same category with climate change, dignified elder care, and other important public health issues. They are fundamental issues. Thus, if anyone still feels embarrassed in working with school food and children, s/he has no reason to feel like that today, because these issues have finally reached the top of both policy and academic agendas (Morgan, 2014, p. 253)

The process through which these changes happened is outlined in publications by Morgan and Sonnino during 2007-2008. The important developments included:

- Increasing concern about child health – particularly obesity and a desire to remedy this by improving the standards of school meals,
- This was reflected in local campaigns and the TV programmes of Jamie Oliver and eventually in government introducing new school food standards.
- In parallel with this there was also increasing concern about the future viability of UK agriculture after the foot and mouth outbreak in 2001. This led to the Public Sector Food Procurement Initiative – announced in 2003, which aimed to encourage public organisations to buy food from British producers – including small and local food producers (Morgan & Sonnino, 2008, pp. 27-28).

Morgan & Sonnino (2007, p.23) argue that for many years public procurement managers in the UK have convinced themselves that they cannot procure food from local producers because this is prohibited by EU regulations, which uphold the free-trade principles of transparency and non-discrimination. They argue that in reality these regulatory barriers are more apparent than real because the EU allows public contracting authorities to practice local sourcing in all but name by specifying such qualities as fresh, seasonal, organic and certified produce.

Chapter 6 of Morgan & Sonnino (2008) describes how school meal services were improved in four local authority areas in the UK: Carmarthenshire, East Ayrshire, South Gloucestershire and Greenwich.

The salient features of these case studies include:

- Local authorities finding ways to encourage purchasing of local and organic food
- Food being made mainly from raw ingredients
- Increased staff training
- Promotion of classroom education on food, cooking and farming
- Revising menus to reduce meat usage and increase vegetables

- Outreach to local food producers before the commencement of the formal tendering process
- Division of the contract into lots to encourage small and local suppliers
- Separation of distribution from supply - using a specialist contractor to provide a distribution service, moving food to schools from a large number of local farmers who sell it to the Council
- Better quality food leading to increase in uptake of school meals

East Ayrshire was the local authority catering service which piloted the Food for Life Gold Standard – which when it was first announced required 75% of ingredients to be freshly-prepared, 50% to be local and 30% to be organic (Soil Association, 2003, p.6; Morgan & Sonnino, 2008, pp. 129-132).

Levidow and Psarikidou (2011) makes brief reference to Cumbria County Council favouring local food producers through public procurement: Procurement policy in Cumbria emphasized quality and sustainability criteria including carbon footprint, animal welfare and distance travelled to an abattoir. A rural enterprise agency helped small producers show in their tenders that they could deliver the quality and sustainability requirements. Tenders were divided into relatively small lots – by product type and locality – encouraging smaller producers to compete. Use of a specialist distribution contractor meant that smaller suppliers did not have to distribute their food all over Cumbria. This approach did not cost the Council more – it was able to make savings of £3.5m through reducing purchasing costs

Morgan & Morley (2014) provided an overview of the UK school meals in the era of financial austerity after the change of government in 2010. It pointed out that in Scotland and Wales local authorities were still very largely in control of school catering whereas in England it was being devolved to the level of individual schools. It expressed concern that the school meal provision could be cut back until it ended up as into a shrunken stigmatised free school meal service serving the poorest of the poor. It deserved instead to be built up as a health promoting service for all. It gave one more case study of good practice. This was a social enterprise in Kent, Whole

School Meals Ltd, established in 2005 by a group of parents, school governors and local entrepreneurs. It served eighteen schools in Kent, who owned 75 per cent of the shares and any profit could be shared with the schools.

2.20.4 Food for Life Partnership

Food for Life (FFL) is a partnership of national charities led by the Soil Association. It aims to promote healthy and sustainable food in out of home catering. It commenced working in schools in 2002 (Soil Association, 2003). Individual schools can enrol with Food for Life to pursue a programme of food education. School catering organisations can apply for the Food for Life Catering Mark – now known as Food for Life Served Here – which has become a measure of healthy and sustainable food in the UK. Food for Life has broadened its activity to include hospitals, nurseries, restaurants and elderly care. On poor nursery food see Fookes (2008, p.16). There are three levels of the FFL Award – Bronze, Silver and Gold - summarised in Table 5.

Table 5 Food for Life Criteria (FFLP, 2011; FFLP, 2013)

Bronze Award criteria	Silver Award Criteria	Gold Award Criteria
75% of dishes on menu freshly prepared	At least 5% of ingredients organic or MSC	At least 15% of ingredients organic or MSC
Seasonal menus	local food	50%+ local ingredients
Eggs cage free	Poultry eggs and pork are Freedom Food	Emphasis on animal welfare
Meat Farm Assured as minimum	Only sustainable fish	More Fairtrade & vegetarian
Minimise additives and no hydrogenated fat	At least one Fairtrade product	

When originally conceived FFL envisaged a target of 30 per cent organic food for FFL Gold (Soil Association, 2003, p.8; 2006, p.21)). By 2011 the minimum percentage of organic food required for FFL Gold has been reduced to 15 per cent. This reflected the difficulty which most school catering operations had in reaching the initial target of 30 per cent organic. The number of meals with FFL accreditation has risen steadily.

In 2011 the Soil Association announced that over 300,000 Catering Mark meals were being served every day (Soil Association, 2011) In March 2014 the total was just over 900,000 meals per day with 403,000 (44%) at Silver and Gold. By March 2017 the total number had risen to 1.7m meals per day, with over 1m at Silver or Gold (Soil Association, 2014 & 2017).

The Food for Life Catering Mark continues to grow, although this rate of growth has slowed as cost pressures have impacted caterers and there has been less direct impetus from Government policy (Soil Association, 2017)

By March 2018 there had been a further increase to 1.8 millions meals per day – although this was a much smaller rate of increase than between 2014 and 2016. This included over half of all primary school meals served in England (Soil Association, 2018a). Soil Association's organic market report 2019 published on 6 February 2019 reported that double digit increases in Food for Life within public catering had slowed following local authority budget cuts and political uncertainty (Brexit). Sales of organic food through the scheme still rose by 8.3% and the Soil Association was hopeful of further growth through marketing initiatives. The total amount spent on organic food in 2018 through both Food for Life in public catering and Organic Served Here in private restaurants – was £19.5m . (Soil Association 2019a, p. 14).

There has been a limited amount of academic evaluation of FFL. Several articles have focused on the impacts on pupils – how it can help them learn about food production and sustainability (Weitkamp et al 2013; Jones et al, 2012). As regards the school kitchens, a survey of kitchen staff showed that implementation of FFLP increased job satisfaction (Kimberlee et al., 2013). Two recent studies have examined the potential for transferring the FFL model to other settings such as hospital kitchens (Gray, Orme, Pitt & Jones, 2016; Gray, Orme, Pitt & Jones, 2017 ; Gray et al, 2015). Considering the scale of FFL activity in the UK's primary schools over the last ten years it would there has been very little published academic research following on from the work about school food procurement which Morgan & Sonnino published in 2008. Kersley & Knuutila (2011) calculated that FFL had increased spending on locally procured food by £5m in Nottinghamshire and £384,000 in Plymouth – returning over £3 in social, economic and environmental value for every £1 spent. This is a report produced by consultants - not a refereed academic study.

2.20.5 FFL in universities

In terms of public food procurement there have been two more recent academic articles by Brindley & Oxborrow (2013) and Stahlbrand (2016). Brindley & Oxborrow (2013) presents a case study of the first university catering service to succeed in achieving Silver Food for Life accreditation. The university catering service (UCS) provides food for 24,000 students. Changes made included:

- Increasing the vegetable content of meat dishes for healthier recipes at lower cost.
- Sauces and stews based on in-season vegetables.
- Using only MSC (Marine Stewardship) approved fish,
- a minimum 10% organic food, satisfied by sourcing organic milk, after it was found that other organic products are too costly for the student market.
- a high proportion of food prepared from fresh
- reduced food miles in the supply chain.
- increasing the amount of information provided by fresh food suppliers to ensure that fresh, in season alternatives are selected wherever possible
- A new treatment and packaging, which enables local potatoes to replace imports with no loss of quality

The case study highlighted the difficulties involved in sourcing from small local suppliers :

- One potential supplier of locally sourced produce was reluctant to provide the multi-drop logistics required to service the different outlets for a relatively small volume of business.
- A closer supplier of prepared sandwiches failed to meet the freshness and shelf-life of a more distant supplier and was deselected to avoid waste
- Changes to the supply base have seen a consolidation of orders with a small number of wholesalers
- Speciality fish and cakes were bought locally for fine dining clients, while mass-market alternatives were purchased from national wholesalers for regular catering.

- Parallel supply chain structures exist in which fresh fish and cooked meats/sausages, sandwiches, and some cakes are supplied by specialist small suppliers, while larger volume fresh and frozen meats, fruit and vegetables, dry goods, bottled drinks and disposable items are supplied by five generalist wholesalers.
- Adopting local and seasonal supply – in fresh meat, fish and vegetables – exposes the customer to a greater risk of supply failure. Customer and supplier need regular exchange of information and menus may need to be adapted to use what food is available.

Stahlbrand (2016, pp.7-11) sets out two case studies of sustainable food procurement from UK universities: the inhouse caterer at Nottingham Trent University and a contract caterer, Baxter Storey, at University of the Arts, London. Nottingham was the first UK university to achieve FFL Silver and University of the Arts the first to achieve FFL Gold. Food was seen as an issue whereby the university could raise its public profile in terms of sustainability and be seen to be a leader compared to other universities.. The university catering operations moved to provide healthier food, with a seasonal menu based increasingly on food prepared from fresh ingredients. There was a strong effort to communicate the importance of the changes to all levels of the organisation – the students and staff to whom the food was sold, the chefs who prepared the food and university management up to the vice chancellor. There was prominent signage explaining why the university was committed to sustainability in food, how the FFL Catering Mark was achieved and exactly which ingredients were used in each dish. At University of the Arts simplifying the menu has been important – particularly at smaller outlets with limited kitchen facilities. The menu offers only two options every day, one vegetarian and one meat-based. The limited menu reduces costs and waste and gives staff more time to prepare meals from fresh ingredients. Students have reacted with enthusiasm to the new menus, and they have been a commercial success. Rather than buy from large wholesalers there was a move to source as much food as possible from local farms – working with local butchers and fruit and vegetables wholesalers to develop new sources of supply. Nottingham was able to source fair trade and organic coffee, organic eggs, milk and yogurt. University of the Arts was able also to source organic fruit and vegetables from Chegworth Valley

Farm, which was a member of the FFL Catering Mark Supplier Scheme. This illustrated how universities seeking healthier and sustainable food could work with entrepreneurial mid-sized food suppliers.

2.20.6 FFL impacts on suppliers

Morley (2020) reports on interviews with businesses supplying food to caterers with FFL accreditation : 26 interviewed in 2011 of which 15 were re-contacted in 2017. He found modest positive impacts on suppliers. In two cases FFL encouraged butchers to develop new sausages using local meat. A fruit and vegetable supplier developed a reusable tray for transporting produce for school kitchens.

2.20.7 Oldham case study

Morgan (2020) covers familiar ground in its overview of the Food for Life programme (pp. 229-238). It then provides a brief case history of one local authority – Oldham. (pp 239-41) It praises the commitment to improving school food shown by the local authority, the unit manager and her staff and success in regional food sourcing. It stresses the financial pressures on the school catering organisation which endanger these high standards.

2.21 Denmark

2.21.1 Context

In 2005 a review of organic food in Swedish catering asserted that

In the Nordic countries, Denmark has taken a lead in the field of environmental friendly foods in catering. (Bergström Soler & Shanahan, 2005, p.309)

This article referred to research into environmentally friendly foods and the use of water and electricity in catering going back to 1992 (Buhl et al., 1992). On the growth of organic agriculture in Denmark and the role of government in supporting this see

Jørgensen (2017) and Fuchs et al (2016). In the post 1945 era there was very little provision of school meals in Denmark, with children typically bringing packed lunches from home. From the end of the 1960s there began a development of school tuck shops and canteens – initially benefitting only a small minority of school children (He & Mikkelsen, 2008). In 2008 it was estimated that 20-25% of Danish schools had a school food service and even where it existed most children often preferred sandwiches or purchasing from nearby shops (Hansen, 2008, p.10; Loes & Nolting, 2011). From 2000 onwards several municipalities started to develop their provision of school meals, with a particular emphasis on offering organic food – such as Copenhagen, Roskilde and Gladsaxe. (He & Mikkelsen, 2008; Kristensen, Netterstrøm, He, Mikkelsen & Nielsen, 2009). By 2003 there was growing concern over rising obesity in Danish children and young people. Promotion of healthier eating was considered as a possible way forward and the government encouraged public authorities, research institutions, NGOs and businesses to work together. This included preliminary studies of healthy food and meal schemes in Danish schools and institutions (Mikkelsen & Trolle, 2004). Large municipalities like Copenhagen invested substantial sums in setting up school meal systems which could provide complete meals, although the percentage of school children who bought meals was not high (Loes & Nolting, 2011, p.103). Other municipalities provided simple dishes in cook-chill-heat systems offered in school tuck shops or subscription schemes for milk and fruit to accompany sandwiches brought from home and eaten in the classroom. Few schools had dining halls. In January 2007 the Copenhagen House of Food was founded and appointed by the City of Copenhagen to ensure quality improvement of public food for the citizens. In August 2009 the EAT Central Kitchen was launched in Copenhagen – expanding the city's capacity to provide meals. In the same year the Copenhagen House of Food was tasked to ensure that the City of Copenhagen would reach 90 % organic produce in the city's public kitchens by 2015 (Copenhagen House of Food, 2019). Local authority support for organic food in public kitchens in Copenhagen and other Danish cities encouraged academic research into this subject. Several studies were published in English as part of the work of the iPOPYP project. These included He & Mikkelsen (2009) plus works by Kristensen, He, Mikkelsen and Hansen cited above. The Danish government adopted an organic action plan covering the years 2015 to 2018 which provided financial assistance to public kitchens to encourage them change their kitchens to have an increased percentage of organic

food (MAFF, 2015). This development in national government policy stimulated further academic research into organic conversion. Several academic articles refer to the work of the Copenhagen House of Food. The comparative study, Smith et al., (2016), mentions it within a short case study of organic conversion of public kitchens in Copenhagen. There are also brief references in discussions of food schools in Copenhagen and attitudes of pre-school children and elderly people to public food provision (Hansen, Hansen, Dal & Kristensen, 2020; Nyberg, 2019; Nyberg & Sylow, 2021).

2.21.2 Organic Conversion in public kitchens

Organic conversion is a process whereby kitchens change over from conventional to organic food. Ingredients, recipes and cooking methods are systematically rethought with a view to achieving this change at minimum cost and with maximum benefit to the people eating the food. Mikkelsen & Sylvest (2012) describe organisational changes in public catering linked to implementation of government policy which supported increased usage of organic food in public catering. They examined 43 projects which received government grant assistance in different municipalities, eight of which involved over a hundred food service units. The fieldwork took place during 2004 and related to projects which had received funding between 1998 and 2004. Three quarters of the projects succeeded in reaching their goals of significantly increasing organic food. The study looked at the role of the people who actually implement policy, “street-level bureaucrats”:

- Practical constraints include limited supply of organic food and unstable deliveries. Larger catering organisations with highly standardised production and tightly-controlled menu-planning had the greatest difficulty coping with uncertainty as to exactly what food is going to be available. Moreover securing new organic suppliers drastically increased procurement workload.
- Organic food was significantly more expensive and catering managers have had to convert to organic without an increase in their food budget by making savings elsewhere.

- The shock of organic conversion had stimulated catering managers to rethink kitchen organisation and procedures which might otherwise have gone unquestioned and to find savings.
- Cost-cutting menu planning had in many cases resulted in more expensive meat cuts being replaced by cheaper vegetable products or traditional meat dishes being supplemented with vegetable ingredients.
- The food being served in the kitchens was chosen with greater attention to nutritional value than before organic conversion, resulting in healthier meals.
- Organic conversion had become an organisational development project involving development of staff skills and involvement.
- Kitchen personnel experienced increased pride and engagement in their work.
- More than half the projects contributed to significant reduction of food waste.

The article emphasized that the implementation of an organic conversion policy involved many people at different levels inside the organisation – from those formulating the overall policies through to those managing the food service operation and those actually preparing the food. It concluded that the personal preferences and attitudes of the street-level bureaucrats seemed to play a significant role. Sørensen, Tetens, Lassen, & Løje, (2016, p.27) gives very much the same description of the organic conversion process, adding some important details – that the new approach included:

- Producing all meals from fresh ingredients in the kitchen
- Starting off with fresh and raw foods
- Using local and seasonal foods
- Food production methods enabling re-use of leftovers where feasible.

Sørensen, Tetens, Løje & Lassen, (2016) showed that the Danish Organic Action Plan 2020 was highly effective in increasing the level of organic public procurement in 622 Danish public kitchens during the years 2012 to 2015. The proportion of public kitchens eligible for the Organic Cuisine Label in either silver (60–90 % organic food) or gold (90–100 % organic food) level doubled from 31 % to 62 %. Sørensen,,

Lassen,, Løje & Tetens (2015) compared two possible methodologies for measuring organic food in public kitchens. Some kitchens measured on the basis of self reported procurement – the Dogme Method. Other kitchens calculated the organic percentage on the basis required by the government for awarding the Organic Cuisine Label – based on invoices for food purchases, measuring the organic percentage either on the basis of weight or monetary value. The study concluded that organic food procurement estimations by the Dogme method of 55–75 % carried an increased level of uncertainty and may have overestimated the true organic procurement level. The paper did not address the question of whether measuring organic food by weight would produce different results from measuring it by value. Mørk., Bech-Larsen, Grunert & Tsalis (2017) found that Danish citizens, many of whom ate organic food at home, largely supported organic food in public catering.

2.21.3 Local food procurement

Ruge & Mikkelsen (2013) report on the local food project LOMA-Nymarkskolen in the Svendborg municipality. Students from a single secondary school participated in cooking school food for one week using products from local farms. The project established links between students and local food producers and contributed to students understanding of food production and healthy eating. The paper observed that public food procurers were increasingly interested in local food procurement.

2.22 Nordic Recommendations & New Nordic Diet

2.22.1 Nordic Council of Ministers

The Nordic Council of Ministers is an inter-governmental body representing the governments of Denmark,,Finland, Greenland, Iceland, Norway and Sweden, with a secretariat based in Copenhagen. The most recent edition of the *Nordic Nutritional Recommendations* – the Fifth - was adopted in 2012 and published in 2014 (Nordic Council of Ministers, 2014). The document is 629 pages long. It provides guidelines

for dietary composition and recommended intakes of nutrients and energy and recommendations on physical activity. It forms the basis of national dietary recommendations in all Nordic countries.-It is the result of a thorough evaluation of all relevant research within the field of nutrition. The document gives Dietary Reference Values (DRVs) for nutrient intakes. It also evaluates scientific evidence of the role played by dietary patterns and food groups that could contribute to the prevention of the major diet-related chronic diseases. Typical features of a healthy dietary pattern as described in NNR 2012 include plenty of vegetables, fruit and berries, pulses, regular intake of fish, vegetable oils, wholegrain, low-fat alternatives of dairy and meat, and limited intake of red and processed meat, sugar, salt and alcohol

2.22.2 New Nordic Food

The New Nordic Diet is an idea which was first formulated in 2003 and adopted by the Nordic Council of Ministers as the ideology of the New Nordic Food Programme in 2005. The aim was to establishing Nordic cuisine as part of the gourmet world map (Mithril et al, 2012). The concept aimed to tailor environmentally-friendly and health-promoting dietary recommendations to regional circumstances. This is a regional Nordic Diet which resembles the Mediterranean in some ways and helps preserve cultural diversity in eating habits.

Conclusion: A theoretically health-enhancing Nordic diet is possible including six evidence-based ingredients: (i) native berries; (ii) cabbage; (iii) native fish and other seafood; (iv) wild (and pasture-fed) land-based animals; (v) rapeseed oil; and (vi) oat/barley/rye. (Bere & Brug, 2009 p.91).

OPUS resulted in a number of studies assessing the effect of healthy school meals. Andersen et al (2014) concluded that the overall dietary intake at the food and nutrient levels was improved among children aged 8–11 years when their habitual packed lunches were replaced by school meals following the principles of the New Nordic Diet. Sørensen et al 2015 investigated whether serving healthy school meals influenced concentration and school performance of 8- to 11-year-old Danish children. The study concluded that school meals did not affect cognitive performance, but improved reading performance. Jensen, Thorsen, Damsgaard & Biloft-Jensen (2015) found that a New Nordic School meal programme consisting of a morning snack and a hot lunch based on fixed seasonal menu plans and with 75 per cent organic content was 37 per

cent more expensive in terms of ingredient costs than corresponding packed school meals. This cost differential could be almost halved by introducing more flexible scheduling of week plans and reducing organic to 60 per cent. Reducing portion sizes could reduce the cost differential by an extra 5 per cent, which would also reduce food waste by about 15 per cent. There have been several studies investigating the long term effects of the New Nordic Diet on chronic diseases among adults in Nordic countries. The effects reported by these studies do not demonstrate consistently whether or not the New Nordic Diet will reduce chronic disease (Galbete et al, 2018, p.2). Galbete et al (2018) aimed to investigate the association between the Nordic diet and the Mediterranean Diet with the risks of chronic disease (type 2 diabetes (T2D), myocardial infarction (MI), stroke, and cancer. The EPIC-Potsdam study recruited 27,548 adult participants from the Potsdam region in Germany. The study concluded that the Nordic diet showed a possible beneficial effect on MI in the overall population and for stroke in men, while the Mediterranean Diet conferred lower risk of T2D in the overall population and MI in women.

2.23 Sweden

2.23.1 Context

There is a long history of school meal provision going back over a century. Since the 1960s provision has been extended to all schools and the guarantee of free school meals to all children was put into law in 1997. In July 2011 the law was changed to specify that school meals should be “nutritious. Free school meals for all children were introduced as a social engineering measure aimed at using schools to ensure that children grew up to be healthy and productive citizens (Gulberg, 2006, p.337). The lunch consists of a hot prepared main dish with salad buffet, bread and spread, with milk or water to drink. It does not usually include confectionery, puddings or sugary drinks. In Sweden municipalities (kommunes) have responsibility for schools – including provision of school meals, although 16% of schools are run independently of local authorities (Patterson & Elinder, 2014). Kommunes were given responsibility for

education as part of a major decentralisation exercise between 1986 and 1991. In 1991 the government passed legislation permitting the establishment of free schools – funded directly by the national government (Wiborg, 2015). On the educational importance of school meals in Sweden see Waling & Olsson (2017) and Persson Osowski & Fjellstrom (2018) On a new initiative working with parents to promote healthy diet and physical activity see Elinder, Patterson, Nyberg & Norman (2018). School meal quality in Sweden is now quite well covered in academic literature. Patterson & Elinder (2014) reports on the first national survey of school meal quality in Sweden, which was carried out after the legal change in 2011 which introduced the requirement that school meals should be “nutritious”. This came after years of media debate about the varying quality of school meals.

Despite the long history of school meals in Sweden, data regarding school meal quality has so far not been collected in a systematic way...in order to gather data on overall school meal quality to facilitate future monitoring and research, an innovative web-based instrument was developed between 2010 and 2012 (Patterson & Elinder, 2014, p.656).

Responses from 97 schools indicated that there had been a modest improvement in school meal quality. The percentage of schools offering a daily vegetarian dish to all doubled to 34 per cent. Bere & Stea (2017, p.1) observed that

It is surprising that, despite the comprehensive national effort to maintain the provision of free school meals in Sweden and Finland, an evaluation of the effect and impact of free school meals has been limited.

They stress the importance of Persson et al (2017) which assesses the energy and nutrient intakes of Swedish children. Olsson & Waling (2016) found that about half of 216 schools surveyed were not complying with a legal requirement to include school meals in the schools' internal quality system.

2.23.2 Swedish agriculture – organic, deregulation and imports

Lohr & Salomonsson (2000) describe how Swedish government policy has encouraged organic farming since the mid-1980s, with taxes on fertilizer and pesticide usage and subsidies for organic producers since 1989. See also Saifi & Drake (2008) and Rasmussen (2008), which shows how government subsidies for organic farming in Sweden have been much greater than in Denmark. For concerns over water

pollution caused by conventional agriculture see Larrson, 2017; Grimvall, Sundblad & Wallin, 2018. In 1990 Sweden decided to deregulate its agricultural sector – up till then highly regulated. This was agreed by the major political parties in the teeth of farmer opposition. It reflected high agricultural prices in Sweden, high retail prices and a costly Swedish food mountain (Lindberg, 2007). Soon thereafter however Sweden joined the EU, bringing agriculture under the EU subsidy and regulatory regime (Fygare & Isacson, 2011, p.241). This also opened up the Swedish market to cheaper imports from EU member states. Wilhelmsson (2006) reports on how Swedish food companies have had to deal with increased imports.

2.23.3 Public procurement – research gap

There has been little academic research published in English about Swedish public food procurement. This is remarkable considering the very considerable amount of information available in non-academic Swedish language sources relating to public food procurement generated by national government, municipalities and NGOs (For example LRF, 2012; Ryegård, 2013; Ekomatcentrum, 2017; Svenskt Kött, 2017). In financial terms public food procurement in Sweden costs an estimated SEK 10 billion, equivalent to GBP 870m. Bergström, Soler & Shanahan (2005) report findings from a survey of Swedish purchasing managers in public and commercial food services and retailing were interviewed about use of environmental information in food procurement decisions. This paper notes that there has been a great deal more research in the field of environmental friendly foods in catering in Denmark than in Sweden

Similar projects concerning environmentally friendly food in catering have not been carried out in Sweden. This study aims to put such issues on the national agenda (Bergström, Soler Shanahan, 2005, p.309).

The interviews with purchasers found that the phrase “environmentally friendly food” was mostly understood to refer to KRAV – food recognised by the Swedish control agency for organic standards or other organic certifying bodies based outside Sweden. When purchasing KRAV products, the main problems were high prices and unreliable supply. There were too few cultivators, breeders and producers. (Bergström, Soler Shanahan, 2005, p.312). Grankvist & Biel (2007) report on a survey of professional food purchasers,. Price was found to influence product preference

more than any of the three environmentally related factors: , total energy use , greenhouse gas emissions and pesticide usage. Specific products covered in the study were minced beef and fresh apples. Introduction of a labeling system that indicated whether environmental impacts associated were 'better' or 'worse' than average increased the effect of environmental information on purchasing decisions.

2.23.4 Organic foods in catering – 2008 Survey

Post, Shanahan, & Jonsson,(2008) reports on a large-scale survey of Swedish catering managers in five categories: commercial restaurants, fast food restaurants, school canteens, day care centres (nurseries), and homes for the elderly. The survey focussed on usage of potatoes and other root vegetables. The research made a number of findings about catering managers' views of organic food:

- The higher price of organic food can be an obstacle – up to 80 per cent more expensive than conventional ingredients
- During the 1980s public catering was rationalised to minimise costs
- This promoted the use of processed and semi-manufactured foods such as deep-frozen potato products
- However these were generally based on conventional rather than organic ingredients
- Catering managers expect organic food to be available as fresh ingredients rather than in processed forms
- Many catering units lack the space and equipment to prepare vegetables from fresh ingredients
- Preparation from fresh ingredients is also time-consuming, and may require heavy lifting and produces less consistent quality
- If organic versions became available of popular processed foods – such as frozen mashed potato- this might increase overall consumption of organics.
- Small catering units use organic foods more often than their larger counterparts, where a change of strategy requires more extensive reconstruction

- Almost 40 per cent of school canteens never purchase organic products, thus making this category the largest group of non-users and 42 per cent are low users of organics
- In general, homes for the elderly are low users of organic foods and 36 per cent never purchase organic foods at all
- Many of the kitchens are equipped to handle both fresh and processed ingredients. Processed foods are often used when staff shortages occur.
- . Only a handful of small catering units operating within the public food sector, mostly nurseries, use more than 15 per cent of organic food.
- “In view of its high quality, many day care centres want to increase the amount of organic food they serve. However, the food should be unprocessed and as far as possible locally produced. If necessary, day care centres adjust menus and preparation instructions to organic foods. A few caterers consider organic produce to be tastier than conventional foods and that organic production has a positive impact on the environment and human health....” Choosing foods with good value, for example potatoes and tubers instead of large portions of meat, enables caterers to reduce costs and include more organic foods within current budgets” (Post, Shanahan & Jonsson, 2008).

2.23.5 National survey of food localisation in Swedish municipalities

Granvik (2012) presents the results of a national interview study of 218 Swedish municipalities – 75 per cent of the total. Of the 218 municipalities, 143 showed an interest in locally produced food. Of these 113 had already implemented one or more measures in practice that promoted the procurement of locally produced food:

- Policy on locally produced food – 26 municipalities (12%).
- Procurement procedures – 82 municipalities (38%) have amended these to make it possible for small local producers to respond to bids –eg through division of contracts into lots.
- 67 municipalities (31%) have undertaken communication efforts with local food producers to encourage them to respond to tenders.

- 18 municipalities (8%) have invested in co-distribution mechanisms aimed at assisting small-scale food farmers to supply the public sector and a further 15 (7%) are planning to do so.
- 9 municipalities had carried out all four of the above measures – thereby displaying significant interest in local food.

Granvik's survey did not investigate municipal policies of procuring increased amounts of organic food, even though in 2006 the Swedish government had introduced a target of having 20% of its agricultural land converted to organic. This is a substantial national survey of Swedish public food procurement practices but there has been very little follow up in the academic literature. Three academic articles since 2012 have made passing reference to this paper: Björklund & Gustafsson,(2015) Sandström, Lehtikoinen & Peltonen-Sainio (2018) and Tälle et al. (2019).

Granvik's further research has only included a passing reference to public procurement. It is not explicitly referred to in her report on a survey of Swedish municipalities and their inconsistent and poorly implemented policies on preserving agricultural land from non-agricultural development (Granvik et al, 2015). In her discussion of definitions of local food Granvik mentions that Swedish local and regional authorities emphasize the importance of the locally produced food for regional business, survival of the district, and job opportunities, as shown with the concept of *närproducerad mat*.(Granvik et al, 2017 p. 9).

2.23.6 Legal disputes over animal welfare and meat procurement

Hettne (2013) describes briefly how there have been legal disputes in Sweden over public procurement of food. Municipalities have prescribed animal welfare criteria in tenders for the supply of meat. Animal welfare is regulated by both Swedish and European Union law. Swedish animal welfare legislation specifies higher requirements than European Union law (Lagerkvist & Hess, 2010, p.56; Bock and Van Huik, 2007) On the history of animal welfare campaigns in Sweden see Schwartz (2018) and Vail, Hasund & Drake which discusses the 1989 law (1994, pp. 173-177).

There was legal uncertainty as to how much scope public authorities had to set procurement requirements which are based on Swedish animal welfare legislation which specifies higher requirements than European Union law. Details of the conflicting case law relating to lawsuits brought by food wholesalers against two municipalities – Sigtuna and Rattvik - can be found in Swedish-language academic articles, such as Pedersen (2011).

2.23.7 Organic food promotion in Sweden

Larrson (2017) refers to public procurement of organic food – along with choices relating to meat, vegetables, seasons and local food – in his discussion of Baltic Sea pollution. He refers particularly to Stockholm County Council's S.M.A.R.T. project which aims to promote diets that both improve health and reduce environmental impacts. He mentions the importance attached in several government reports to increasing organic food in public catering and specifically mentions Södertälje Municipality, south of Stockholm: which now wanted 100 per cent organic food. He emphasises that such decisions are the result of political discussion. Rundgren (2016) refers briefly to organic food being introduced into public catering in Sweden as part of a broader discussion of the ineffectiveness of relying on market competition and consumer choice to promote sustainable food choices. The exception to this “hands off” attitude on the part of government in Sweden is public food procurement

In 2006, the Swedish government adopted a goal that 25 % of all publically procured food should be organic. The municipalities of Borlänge, Lund and Södertälje have reached above 40 % and in total 27 municipalities and 8 counties have reached this official target. Malmö and Uppsala have set the goal that all publically procured food should be organic, even if they still have a way to go; Malmö reached 38.7 % in 2012 (Ekomatcentrum 2013).

Rundgren refers here to the statistics relating to organic food usage in public kitchens collected and published by the Ekomatcentrum (Organic Food Centre). The important role played by this civil society organisation in campaigning for increased usage of organic food throughout Sweden has only very briefly been referred to in academic literature, in that a few articles make reference to the statistics which they collect and publish about organic food usage in the public sector (Larrson, 2017; Persson Osowski & Fjellström, 2018). Rundgren stresses the importance of political action and

pressure groups in convincing public authorities and major actors in agri-business to choose more animal or environmentally friendly products : “It is easier to convince five buying directors than five million consumers” (Rundgren,2016, p.111).

The recently published review of Swedish school meals by Persson Osowski & Fjellstrom (2018) underlines that there has been growing emphasis on sustainability in national dietary guidelines on school meals

- Sweden was one of the first countries to introduce sustainability into its national dietary guidelines and those for school meals
- In 2016, about one-third of all food items used in public kitchens were organic, and the purchase of organic food items has been increasing by 6% to 7% every year

The paper argues however that

there has been something of a reductionist focus on single measures within the Swedish public sector. The focus on organic food is one of these, and the main driving forces behind this are societal demands as well as political goals (Persson Osowski., & Fjellström, 2018, p. 5).

This paper points out that it is not necessarily the case that organic food or indeed locally produced food is better for the climate. It maintains that there is a stronger evidence base for the view that eating less meat and reducing food waste would have good environmental impacts. In 2009 it was officially estimated that Swedish schools had the potential to reduce their waste by 50 per cent.

2.23.8 Local Authority policies

Out of 290 municipalities in Sweden, two have been the subject of food procurement case studies. Malmö – the third largest Swedish city, with 300,000 inhabitants – and the municipality of Klippan with a population of 20,000 in southern Sweden. Moragues-Faus, & Morgan (2015) give a detailed picture of how under Social Democratic Party leadership Malmö City Council responded to the collapse of its shipbuilding industry by adopting sustainable development as a flagship strategy. In 1996 the first organic products were introduced into school canteens.. Further steps

were the creation of a city farmers' market in 2001, a research project on climate change and food in 2003, and the inclusion in Malmö's Environmental Programme for 2003–08 of a goal that 10% of farmland would be organic by 2008 and 20% of food purchased by the City should be organic. Andersson & Nilsson (2012) describes how the City of Malmö achieved 43 per cent organic food in its school restaurants. In 2004 the City experimented with a pilot school where the kitchen was renovated and the staff retrained. In 2007 the goal of 100 % organic was reached in this school with a 10% cost increase. This achievement helped inspire a coalition of green and left-wing politicians to develop a comprehensive policy for sustainable development and food which was adopted in 2010 and envisaged that all food purchased by the municipality should be organic by 2020 and GHG emissions should be reduced by 40% . Malmö's food policy was based on the **SMART** model developed by the Institute of Public Health in Stockholm, which provides healthier and environmentally friendlier food without increasing costs. It

consists of the following: **S**maller amount of meat, **M**inimise intake of junk food/empty calories, **A**n increase in organic, **R**ight sort of meat and vegetables, and **T**ransport efficient. (Moragues-Faus & Morgan, 2015, p.1562).

The policy also prioritises the purchasing of ethically certified products, reflecting their status as Sweden's first Fair Trade City in 2006,. The City encourages food production in urban and periurban areas, urban gardening, children's gardens and new food-related cooperatives and social enterprises. The City Council did not prioritise sourcing food locally – because Malmö is “surrounded by large and industrial farms that do not conform to the local food stereotype” rather than small farms who might be more appropriate recipients of local authority support through procurement (Moragues-Faus & Morgan, 2015, p. 1564).

Knutsson & Thomasson (2014) present a case study of food procurement in Klippan Municipality. This is a small municipality (population 16,000) where the foodservice manager decided to improve food quality through a radical reappraisal of their food procurement practices and doing a thorough market analysis. The intention was to break away from the dominant national food suppliers (“the oligopoly”). With support from the municipal politicians, the foodservice manager managed to improve the quality of the food delivered without increasing the costs. The food purchased was divided into seventeen categories. Each category was then evaluated separately –

35% of the evaluation was placed on quality, 20% on supplier being able to guarantee delivery of the exact product ordered. The offered service level and environmental compliance were given 15 % weight each. The price was given a 15% weighting – a radical departure from previous procurement practices where it was the dominant consideration. The key success factor was to find criteria that the large companies could not or did not want to fulfil (Knutsson & Thomasson, 2014, p. 11) . The tender required fresh meat and fish to be delivered five times a week, whereas the large companies were set up to only deliver once a week, which meant they had to supply frozen meat or fish. The dominant wholesalers could have launched a legal challenge to the municipality's new procurement policy. But Klippan is a small municipality with a population of just over 17,000 and doing procurement on its own rather than in collaboration with other municipalities. It may well be that the big companies regarded them as too insignificant to be worth challenging (Knutsson & Thomasson, 2014, p.11).

2.23.9 Municipal Distribution Centres

There are several academic articles from Sweden describing the establishment of municipal distribution centres (also known as urban consolidation centres). This concept was pioneered in Sweden by the city of Borlange. The idea behind these centers is that all companies selling food or other products to the municipality will bring the products to the distribution centre, where a contractor appointed by the municipality will be responsible for distributing the food and other items to schools, care homes and other municipal outstations. It is hoped that this will lead to fewer environmental impacts from road traffic and may also encourage small businesses to sell to the municipality. Bosona et al., 2013) reports on a GIS-based logistical analysis of the Borlange distribution centre which confirms that the distribution centre is the best position and develops scenarios for further logistical and environmental improvements. Moen (2014) gives further details on the dissemination of the urban distribution centre within Sweden, estimating that twelve of Sweden's 290 municipalities have adopted these – referring specifically to the Borlange group, and municipalities around Vaxjo and Ystad-Osterlen. Bjorklund & Gustaffson (2015) have carried out a survey of logistical arrangements at seven Swedish municipalities who

have been seeking to reduce the environmental impact of transport of goods for municipal activities through setting up urban consolidation centres. They identify municipal logistics as an under-researched subject. Five of the seven include food in their distribution activities. In four of the cases it was expected that numbers of small/local suppliers would be increased by these arrangements.

Björklund Abrahamsson & Johansson (2017) focusses on something which has rarely been described by researchers till now: the business models and critical success factors for urban consolidation centres, which explain why initiatives succeed or fail. The paper is a multiple case study of five initiatives, of which three are located in Sweden. The initiatives in Österlen,, and Eskilstuna are run by the municipality and in Gothenburg by a private sector consortium. Details are given of the costs and revenues and profitability of each initiative.

Aggestam, Fleiß, & Posch (2017, p.71) report on a survey of smaller Swedish food producers and suggest that regional infrastructure such as food hubs should be developed for use by such producers to reach a wider audience and increase regional food availability to consumers and local and regional institutions such as schools and hospitals.

2.23.10 Developing procurement decision-making tools

Lindström & Röcklinsberg, (2013) is a brief conference paper which is the outline of an unsuccessful research proposal. The paper outlined how the procurement officers buying food for school meals faced conflicting pressures – buying cheaply, complying with EU procurement rules and trying to fulfil ethical objectives - animal welfare, environmental sustainability, climate change and global social justice. The paper argued that there was a need to develop skills among procurement staff - through developing practical tools or an ethical matrix which they could use.

Two brief conference papers were presented at the Eursafe conference in June 2016. Brunius, Moula, and Sandin (2016) discusses an ethical matrix which aimed to aid

decision makers in making ethically informed judgements in public food procurement. The paper presented the results of focus groups in which small mixed groups of politicians and officials from Swedish municipalities applied the ethical matrix to a particular procurement issue (e.g. organic vs conventionally produced meat). Both groups found this useful, although politicians were less positive about the tool. A more detailed report on this topic has been published in Swedish (Sandin et al, 2017). Rocklingsberg et al. (2016) discusses using digital tools to facilitate ethical procurement decision making given that public food procurement managers are under pressure to ensure multiple values are met within a limited budget and under current regulations.

Florén, Amani & Davis (2017) describe the development of a database integrated with meal planning software systems - e.g. Matilda, Aivo and Mashie - used in public kitchens, aiming to design climate - conscious and healthy meals. The aim was to reduce the climate impact of an average meal by about 20%. The modified software had already been introduced, or was being introduced, in about 20 municipalities across the country. These included the following kommunes – Borås, Eskilstuna, Gothenburg, Harryda, Huddinge, Norrköping, Umeå - and the following regions: Skåne; Sörmland, Stockholm, Västmanland, Västra Götaland. The software will highlighted popular meals which had a low climate impact. For popular meals with a high climate impact, this could be reduced by modifying raw materials – for example by replacing beef with vegetable protein, pork or poultry.

2.23.11 Survey of food in elderly care

Josefsson et al. (2017) carried out a questionnaire survey of 1154 individuals living in residential care homes in 117 of 290 Swedish municipalities. The research explored the effects of nutritional care practice on meal satisfaction and screened nutritional status among older adults in residential care homes. The study concluded that meal satisfaction was positively associated with certain quality indicators: a local food policy, private provider, on-site cooking, and availability of food service dietitians. Adequate nutritional status was positively associated with availability of clinical/community

dietitians, and energy and nutrient calculated menus, and negatively associated with chilled food production systems. The study did not consider introduction of organic food into peoples' diets—which is surprising considering that by 2017 many local authorities had long-established organic food sourcing policies and reinforces the impression that organic food procurement in Sweden is an under-researched topic.

2.23.12 Study linking pro-organic government policies to growth of organic agriculture

Lindström, Lundberg, Marklund (2020) analyses the effect of organic food procurement on organic agricultural land, using panel data from 2003 to 2016 including information on municipalities' organic food purchases, land use, and direct subsidies aimed at organic production. It concluded that the pro-organic government food policy since 2006 was associated with a significant positive impact on organic agricultural land in Sweden. A significant effect of direct agricultural policy in the form of subsidies was also found. This is the first academic study to have made extensive use of the statistics on public procurement of organic food collected by the Ekomatcentrum.

2.24 Themes emerging from the academic literature

Tables 6 and 7 summarise the academic literature review. Table 6 discusses general themes emerging from the academic literature and Table 7 focusses specifically on the UK, Denmark and Sweden. The list of research questions given in Table 21 at the end of the Methodology chapter is cross-referenced to these tables.

Table 6 Themes emerging from the academic literature (AC1-A13)

	Theme	Subject and/or Location ie country/city	Academic Articles	Para.
			Author[s] and date	
AC1	EU procurement law		Austdal, (2018). European Commission (2018) Maciejewski (2018) Soldi, (2018)	2.2
AC2	Healthy food in public kitchens	Comparison UK, Sweden, Australia Sweden Denmark Intl comparison	Lucas et al. (2017) Patterson & Elinder (2014) He & Mikkelsen (2014). Sisnowski, Handley & Street (2015)	2.3 2.23.1 2.3 2.3
		USA	Cohen et al. (2014)	2.3
AC3	Sustainable Public procurement	Under-studied topic	Amann et al. (2014) Grandia & Meehan (2017) Cheng et al (2018)	2.4
AC4	Sustainable food procurement	Definitions	Rimmington, Smith & Hawkins, (2006). Morgan & Sonnino (2008)	2.5
		Foodscale – definition & weighting	Goggins & Rau (2015).	2.5.1
		Under-studied topic	Moffat,, & Thrasher (2016) Botkins & Roe (2018) Neto & Caldas (2017) Smith et al. (2016) Oostindjer et al. (2017)	2.5.2
AC5a	Municipal food procurement strategies	New York	Marsden & Sonnino (2012) Cohen & Ilieva, (2015)	2.6.1

		Swedish cities	Cohen et al. (2004); Hall, Lofgren & Peters (2016); Alpenberg, Wnuk-Pel & Heneback (2018)	2.6.2
		Malmo-Bristol comparison	Moragues-Faus & Morgan (2016)	2.6.2
		Public food procurement under-developed in city strategies	Sonnino, Tegori & Cunto (2018)	2.6.3
			Sonnino (2017) Zasada et al. (2017)	2.6.3
		Performance measurement in local government. Swedish transparency versus coercive UK.	Kuhlmann (2010)	2.6.4
AC5b	Civil society campaigns for healthy and sustainable food	Brazil	Blanc & Kledal (2012)	2.7.1
		Pisa, USA	Galli et al (2014)	2.7.2
		Italy	Decatoldo & Fiore, 2018	2.7.2
		Bristol	Reed & Keech (2017)	2.7.3
		Brighton	Barnes et al. (2018)	2.7.3
		Award schemes	Coulson & Sonnino (2018) Van der Heijden (2016)	2.7.4 2.7.4
	Promoting Organic Food			
AC6a	Advantages of organic food	Biodiversity Health Animal welfare, Taste Beliefs	Goded,et al. (2018) Mie et al. (2017) Popa et al. (2018) Apaolazaa et al. (2018) Olson (2018) Seufert et al. (2019)	2.8.1
AC6b	Organic & Carbon footprint	Germany Holland	Treu et al. (2017)	2.8.2
AC6c	Can organic feed the world?	Pro Pro Against	Muller et al. (2017) Nordic Council of Ministers (2018) Connor (2018)	2.8.3
AC6d	Organic in public catering			
		UK		2.20
		Denmark		2.21
		Sweden		2.23
		Finland		2.8.4b

		Italy		2.8.4c
		Germany		2.8.4f
		USA		2.8.4g
		Brazil		2.8.4h
AC6e	Tension between local and organic procurement		Smith et al. (2016) Rimmington, Smith & Hawkins (2006)	2.8.5
		Finland	Post & Mikkola (2012)	2.8.5
		Germany	Doernberg et al. (2016) Braun et al. (2018))	2.26.2
	Organic food concentrated in cities	Italy	Filippini et al. (2018)	2.8.6
AC7	Supporting local/regional food suppliers			
AC7a	SME friendly procurement policies	“critical, difficult .. under-studied” International case studies	Harland et al. (2019, p.2)	2.9.1
		Ireland UK Ireland	McKevitt & Davis (2014) Loader (2013) Flynn & Davis (2016a; 2016b; 2017)	2.9.1
AC7b	SME difficulty in supply	Finland	Risku-Norja & Loes, 2017 Muukka et al. (2008) Lehtinen (2016) Korhonen et al. (2017)	2.9.7a
		Germany	Doernberg et al. (2016) Braun et al. (2018)	2.9.7b
		USA	Motta & Sharma (2016) Izumi, Wright & Hamm, 2010a Lehnerd et al. (2018) Watson, Treadwell & Bucklin (2018)	2.9.7c
		Brazil	Soares et al. (2017) Wittmann & Blesh (2017)	2.9.7d
Ac7c	Local differences in procurement policies	USA	Lyson (2016) Botkins, & Roe (2018)	2.9.8
Ac7d	Buyer Supplier Interaction	Ireland Ireland	McKevitt & Davis (2014) McKevitt & Davis (2015)	2.9.1

Ac7e	Scale of procurement – implications for SMEs	Sub-division - lotting – of tenders	Smith et al. (2016)	2.9.2
		“Little evidence”	Nicholas & Fruhmann (2014)	2.9.2
		Under-studied	Glas & Eßig (2018)	2.9.2
		National contract –Brazil	Sonnino, Torres & Schneider (2014)	2.9.2
Ac7f	Food hubs/co-ordinated distribution	USA, Canada	Blay-Palmer et al. (2013) Izumi, Wright,& Hamm (2010b) USDA (2019)	2.9.3
		Finland;	Kuhmonen (2017)	2.9.3
		Sweden;	Moen (2014); Bosona and Gebresenbet (2011) Bosona et al. (2013) Bjorklund & Gustaffson (2015) Björklund Abrahamsson & Johansson (2017)	2.23.9
		“knowledge gap”	Bjorklund & Johansson (2018, p.745)	2.9.3
		Citylogistick - Copenhagen	Gammelgaard (2015)	2.9.3
		UK	Morgan & Sonnino, 2008; Levidow & Psarikidou, 2011	2.20
Ac7g	Regional wholesalers	Sweden	Knutsson & Thomasson (2014)	2.23.8
		USA	Izumi, Wright,& Hamm (2010b)	2.94
		Germany	Hockerts & Wusthagen (2010)	2.94
Ac7h	Procurement litigation	Sweden	Hettne (2013)	2.23.7
Ac7i	Dynamic Purchasing Systems	general	Özbilgin & Imamoğlu (2011)	2.95
		UK	Eyo (2017).	
Ac7j	Is local food more sustainable than global sourcing?	Yorkshire Wales France Italy,UK,France, Switzerland	O'Neill (2014) Sonnino & McWilliam (2011) Bui et al. (2016) Schmitt et al. (2017)	2.9.7
AC8	<u>Safeguarding animal welfare & biodiversity</u>		See below.	2.10.1
AC8a	Free range eggs		Mench & Rodenburg (2018) Newberry (2017) Windhorst (2017)	2.10.2

Ac8b	Sustainable fish?	Marine Stewardship	Gulbrandsen (2009) Goyert et al. (2010) Christian et al, 2013;	2.10.4.a
		Land-based fish farming	Martins et al. (2010) Graber & Junge (2008)	2.10.4.b
		Coastal fisheries	Urquhart & Acott (2013)	2.10.4c
		Public procurement	Urquhart & Acott (2013) Bianchini, Muzzini & Pagliarino (2010)	2.10.4c
Ac8c	Sustainable palm oil		Laurance et al. (2010) Schouten & Glasbergen (2011) Edward & Laurance (2012) Ruysschaert & Salles (2014). Ostfeld et al. (2019)	2.10.5
Ac8c	Brazilian beef		Persson, Henders,& Cederberg (2014). Fearnside (2017) Da Silva et al. (2017)	2.10.6
AC9	<u>Promoting decent working conditions among suppliers</u>		See below.	2.11
AC9a	Fairtrade		Fisher (2013) Nicholls & Opal (2007) Dragusanu et. al. (2014,) Oya, Schaefer & Skolidou (2018).	2.11.1
		Public procurement [Under-researched]	Hughes, Morrison & Ruwanpara (2018)	2.11.1
AC9b	Modern Slavery	Overview	Miers (2003) Kara (2017) Kotiswaran (2017)	2.11.2
		International business	Stringer & Michailova (2018)	2.11.2
		Thailand – fish	Chantavanich, Laodumrongchai & Stringer (2016)	2.11.2
		Public sector procurement	Guiliani (2018)	2.11.2
AC10	Supporting Innovative Products	USA Italy	Poppendieck (2010) Obwegeser & Muller (2018) Uyarra et al. (2014) Vechiatto & Roveda (2014)	2.12

AC11	<u>Reducing environmental impacts</u>		See below.	2.13
	Case study – elderly catering	Denmark	Saxe et al. (2018)	2.13..1
	Case study – school catering	Turin	Cerutti et al. (2016)	2.13.2
	Insitutional catering	Lombardy	Caputo et al. (2017)	2.13.3
	School catering	UK	Laurentiis Hunt & Rogers (2017)	2.13.4
AC12	Desirability of reducing meat		Hallström, Carlsson-Kanyama, Börjesson (2015) D'Silva & Webster (2010) Hallström, Röö, & Börjesson, (2014) Harwatt et al. (2017) Salonen, Siirilä, & Valtonen (2018) Springmann et al. (2016); Röö et al. (2017). D'Silva & Webster (2010, p. 41) Carlsson-Kanyama & González,(2009). Kristensen et al. (2016)	2.13..5
AC13	Catering practices		See below.	
AC13a	Reducing meat usage	Ghent Finland Gothenburg	Leenaert (2012) Lombardini & Lankoski (2013) Kurz (2018)	2.14
AC13b	Preparing food from fresh ingredients	UK USA Denmark	Carey (2013) Soil Association (2018) Hildebrand et al. (2018) Jackson & Viehof (2015) Pepper & Milson (1984) Sørensen, Tetens, , Lassen, & Løje, (2016)	2.15.1 2.21.2
AC13c	Increased staff training...and job satisfaction	USA UK	Hildebrand, (2012) Hildebrand et al, (2018) Kimberlee et al. (2013)	2.15.2

		Denmark	Sørensen, Løje, Tetens, Wu, Neal, and Lassen (2016) Mikkelsen & Sylvest (2012)	2.15.2
		Ireland	Goggins (2018)	
AC13d	Introducing seasonal menus	Sweden; Italy	Roos & Karlsson (2013) Maietta & Gorgitano (2016)	2.16
AC13e	Reducing food waste	Sweden Sweden Sweden Sweden	Steen et al. (2018) Eriksson et al. (2017) Eriksson et al. (2018) Eriksson, Lindgren & Osowski (2018)	2.17.1
		UK	WRAP (2011) WRAP, (2019) Wickramasinghe et al. (2017) Tonini, Albizzati & Astrup (2018).	2.17.3
		Denmark	Thorsen et al. (2015) Jensen & Teuber (2018)	2.17.2
AC13f	De-centralised versus centralised kitchen systems	Italy Rhode Island India Sweden	Decatoldo & Fiore (2018) Richards et al. (1993) Ali & Akbar (2015) Joseffson et al. (2017) Eriksson et al. (2017)	2.18

Table 7 Summary of Academic Literature relating to the United Kingdom, Denmark and Sweden (AC14-AC18)

AC14	United Kingdom	School meals policy	Gustafsson, 2002; Long (2018) Nelson & Nicholas, (2006)	2.20.1
		New school food standards and surveys of meal take-up		2.20.2
		Procurement case studies	Morgan, (2014) Morgan & Sonnino (2008) Morgan & Morley (2014)	2.20.3
		Cumbria	Levidow and Psarikidou (2011)	
		Food for Life Partnership	FFLP (2011) ; FFLP (2013). Soil Association (2014 & 2017). Weitkamp et al. (2013); Jones et al. (2012)	2.20.4
		FFL & pupils	Kimberlee et al. (2013)	
		job satisfaction transferability	Gray, Orme, Pitt & Jones (2016;) Gray et al. (2017); Gray et al. (2015)	
		local food spend	Kersley & Knuutila, (2011)	2.20.4
		FFL in schools under-studied		
		FFL in universities	Brindley & Oxborrow (2013) Stahlbrand (2016)	2.20.5
		FFL impacts on suppliers	Morley (2020)	2.20.6
		Oldham case study	Morley & Morgan (2021)	2.20.7
AC15	Denmark	Organic food & school catering - origins	Bergström Soler & Shanahan, (2005) He & Mikkelsen, (2008) Hansen (2008, p.10) Loes & Nolting (2011). He & Mikkelsen (2008) Kristensen et al. (2009) Mikkelsen & Trolle, (2004) Copenhagen House of Food (2019) He & Mikkelsen (2009) MAFF (2015)	2.21.1
		Organic conversion process	Mikkelsen & Sylvest (2012)	2.21.2

			Sørensen, Tetens, Lassen & Løje, (2016)	
		Kitchen workers	Sørensen, Løje, Tetens, Wu,, Neal & Lassen (2016)	2.21.2
		Measurement	Sørensen,, Lassen,, Løje & Tetens, (2015.)	2.21.2
		Copenhagen House of Food .	Smith et al 2016 Hansen, Hansen, Dal & Kristensen (2020) Nyberg (2019) Nyberg, & Sylow (2021).	2.21.2
		Citizen support	Mørk., Bech-Larsen, Grunert & Tsalis, (2017)	
		Local food procurement	Ruge & Mikkelsen (2013)	2.21.3
AC16	New Nordic Food	Denmark Denmark Denmark Denmark Denmark Denmark	Mithril et al. 2012) Bere & Brug (2009) Kristensen et al. (2016) Andersen et al. (2014) Sørensen et al. (2015) Galbete et al, (2018}	2.22
AC17	Sweden			
		Free school meals (FSM) First quality evaluation	Gulberg, (2006) Patterson & Elinder, (2014)	2.23.1
		Educational importance	Waling & Olsson (2017) Persson Osowski & Fjellstrom (2018) Elinder et al. (2018)	
		Lack of evaluation of FSM – surprising	Bere & Stea (2017, p.1)	2.23.1
		Organic farming encouraged – environmental policies	Lohr & Salomonsson (2000) Saifi & Drake (2008) Rasmussen (2008) Larrson, (2017); Grimvall, Sundblad & Wallin (2018)	2.23.2
		Public food research gap		2.23.3
		Little research on environmentally friendly food in catering	Bergström, Soler Shanahan, (2005, p.309)	2.23.3
		Survey of professional food purchasers	Grankvist & Biel (2007)	2.23.3
		Survey of catering managers	Post, Shanahan & Jonsson (2008)	2.23.4
		Survey of food localisation in municipalities	Granvik (2012)	2.23.5

		Legal disputes over public food procurement	Hettne (2013)	2.23.6
		Animal welfare legislation	Vail, Hasund & Drake (1994) Lagerkvist & Hess(2010) Bock and Van Huik (2007) Schwartz (2018)	2.23.6
		Organic food promotion in Sweden	Larrson (2017) Rundgren (2016) Persson Osowski & Fjellstrom (2018)	2.23.7
		Municipal case studies – Malmö, & Klippan	Moragues-Faus, & Morgan (2015) Andersson & Nilsson (2012); Knutsson & Thomasson (2014)	2.23.8
		Municipal Distribution Centres	Bosona et al., (2013) ; Moen (2014); Bjorklund & Gustaffson (2015)	2.23.9
		Little research till now on business models and critical success factors for urban consolidation centres.	Björklund Abrahamsson & Johansson (2017)	2.23.9
		survey of smaller Swedish food producers	Aggestam, Fleiß, & Posch (2017)	2.23.9
		Developing procurement decision-making tools - outline of unsuccessful research proposal.	Lindström & Röcklinsberg, (2013); Brunius, Moula, and Sandin (2016); Röcklinsberg et al. (2016)	2.23.10
		Meal planning software – carbon footprint.	Florén, Amani & Davis (2017)	2.23.10
		Survey of food in elderly care	Josefsson et al. (2017)	2.23.11
		Pro-organic policy & organic agriculture	Lindström, Lundberg, Marklund (2020)	2.23.12

Chapter Three Overview of national policies : Sweden, Denmark and the UK

3.1 Introduction

This chapter provides a brief overview of relevant national policies relevant to sustainable food procurement and catering in these three countries. It notes how around the years 2001-2004 new policies emerged in all three countries. It discusses initiatives taken by national governments. It shows how these related to market trends and initiatives which happened at local and regional level – led by local and regional public authorities and NGOs. As regards availability of national statistics there is a marked contrast between the three countries. In Sweden voluminous statistics about the public meal system including purchases of organic food have been collected by government and NGOs. There is much less information available about Denmark and even less from the UK. At the end of this chapter in Table 16 below an attempt is made to compare public food policies in the three countries as regards free school meals, national procurement strategies, organic food, accreditation schemes, buying local (or national), national food procurement contracts and food waste reduction.

3.2. Sweden

3.2.1 Growth in organic food consumption

Organic food consumption in Sweden is measured in terms of the monetary value of food purchased – as can be seen in Fig 1 below. There was rapid growth in organic food consumption up till 2017 (Manson, 2018). The figures for 2018 showed a slow down in growth of the overall organic food market, with increased interest in local food (Manson, 2019). Ekoweb predicted a lower increase in organic food in the years to

2028 than with their 2016 forecast, with increased consumption of conventional vegetarian food rather than organic animal products. Ekoweb forecasted that 13% of the Swedish market would be organic by 2028 (Ekoweb, 2019b; Manson 2019).

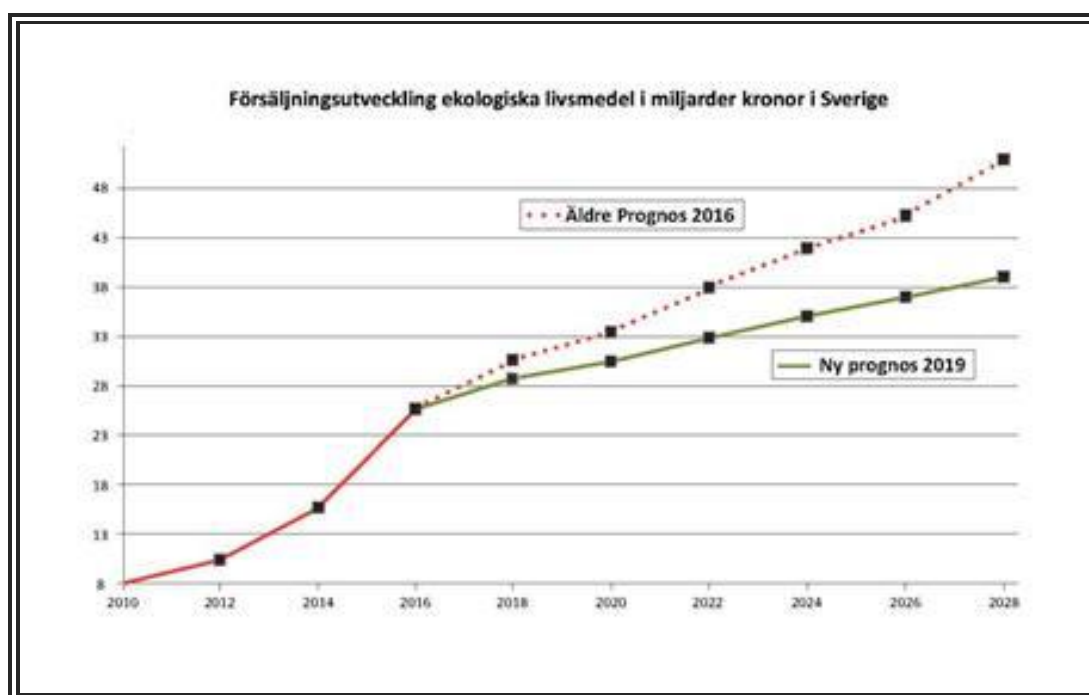


Fig 1 Organic Food Sales in Sweden – 2010 to 2018 – with forecast to 2028 Previous forecast from 2016 and new, lower forecast, January 2019 SEK millions (Ekoweb, 2019b)

3.2.2 Organic Accreditation in Sweden – KRAV & EU Organic

The statistics in Fig 1 and Tables 6,7 and 8 relate to all organic food in Sweden. In 2012 about 80 per cent of organic food consumed in Sweden had KRAV accreditation. KRAV's requirements are considerably in excess of EU organic requirements, particularly regarding animal welfare renewable energy, environment and working conditions. The KRAV-accredited percentage of organic food sales had fallen steadily. In 2019 the two principal wholesalers selling to public kitchens – reported KRAV percentages of 40% (Martin & Servera) and 48% (Menigo) (Ekoweb, 2019, p.26)

3.2.3 Provision of public meals in Sweden

Sweden has very large-scale provision of public meals, which is almost entirely overseen by local authorities. The twenty two regions are responsible for hospital food (around 74,000 meals/day). The 290 kommuner are responsible for provision of meals to pre-school and primary and secondary school children and also to elderly people and leisure facilities, totalling around 2.8m meals per day (Livsmedelsverket, 2018a). The provision of free meals to children is a legal requirement for primary age and pre-school children and a very widespread practice with secondary school children. The Swedish public procurement agency has estimated that in 2017 the Swedish public sector spent SEK 9.7 billion on food purchases (Upphandlingsmyndigheten, 2019c) (Equivalent to approximately £820.6m). The 2017 Food Agency survey published by in November 2018 provided detailed information about the meal services provided by each Swedish kommun, with results by Kommun reported in a spreadsheet attached to the survey report (Livsmedelsverket (2018b). Table 8 provides a small excerpt from these detailed results – showing the twenty Kommunes with the biggest food spend plus percentages of organic food, Swedish beef and Swedish poultry meat.

Table 8 Food Agency: top twenty food spends 2017 by kommune with % of organic, Swedish beef & poultry (Livsmedelsverket, 2018b).

Kommune	County	food spend SEK	organic %	% Swedish beef	% Swedish Poultry meat
Stockholms stad	Stockholms län	300000000	40.79	NK	89.01
Malmö stad	Skåne län	228938545	64	NK	NK
Örebro kommun	Örebro län	104304000	63	NK	91.32
Lunds kommun	Skåne län	103000000	74	98.5	98.5
Jönköpings kommun	Jönköpings län	102000000	24	91	99
Uppsala kommun	Uppsala län	96000000	42	95	99
Helsingborgs stad	Skåne län	87000000	45.6	87.5	94
Västerås stad	Västmanlands län	85000000	48	49	94
Eskilstuna kommun	Södermanlands	85000000	52.4	100	69
Norrköpings kommun	Östergötlands län	80000000	38.4	76.25	91.18
Huddinge kommun	Stockholms län	78000000	44	69	70
Gävle kommun	Gävleborgs län	74508957	41.9	Not known	Not known
Sundsvalls kommun	Västernorrlands	74000000	30.81	80.3	73.09
Skellefteå kommun	Västerbottens län	70000000	13	99.5	95
Botkyrka kommun	Stockholms län	62450000	35	40	67
Kungsbacka kommun	Hallands län	60000000	34	80	68
Halmstads kommun	Hallands län	57815418	38	Not known	Not known
Karlstads kommun	Värmlands län	55912277	32	76	77
Umeå kommun	Västerbottens län	55149000	28	72.8	89
Haninge kommun	Stockholms län	50000000	37	20	80

3.2.4 Pro-organic policies: agriculture & public procurement

The change in government policy towards promotion of organic food in public catering took place during the years 2004 to 2006, during the Social Democrat-led government of Göran Persson. A survey during 2004 showed that organic food made up about 2.5% of public sector food consumption, although some kommuner had as much as 20% (Nykvist, 2006). A new sustainable development strategy for Sweden published in 2005 highlighted the importance of food in promoting sustainable development and suggested a 25% target for organic food in public catering and reduction of overall meat consumption (Edman, 2005). On 16 May 2006 a modest budget was put in place to fund measures designed to encourage more organic food in public catering (Nykvist, 2006; Regeringen, 2006). By 2010 the amount of organic food in public catering had increased to around 10%. In some local authorities the increase was much greater than that (Riksdagen, 2010).

3.2.5 Policies of Centre-right government

Between 2006 and 2014 Sweden was ruled by a centre-right government led by Fredrik Reinfeldt. There continued to be considerable cross-party consensus on environmental and public service issues. The government continued to encourage organic agriculture. However the government decided after 2010 not to continue with the 25 per cent target, leaving it to individual kommuner to decide about organic food (Miljömagasinet, 2014)

3.2.6 Moves to improve quality of school food

Increasing organic food in schools was part of a wider move to improve the quality of Swedish school food. In 2007 the government introduced new guidance promoting better school food (Livsmedelsverket, 2007). An important role in encouraging better practice was played by the TV program Matakuten in 2008 and 2009 which featured

three chefs visiting schools and showing how school food could be improved (Bergfeldt, 2008). Schools were encouraged to cook from scratch rather than buying in prepared meals (Bjarle, 2021).

3.2.7 Local authorities increase organic food usage, 2010-2014

The work of the Organic Food Centre (Ekomatcentrum) has been important in giving public recognition to Swedish local authorities achieving higher percentages of organic food. From 2008 a series of detailed reports on organic food procurement in Swedish local authorities can be found on the web. From 2010 onwards they can be seen on the Organic Food Centre website. Local authorities have voluntarily provided these figures for the Organic Food Centre to collate and publish. For discussion of the tradition of transparency in Swedish local government see Kuhlmann (2010), cited in paragraph 2.6.4. The 2008 report shows the top twenty kommunes and counties ranging from 21.1% down to 14% organic (Ekomatcentrum 2008, p.9. Figures for 2007). The 2013 report indicates that there has been a very substantial increase in purchases of organic food by local authorities. It shows the top twenty kommunes and counties ranging from 46% organic down to 30.7% (2012 figures. Ekomatcentrum 2013, p. 13).

3.2.8 Regional variations in organic in public kitchens

There is a marked difference between north and south of Sweden, with considerably more organic food in the south. This is shown by the Ekomatcentrum figures. The latest county league table shows that the northernmost counties -Vasterbotten with 17 per cent and Norbotten with 23% are the counties with the lowest average percentage of organic food (Ekomatcentrum, 2019b, pp. 10-11). By contrast the southern county of Skane has 48% on average, followed by Orebro county with 46%, Sodermanland with 43% and Stockholm County with 40 per cent (Ekomatcentrum 2019b, p.p. 10-11). The top twenty kommunes for their percentage of organic food are shown in Table 9. It can be noted that the Swedish capital city, Stockholm, is not in the top twenty. It is in twenty sixth place with 42% organic food.

Table 10 shows the different levels of organic food in each of the thirty seven Skane Kommunes – showing that while Skane overall has the highest percentage of organic food in Sweden, there are very great differences within Skane county – between 80 per cent organic in Lund and 3 per cent organic in Klippan. Both the above-mentioned tables also show the percentage of food which is both Swedish and organic (Sveko) and thereby also revealing the percentage of organic food which is imported. Tables 9 and 10 also show the population figures, area and population density. At first sight there is no clear relationship between kommune population size and population density and the percentage of organic food. Kommunes with more than 100,000 people tend to have a high organic percentage. But some smaller kommunes also have high organic percentages. See for example a thinly populated rural kommune like Åre.

Eslov and Ystad have similar population sizes and densities. The quite different levels of organic food must reflect some other factor which differentiates these two local authorities. (For a possible explanation see 3.2.30 below.) The full Ekomatsligan (Organic Food League Table) shows the organic percentage for 245 of the 290 Swedish kommunes. The ten at the bottom range from 3 per cent (Klippan) up to 12 per cent (Ystad) and 14 per cent (Yokmökk) (Ekomatcentrum 2019b, p. 10-11).

Table 9 Organic Food and Swedish Organic (Sveko): top twenty kommunes (Ekomatcentrum, 2019b, p.6; Statistics Sweden,2013)

RANK	KOMMUNE	% ORGANIC	Sveko %	County	<u>Population</u>	<u>Total area</u> (km ²)	<u>Density</u> (people/km ²)
1	Lund	82%	53%	Skåne	114,061	439.91	266.98
2	Vellinge	78%	47%	Skåne	33,806	705.46	237.05
3	Malmö	65%	44%	Skåne	336,226	332.64	1,985.98
4	Örebro	64%	39%	Örebro	140,295	1,620.6	102.17
5	Borlänge	61%	N/A	Dalarna	49,825	635.81	85.34
6	Eslöv	57%	39%	Skåne	31,793	424.68	75.87
7	Södertälje	56%	37%	Stockholm	90,677	694.24	172.67
8	Trosa	54%	36%	<u>Södermanland</u>	11,619	664.76	55.4
9	Eskilstuna	51%	30%	<u>Södermanland</u>	99,745	1,250.49	90.69
10	Åre	50%	N/A	<u>Jämtland County</u>	10,378	8,236.54	1.44
10	Tanum	50%	38%	<u>Västra Götaland</u>	12,287	2,351.35	13.4
12	Västerås	49%	29%	<u>Västmanland</u>	141,845	1,136.71	148.08
13	Motala	48%	32%	<u>Östergötland</u>	42,126	1,267.23	42.83
13	Emmaboda	48%	N/A	<u>Kalmar</u>	8,969	718.65	13
15	Nyköping	47%	29%	<u>Södermanland County</u>	52,835	2,066.41	37.19
15	Ockelbo	47%	N/A	<u>Gävleborg County</u>	5,825	1,129.04	5.47
15	Orust	47%	26%	<u>Västra Götaland</u>	15,108	882.99	39.09
15	Nykvarn	47%	33%	<u>Stockholm County</u>	9,502	176.99	62.2
19	Göteborg	46%	N/A	<u>Västra Götaland</u>	567,337	1,025.37	1,188.69
19	Upplands Bro	46%	28%	<u>Stockholm</u>	24,569	325.23	104.34

**Table 10 Organic & Swedish Organic (Sveko) in Skåne County
(Ekomatcentrum, 2019b pp. 6, 16 ; Statistics Sweden, 2013)**

Kommune	% organic	% Swedish organic - Sveko	Population	Total area (km ²)	Density (people/km ²)
Lund	82	53	114,061	439.91	266.98
Vellinge	78	47	33,806	705.46	237.05
Malmö	65	44	336,226	332.64	1,985.98
Eslöv	57	39	31,793	424.68	75.87
Helsingborg	45	28	132,706	423.97	385.76
Skurup	42	N/A	14,997	510.96	77.47
Kristianstad	41	26	80,948	1,818.24	64.95
Höör	40	26	15,671	320	53.88
Kävlinge	40	27	29,604	292.45	194.05
Svedala	40	26	20,080	227.12	92.09
Hässleholm	38	25	50,187	1,306.27	39.56
Landskrona	38	24	42,907	300.64	305.87
Osby	33	21	12,692	599.84	22.03
Perstorp	32	19	7,104	161.92	44.74
Östra Göinge	32	20	13,632	451.15	31.56
Svalöv	29	21	13,286	388.62	34.3
Ängelholm	28	20	39,821	478.06	94.8
Lomma	26	21	22,498	90.2	405.22
Bromölla	25	N/A	12,331	197.14	75.88
Höganäs	24	N/A	25,016	676.12	165.84
Trelleborg	21	16	42,774	1,175.03	125.85
Burlöv	20	15	17,158	19.2	907.83
Båstad	20	15	14,245	881.9	67.9
Staffanstorp	19	14	22,615	107.28	211.71
Ystad	12	6	28,593	1,189.32	81.68
Åstorp	12	N/A	14,896	92.47	161.53
Tomelilla	8	3	12,900	397.39	32.58
Klippan	3	N/A	16,725	379.41	44.68
Bjuv	N/A		14,813	115.75	128.5
Hörby	N/A		14,912	433.05	35.55
Simrishamn	N/A		18,900	1,261.15	48.29
Sjöbo	N/A		18,412	506.63	37.41
Örkelljunga	N/A		9,658	329.7	30.22

3.2.9 Organic Agriculture – regional distribution in Sweden

Organic agriculture in Sweden is concentrated in southern Sweden – with the largest numbers of organic farmers in Västra Götaland, Östra Götaland and Skåne counties (See map in Fig 4). Statistics are available on the growth of organic agriculture in each Swedish county see Carlberg, & Halling (2019)



Fig 2 Sweden - KRAV Organic Farmers distribution 2015 (Halling, 2016)

3.2.10 A higher percentage of organic food not necessarily linked to increased costs

Sweden is almost certainly unique in Europe in that figures are available broken down by kommune for both the cost of school meals in that kommune per child per annum and the percentage of organic food used in the meals. These figures have been analysed in a report produced by the Ekomatcentrum using purchasing statistics from 155 municipalities for 2017 and comparing these with the organic percentage in these municipalities. The additional cost for a municipality with 60 percent or more organic purchases was SEK 2.9 / kg of purchased food compared with the group 0–9% organic. This corresponded to approximately 12 percent in additional costs. Ekomatcentrum concluded that the additional cost of having 60 per cent organic food was quite modest. Ekomatcentrum argued that with those municipalities with over 60 per cent organic food, extra costs resulting from the increase in organic food were largely compensated for by savings made in various ways – particularly reducing waste and meat usage.

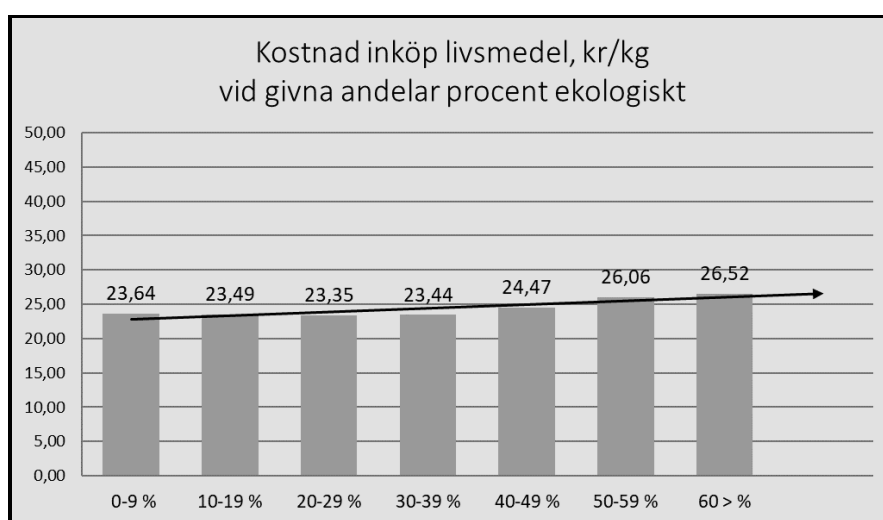


Fig 3 Sweden: Cost of Food procurement kronor per kg and the percentage of organic food (Ekomatcentrum 2019)

3.2.11 2013 Good School Meals – 2nd edition

The first detailed government guidance on the quality of school food was issued in 2007 and focussed on nutritional quality (Livsmedelsverket, 2007). The second edition of guidance on school meals issued in 2013 placed a much greater emphasis on environmental sustainability (Livsmedelsverket, 2013, pp 25-26). It stressed that kitchens should

- Reduce meat usage and increase vegetable usage since meat has the greatest environmental impact.
- Only use fish from sustainable sources – such as MSC
- Use more coarse vegetables (root vegetables, cabbage and onion) which can be stored for long periods and are usually grown in open fields with less climate impact than using greenhouse .
- Reformulate meat dishes using a higher proportion of vegetables
- Buy foods in season – particularly delicate fruit and salad vegetables such as tomatoes and lettuce (Out of season these must be imported or grown in greenhouses)
- use more organic foods, reducing environmental impact of pesticides.
- Use potatoes or cereal-based foods such as pasta rather than rice , which has higher environmental impact
- reduce food waste
- Coordinate transport to and from the kitchen

3.2.12 September 2015 – new public procurement authority

Historically public procurement in Sweden had experienced a significant number of legal disputes, in which suppliers had succeeded in overturning procurement decisions made by public buyers..In September 2015 the newly-elected Social Democrat led government set up a new government department – the procurement authority (Upphandlingsmyndigheten) to provide advice and support for public buyers and suppliers. By giving authoritative advice to public buyers, the intention was to minimise further legal challenges to procurement decisions – including those aimed at

encouraging Swedish suppliers – including smaller companies - to have a greater share in public procurement. The Civil Affairs Minister who brought about this change was Ahmed Shekarabi – previously a law professor who had advised Sigtuna Kommune in its successful lawsuit in 2012 (Ander 2015). The significance of the 2012 Sigtuna judgement was that Sigtuna municipality had imposed animal welfare requirements within its meat tender for, among other things, antibiotic use and transport times for slaughter. The large wholesaler Martin & Servera took legal proceedings arguing that this breached EU law. The court's decision that Sigtuna had acted lawfully was an important green light to encourage kommunes to impose requirements in tenders which in practice favoured Swedish food (Ander, 2015). The percentage of food tenders where suppliers have disputed the public authority's award by resorting to court action fell drastically from a high of 14.2% in 2012 to only 3.7% in 2017. (Upphandlingsmyndigheten, 2019b, p.5).

3.2.13 Spring 2016 - new procurement law

The new procurement law incorporates the 2015 EU Procurement Directive into Swedish law. It encourages public buyers to take account of social and environmental issues and to divide up procurement to assist small producers to compete for a share. Skekarabi explicitly states that it is intended to encourage public purchases of Swedish food – by mandating public buyers to specify Swedish animal welfare standards within the tenders. Total public spend on food was estimated at just over SEK 10 billion annually. (Ander, 2015)

3.2.14 National Food Strategy June 2017 – encouraging organic and Swedish food

The first Swedish National Food Strategy was approved by the Swedish parliament with cross-party support in June 2017, setting out policy until 2030. The Strategy aimed at promoting greater food production within Sweden – both conventional and organic. Swedish conventional food is produced to high environmental and animal welfare standards. Small and medium-sized suppliers should be encouraged to tender

for public food and catering (Regeringkansliet , 2017b, pp. 3,9.11.17; Ministry of Enterprise and Innovation, 2017). The National Food Strategy included a package of new financial assistance for the promotion of organic food in public catering and private restaurants. By the beginning of 2018 the government had formulated goals that by 2030 30% of Swedish agricultural land should be organic and public consumption in the same year would consist of 60% organic food (Koch et al, 2018).

3.2.15 Local authorities continued to increase amounts of organic Food – including Swedish organic

The continued increase in organic food in Swedish kommuner can be seen from the reports published annually by the Organic Food Centre. The report of the 2015 survey shows that the top twenty kommuner ranged from 57% organic down to 38 % organic (2014 figures – Ekomatcentrum, 2015, p. 15). The 2017 ekomatsligan [organic food league] showed that the top twenty kommuner ranged from 80% down to 40 % . Figures relate to 2016. (Ekomatcentrum, 2017, p. 8). From 2017 the Organic Food Centre's reports included a new league table – the Svekomatsligan – which showed the percentage of food purchased which is both Swedish and organic. This was aimed at rebutting the accusation that the push for organic was undermining Swedish agriculture by encouraging food imports. The 2017 svekomatsligan showed that the top twenty kommuner ranged from 45 % Swedish and organic down to 25 % (Figures relate to 2016). A total of 96 kommuner supplied figures (Ekomatcentrum, 2017, p.19). The 2019 ekomatligan showed that the top twenty kommuner ranged from 82 % (Lund) down to 46 %. Figures were submitted by 245 kommuner (Ekomatcentrum, 2019, p.6). The 2019 svekomatligan had the top twenty kommuner between 53 % and 28 % Swedish and organic food. The number of kommuner submitting figures had risen to 192 (Ekomatcentrum, 2019, p. 16).

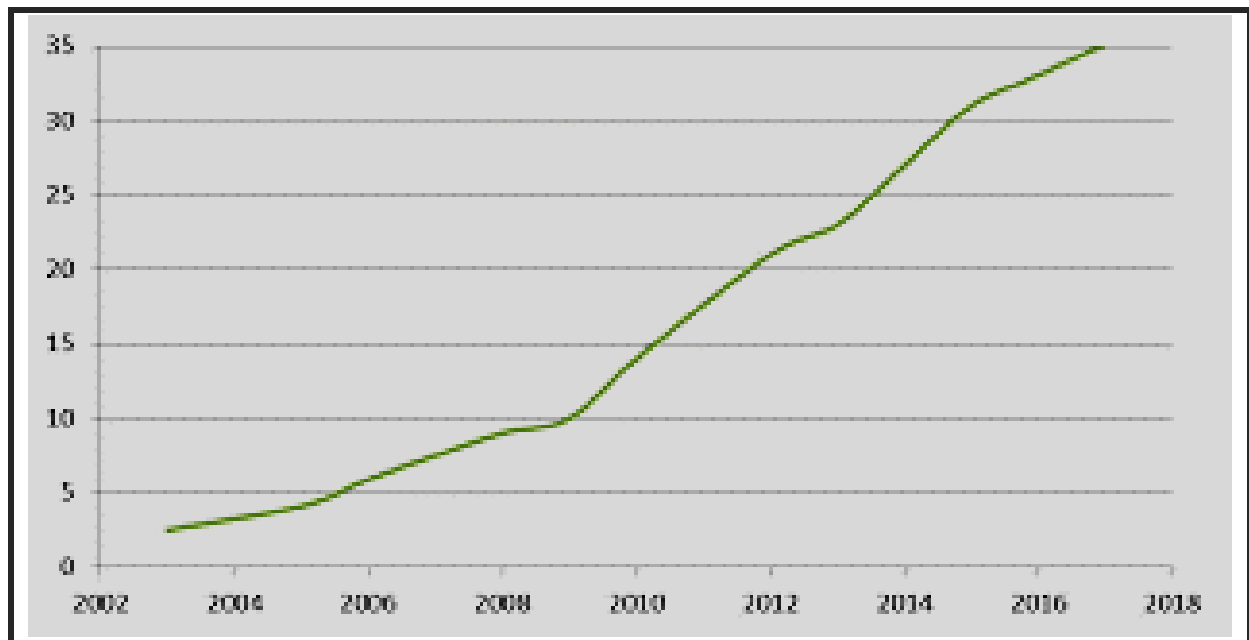


Fig 4 Sweden: Organic food as % of total sales to public kitchens (Ekoweb, 2019, p.18)

3.2.16 General election – 9th September 2018

The general election was followed by lengthy negotiations and it was agreed in January 2019 that a Social Democrat/Green minority government would be tolerated by two centre-right political parties – Liberals and Moderates – subject to a 73 point agreement (Nordström, & Lindau, 2019). This agreement committed the government to strengthen Swedish agriculture, support farmers, develop fossil-independent agriculture, introduce origin labeling of meat in restaurants and work internationally to reduce farm antibiotic usage. This agreement says nothing about organic food. The government continued to support the target for 60 per cent organic food in public kitchens and Sweden's organic farmers organisation stressed that the main beneficiaries of this policy would be Swedish farmers (Lunneryd, 2019).

3.2.17 Procurement Authority - Improving food procurement practice

The government's Procurement Authority continues to focus on improving procurement practices within the public sector and has paid particular attention to public food procurement. This can be seen in a detailed report published in February 2019 which highlights a number of problems: (Upphandlingsmyndigheten, 2019c). Public food procurement in Sweden is de-centralised. There were 268 different food procurements in Sweden in 2017. It follows that there is likely to be a need to improve the expertise of procurement staff - in particular with

- promoting opportunities for Swedish farmers
- encouraging the public sector to set requirements and choose foods that meet society's ambitions with regard to the environment, animal welfare and social responsibility

3.2.18 Local food procurement

In August 2018 the national meat trade organisation published a detailed survey of meat procurement by Swedish kommuner, with 214 responses out of 290 kommuner (Svenskt Kött, 2018). The survey revealed extensive efforts to encourage local suppliers:

- 32 percent had coordinated goods distribution,
- 30 percent of the municipalities used direct procurement for purchases below the permitted threshold of SEK 534,890
- 70 per cent of kommuner practised early dialogue with local suppliers and producers
- 73 percent of municipalities divided contracts into smaller parts
- 87 per cent said there was political support for priorities other than lowest price
- When asked to rank low price, organic, low antibiotic use and animal welfare, a quarter said that low prices were most important

3.2.19 Food Wholesalers

Between 2014 and 2016 the national association of catering managers in public kitchens surveyed its members in communes and regions on their experiences with four food wholesalers (Kost Och Naring, 2016). The two very large companies which dominated the market were Martin & Servera and Menigo. There were two smaller wholesalers – Svensk Cater and Gunnar Dafgård. The resulting report – the Wholesale Barometer – examined wholesalers’ performance in meeting customer requirements – particularly:

- Missing goods
- Goods damaged or inadequately packed
- Deliveries made earlier or later than agreed
- Insufficient response to complaints

Overall customer care performance improved slightly in 2016 compared to 2015. Menigo’s performance was significantly worse than the other three companies. The Barometer noted with approval that the number of lawsuits mounted by Menigo and Martin & Servera which sought to “review” (overturn) local authority procurement decisions fell from 20% of all current agreements in 2015 to 12% in 2016. The Swedish Association of Public Purchasers reported in May 2021 that the number of such reviews had fallen further to around 5% of all tenders (Sveriges Offentliga Inköpare, 2021).

3.2.20 Municipal Coordinated Goods Distribution

Some communes have reduced their dependence on large food wholesalers by establishing municipal coordinated distribution centres. All deliveries to commune kitchens are made by a distribution contractor operating from a distribution centre to which suppliers have brought their products. This reduces vehicle movements and traffic pollution. It could potentially help smaller food producers because they would

no longer have to transport their food to every public kitchen. Early Swedish experiments with municipal coordinated distribution of food and other goods are discussed in academic literature (2.23.10). The National Centre for Coordinated Distribution received government funding in June 2018 to promote this approach (Nationellt centrum för kommunal samordnad varudistribution, 2019). By November 2020 the number of communes which had established coordinated goods distribution had risen to 45 (Holm,2020).

There is extensive documentation on the web of the establishment of coordinated distribution projects. A national procurement agency case study reported that a project within Sandvik kommun was very successful. . There were extensive preparatory discussions within the municipality and with suppliers. Clear goals were agreed which could be followed up subsequently. Driving distances had decreased more than expected. Goods deliveries cost less. Reduction in vehicle movements had made the environment safer for children and staff. The number of local suppliers had increased from one to four and even more during the vegetable harvest season. (Upphandlingsmyndigheten, 2019a). For other examples see :

- Sodertorn (Persson 2013).
- Kalmar (Intelligentlogistik, 2014).
- Orebro (Hoglander, 2015).
- Halmstad (Halmstad, 2016).
- Linkoping (Akeritidning, 2017).
- Five communes – Hoor, Eslov, Horby, Bjuv, Astorp and Klippan (Abrahamsson, 2018).

Government funding for the Centre expired at the end of 2020. For lobbying to extend the funding see Holm, 2020. On the other hand the large wholesalers have been lobbying against public money to promote coordinated distribution – arguing that they already provide communes with an excellent service (Mårtensson, 2020a).

3.2.21 Cooking from fresh ingredients & seasonal menus

The survey of communes by School Food Friends in 2014 asked whether communes had policies/ goals for how large a share of school food should be prepared from scratch. The survey found that between 2012 and 2014 the percentage of communes with these policies/goals rose from 31% to 43%. Moreover even where communes did not have formal policies/goals, they often strove to prepare as much as possible from scratch (Skolmatens vänner, 2014, pp 15-21). Individual communes frequently mentioned on their websites that they prepare much food from scratch and they have adopted a seasonal menu. Examples include Halmstad (Lydahl, 2017), Hassleholm (2021) and Orebro (2021).

3.2.22 Reducing food waste in public kitchens

3.2.22a Gothenburg Model

The City of Gothenburg reported in January 2019 that food wastage in its kitchens had been halved in two years. The City had developed a new waste reduction methodology called the Gothenburg Model. The Gothenburg model covers all aspects of kitchen practice: measurement, menu planning, portion calculation, absence reporting, purchasing, storage, cooking, serving and reuse of leftovers. The manual is in every kitchen and 1,200 kitchen staff have been trained. It has also begun to be used in other municipalities (Rehnström, 2019).

3.2.22b National food waste survey

In September 2019 the Swedish Food Agency (Livsmedelsverket) initiated a national survey of food waste in public kitchens (Fritz, 2019; Livsmedelsverket, 2019a). The survey report was published on 16th January 2020 (Fritz, 2020a & 2020b) with some

form of food waste data contributed by 211 of the country's 290 municipalities. The survey calculated that combining the median value for different types of food waste (kitchen, serving and plate waste) there was total food waste of 60-70g per diner. The lowest level of food waste was in school lunches, followed by preschools. The greatest food waste was in nursing homes, where much less data had been collected. Serving waste - food that has been in the serving area or on the salad table – accounted for most food waste. The survey showed that there were large variations between the municipalities in terms of how much food was thrown away, which reflected successful food waste reduction initiatives in some kommuner. The figures supplied by each kommun were published in an excel file appended to the report (Fritz, 2020c).

The report concluded that there was a need to achieve more standardized measurements at the municipal level, to facilitate comparisons and generate national statistics. Further discussion was required in order to establish a national target for food waste reduction in public kitchens by 2030. A further national survey of food waste in public kitchens was planned to take place during 2021 (Livsmedelsverket, 2020)

3.2.23 Reducing meat usage in public kitchens

There has been a widespread effort by Swedish kommuner to reduce meat usage in public kitchens. Government guidance has encouraged this since 2013 (Livsmedelsverket, 2013, pp 25-26). Söderlund (2015) reports on a survey of kommuner which showed that 40.3 % of kommuner had introduced one meat free day a week or reduced meat consumption in another way, replacing it by plant-based food. This could be compared with the previous year when 30% of kommuner had done this. Aktuell Hållbarhet – Miljöbarometern (2016) gives the results of a further survey where the percentage of kommuner introducing these changes had risen to 49.3% - with a table showing the response of each kommun. See Appendix 5.

The most recent survey of Swedish kommuner was published by Djurens Rätt (Swedish Animal Rights) on 27th May 2020. The survey was conducted during the period December 2019 to April 2020 and 214 out of 290 kommuner participated. It

showed that over 80 per cent of communes had reduced meat usage (Mansouri, 2020). The survey also found that eight out of ten children in primary school were able to choose a vegetarian dish every day. In pre-schools however only one in four municipalities served vegetarian food to children in pre-school as a matter of course (without parents having to pre-order it). There is still a relatively large proportion of municipalities who refuse to serve vegan to those who demand it. And only a few municipalities choose to make any large proportion of the vegetarian dishes entirely plant-based. (Mansouri, 2020)

3.2.24 Reducing carbon footprint in public kitchens

For several years Swedish communes have shown increasing interest in reducing the climate impact of public kitchens. The 2018 Livsmedelsverket survey of public meals included a table showing the response to question K16 about whether each kommune measures the climate impact of public meals. Of 260 communes, 81 said yes, 156 said no, 6 said “I don’t know” and 17 did not respond (extract from Livsmedelsverket, 2018b). Axelsson, Bell & Gewecke (2018) presents a case study of two communes: Umeå and Ekilstuna. It stresses the importance of reducing meat usage in public kitchen and increasing the percentage of organic and local food. Menus should be seasonally adapted to maximise local purchasing. Coordinated distribution arrangements can reduce the climate footprint of municipal goods distribution.

3.2.25 Examples of local authority policies and practice

The five examples of local authority policies and practice set out below were chosen to illustrate general themes relating to sustainable food procurement policies in Sweden. Lund is a city which has pioneered the introduction of a very high percentage of organic food into public meals. Sodertälje, Vaxjö and Borlänge were chosen because these three communes have received extensive international publicity due to their involvement in European projects. These four communes have achieved a high level of organic food. Ystad by contrast has a much lower percentage of organic food.

Table 11 Swedish Examples (Fröman, 2008, p.9; Ekomatentrum, 2013, pp.13;25; 2019b, p.6).

% organic food in public kitchens					
Kommune	Population	County	2008	2012	2018
Borlänge	49,825	Dalarna	13.7	46	61
Lund	114,061	Skane	18.3	45.8	82
Södertälje	90,677	Stockholm	15.7	44.3	56
Växjö	85,635	Smaland	N/A	33.3	42
Ystad	30,541	Skane	N/A	10.6	N/A

3.2.26 Example 1 Lund

Andersson & Sonesson (2010) give a detailed explanation of the process whereby the City of Lund went from no organic food in public kitchens in 1998 to 38 per cent in 2010. They started with a single school doing 1,400 servings a day and with substituting organic milk and fruit and vegetables for conventional. Extra money was provided to meet additional costs, although not all was needed. To control costs the cooking approach changed to a seasonal menu and cooking 75% of meals from scratch.

By 2002, the proportion of organic food in Lund Kommune was 3 percent. City politicians and senior managers now initiated a project to bring more organic food into all the City's kitchens. Information was provided to staff, parents and children about the benefits of organic food and staff were trained in new cooking methods – involving seasonal menus and reduction of meat usage. The kitchens would only use tomatoes and cucumber when they were seasonally available in Sweden and would use root vegetables in the winter. Dishes incorporating meat would have an increasing percentage of beans and lentils added to replace some of the meat. By 2004, Lund had achieved 10 percent organic food. In 2006 all political parties voted for a new environmental strategy whereby organic food was to be increased to 40 percent by

2012. A long-term plan was adopted for switching from conventional to organic food – one product at a time. Costs were cut by buying locally produced organic directly from farmers.

Food procurement was organized in collaboration with five small neighbouring communes -Kävlinge, Eslöv, Höör, Hörby and Svalöv – to achieve volume to obtain better prices from the wholesaler. By spring 2010, Lund municipality had achieved 38 percent organic food in public kitchens. Many small units like preschools had reached 80 percent or more.

By May 2019 Lund had increased organic food to over 80 per cent of municipal purchases' and the goal was 100 per cent of municipal food by 2020. The kommune was also working to reduce the climate impact of consumption.

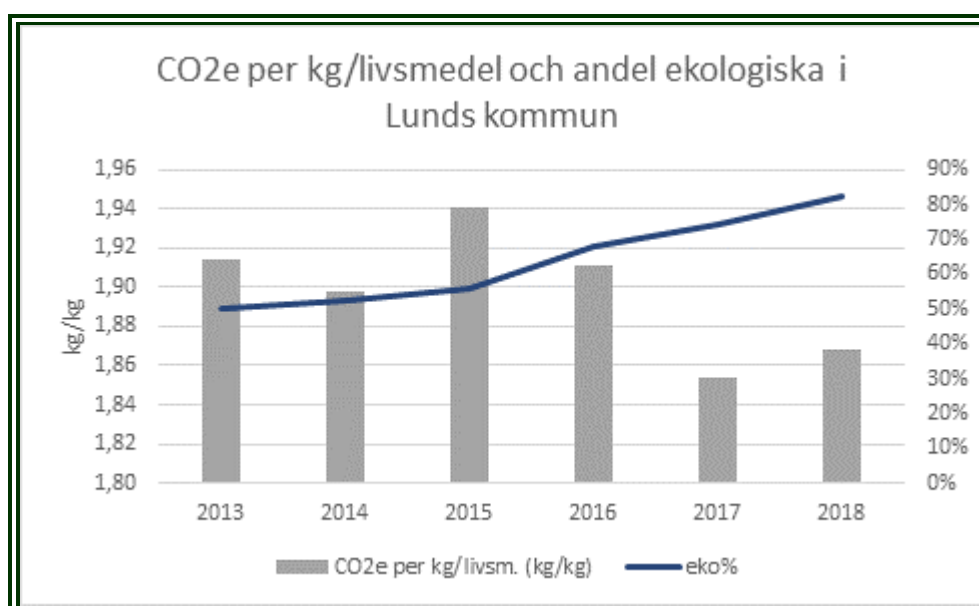


Fig 5 Carbon emissions per kg of food and organic share in Lund Kommune (Lund, 2019).

Fig 5 shows that since 2013, the proportion of organic food has increased from less than half to over 80 percent. At the same time, the climate impact per kilogram of

food served has decreased. (Lund, 2019). EkoMatCentrum figures showed that in 2017 and 2018 Lund had the highest proportion of Swedish-produced organic food in the country. This was partly because Lund buys a large quantity of local organic beef (Lund, 2019).

3.2.27 Example 2 Borlänge

In 1999 Borlänge in central Sweden decided along with two adjacent communes – Gagnef and Säter - to change the system of food distribution to schools, kindergartens and adult social care centres, by separating the transport provider from the food suppliers. Instead of having numerous trucks from different suppliers stopping at schools and kindergartens several times a day for food deliveries, the new system was planned to collect food by all suppliers in one distribution centre, and a distribution contractor would then take all the food required to a school or other establishment in a single delivery. This reduced traffic congestion and vehicle emissions and also had some effect in offering better opportunities to small local suppliers. This was the first co-ordinated goods distribution among Swedish communes and has since been followed by many other municipalities (Di Bartolo, 2014; Persson, 2010).

3.2.28 Example 3 Växjö

Växjö promotes itself as being one of the greenest cities in Europe (Slavin, 2015). There is strong political support for sustainable public procurement policies. As regards food these take the form of

- Increasing the percentage of organic and locally sourced food (within 15 km radius)
- Encourage small companies from the region to participate in food tenders
- The large-scale food contract was divided into smaller lots and the kommune signed agreements with all seventeen companies who submitted bids
- All suppliers deliver their food to a single distribution hub, rather than having to take it out to the 300 sites where the food is actually used

- Meat is purchased from suppliers who can show that animals have been treated well – 98 percent of all meat purchased in 2018 was Swedish.
- Meat consumption is being reduced, with greater usage of vegetables and legumes in cooking.
- Almost all students can choose a vegetarian alternative every day at school and one day a week is meatfree.
- Salads and vegetarian dishes are composed using what is seasonally available.
- Food waste is minimised
- Over 90 percent of food is cooked from scratch (Braic, 2013 Växjö (2019))

3.2.29 Example 4 Södertälje

The main features of Södertälje public food policies are:

- Political decision made in 2006 to increase purchasing of organic and local food for public kitchens
- Local food is defined as a maximum of 50km to 250km distance.
- The share of organic products was 18 % in 2009 increasing to 47 by 2015
- Kommune took a leadership role in European projects promoting healthy and sustainable food – particularly Diet for a Green Planet, Diet for a Clean Baltic and Baltic Ecological Recycling Agriculture & Society (BERAS).
- These projects produced a considerable volume of English publications – such as Grantstedt & Hertwig, 2015 and Södertälje (2015)
- Sodertalje has promoted a variant of organic agriculture called Ecological Recycling Agriculture – with a greater emphasis on recycling within the food production and consumption process (Granstedt & Seuri, 2013)
- The kommune has managed to increase the percentage of organic while remaining within the same budget
- Its approach is very similar to that of Vaxjo. Reduction of food waste and meat usage. Cooking from scratch. Seasonal menus.
- Meat and fish should be limited to 20% of the ingredients budget. Meat must be raised under good conditions and fish must be sourced sustainably.

(See BERAS, 2013; Grantstedt & Hertwig, 2015; Södertälje, 2015).

3.2.30 Example 5 Ystad

Ystad contrasts markedly with the examples above in the much lower percentage of organic food. The food policy adopted in 2016 envisaged that the proportion of purchased organic food in the municipal activities would be at least 35 percent by 2020 (Ystad Kommune, 2016). In reality however the percentage was only 12 per cent in 2019. Olsson (2015) is a Masters dissertation which compares Ystad with Eslov (see para 3.2.7 above) Based on interviews with municipal managers in Eslov and Ystad, it attributes the higher organic percentage achieved in Eslov to two considerations. There was stronger political support for organic food in Eslov and lower costs for organic ingredients because Eslov was able to buy these cheaply through a joint procurement arrangement with adjoining pro-organic communes. In Ystad by contrast the prime political objective was to source local foods (Ystad Kommune, 2014). Together with two neighbouring kommunes, dialogue meetings were organised with local food suppliers to encourage them to submit bids (Bengtsson, 2015). A coordinated distribution arrangement was set up to reduce the number of vehicle movements and assist local suppliers (Boström, 2018)

3.3 Denmark

3.3.1 Continued growth in organic food

On the continued substantial growth of organic food consumption in Denmark between 2015 and 2018 – as well as growing exports of organic food see Kaad-Hansen (2019). Denmark is the world leader in organic food's share of retail sales - 11.5 percent. (Sweden comes second.)

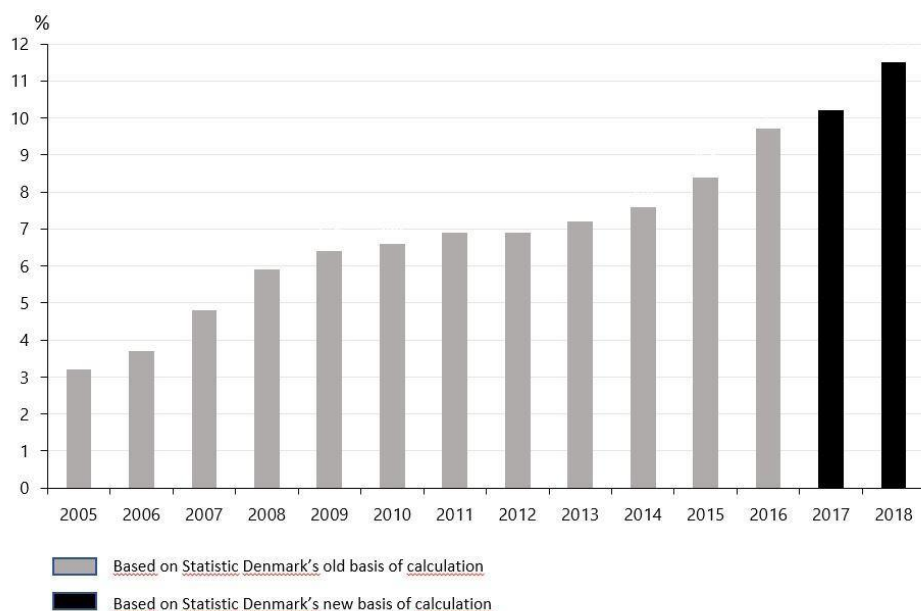


Fig 6 Organic food as a percentage of all food sales in Denmark (Kaad-Hansen, 2019)

3.3.2 Provision of public meals in Denmark

Denmark has large-scale provision of meals for elderly people – particularly in nursing homes and home delivery services. Unlike Sweden or the UK Denmark has no school meal system. Some kommunes provide school meals but many do not. Provision by of meals in pre-school institutions (nurseries) is more widespread than school meals but not universal. Husby, Sorensen, & Eis, (2011, p.4) provide statistics comparing

Denmark and Sweden. Swedish and Danish spending on meals within elder care was almost identical. However Sweden's population was 40% larger than Denmark's – showing that Danish spending per capita was relatively larger. Swedish spending on school food in cash terms was ten times that in Denmark and on kindergarten food it was six times that of Denmark.

In 2017 it was estimated that 73 per cent of Danish children ate packed lunches at school or in day care, 5 per cent went home for lunch and 22 per cent received their lunch from a canteen or catering arrangement (Agriculture & Food, 2017). An estimate for the number of public meals in Denmark which has been widely cited is 800,000 meals per day, with the municipalities as the most significant player and total public food procurement of 4.2 billion kroner (Food Supply Denmark, 2013). Copenhagen provides 70,000 meals a day throughout the city – with primary schools accounting for around 10 per cent of this figure (Copenhagen City Council, 2019, p.9; Havndrup, 2019). There was national guidance on public meals, which focussed on nutritional quality rather than sustainability. For children's nutrition requirements see Pedersen & Oveson (2015) pp. 57-73. The introduction of organic food in public catering was recognised as positive because organic agriculture was better for animal welfare and the environment but the guidance declared that there was no evidence that organic food was healthier than conventional (Pedersen & Ovesen, 2015, p.23).

3.3.3 Concerns about water pollution – promoting organic food

Intensive export-oriented agriculture in Denmark has caused significant problems of environmental pollution – particularly of water. Halberg, Alrøe, Meldgaard & Michelsen. (2008, pp 17-18) stress the importance of clean ground water as a reason why public authorities have promoted organic conversion within public kitchens

3.3.4 Spending on public meals – organic and conventional food

Table 12 Denmark - Sales of Foods and Beverages for foodservice by customer groups – 2018 (Source: Danmarks Statistik, 2019)

	<u>All sales</u> <u>DKK m</u>	<u>Organic</u> <u>DKK m</u>	<u>As % of total</u>
Total	21554	2351	10.9
Public institutions	4032	827	20.51
Canteens in public workplaces	705	157	22.3
Canteens in private workplaces	2970	455	15.3
Hotels, restaurants, cafes etc.	9919	629	6.3
Other (deliveries, take-aways etc)	3928	273	7.0
<i>Public sector in total</i>	<i>4737</i>	<i>984</i>	<i>20.77</i>
<i>Private sector in total</i>	<i>16817</i>	<i>1357</i>	<i>8.1</i>

The 20.77 organic percentage of public food procurement in the above table be is consistent with Ekomatcentrum, 2019b, p. 14 and Ekoweb, 2019a, p.19. The figure given above for total public food procurement is slightly higher than but consistent with the 4.2 billion kroner estimate made in 2013 (Food Supply Denmark, 2013).

3.3.5 Organic growth in Danish food service, 2014-2018

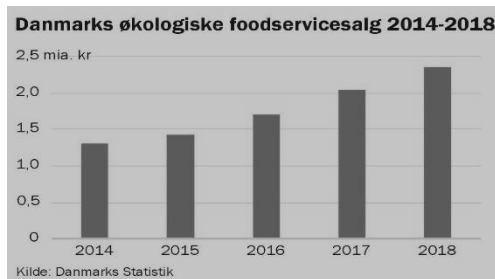


Fig 7 Denmark - Sales of organic food to Food Service Sector, DKK Millions (Source: Brandt, 2019b)

3.3.6 Økologiske Spisemærke [Organic Food Label] 2009-2019

The Organic Food Label is a free state-controlled label for eating places – public and private sector - established in 2009 to recognise growing organic food usage. It shows the organic percentage of ingredients purchased. The three levels are gold (90-100%), silver (60-90%) and bronze (30-60%) (Oekologisk Spisemaerke, 2019).

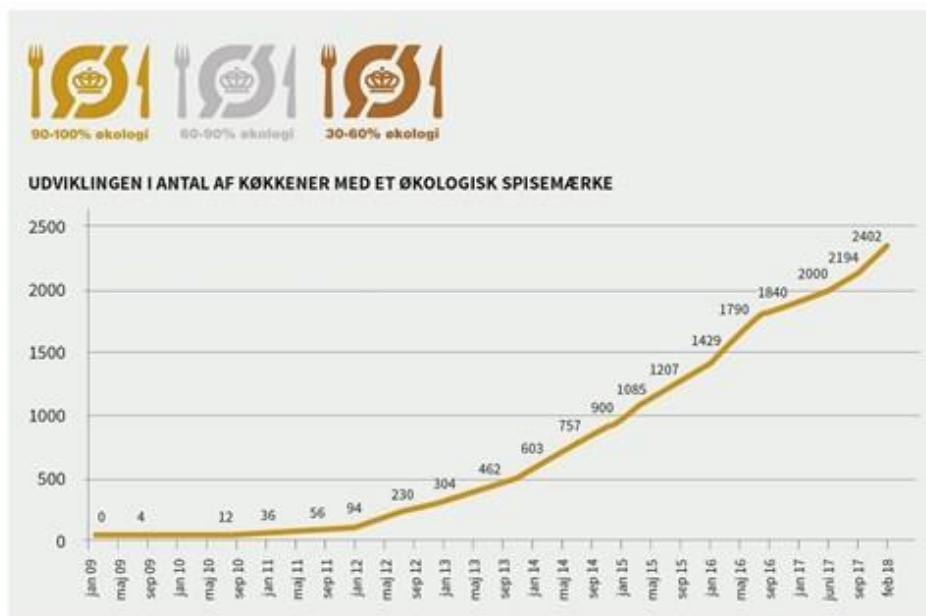


Fig 8 Denmark - Growth of the total of kitchens with the Organic Food Label, January 2009 to March 2018 (Source: Skouboe, 2018)

Figure 8 above shows the steep increase in the number of Speisemark awards from inception in January 2009 to 2402 in March 2018. The number continued to grow with the 3000th award announced in November 2019 (Food Service Forum, 2019).

3.3.7 Organic food percentage calculated by weight or value

For the Bronze, Silver or Gold levels of the Organic Food Label the kitchen manager has discretion as to whether they measure the organic percentage by weight or by monetary value (Foedevarestyrelsen, 2020). In Copenhagen the longstanding practice has been to measure organic food by weight rather than monetary value (Københavns Kommun, 2014 & 2021).

3.3.8 National policy - grants to promote organic food 2012

The Danish government adopted an organic action plan covering the years 2015 to 2018 which provided financial assistance to public kitchens to encourage them change

their kitchens to have an increased percentage of organic food (MAFF, 2015). The goal was to reach 60 per cent organic food in public kitchens by 2020 while remaining within existing food budgets. For a list of 31 communes who applied for grants to support training and consultancy costs for organic conversion see Skouboe, 2016.

3.3.9 Regional variations in organic food consumption

Table 13 below shows that there are pronounced regional contrasts in the takeup of organic food within Denmark. The highest numbers of Speisemark awards (6.6 per 10,000 inhabitants) are in the Capital Region – the region around Copenhagen. The lowest number is in the adjoining Zealand region

Table 13 Denmark - Regional distribution of Speisemark Awards (Skouboe, 2018 ; Statbank Denmark, 2019).

	Number of Speisemark Awards	population	Number for every 10,000 inhabitants
• Capital Region	1219	1,839,658	6.6
• Central Denmark Region	581	1,321,790	4.4
• Region of Southern Denmark:	340	1,223,685	2.8
• Region North Denmark	148	589,605	2.5
• Region Zealand	114	836,675	1.4
Denmark total		5,811,413	

3.3.10 Leading role played by the City of Copenhagen

Copenhagen has a population of 541, 000 within the city limits and 1.95 m within the metropolitan area, compared to total Danish population of 5.6m. The high proportion of Denmark's population concentrated in or around Copenhagen may account for the leading role which Copenhagen has played in promoting environmental initiatives within the country. From the time the school meal system was being set up in

Copenhagen, it was envisaged that organic food would be provided (Københavns Kommun, 2001a and 2001b). By 2007 Copenhagen had achieved 51% organic food. The City Council decided unanimously in 2007 that all food purchased by the City should be 90 per cent organic by the end of 2015. By mid-2016 this goal had been practically achieved, with an overall organic percentage of 88 per cent. At this time Copenhagen was the clear leader in Denmark., with other municipalities having at most 60 per cent organic. (Copenhagen City Council, 2016).

3.3.11 Copenhagen House of Food

A key role in bringing about this transformation was played by the Copenhagen House of Food (Københavns Madhus) which was established in 2007 to retrain kitchen staff to switch from conventional to organic food by reorganising kitchen activities without increasing the budget. This training cost the City around 2 per cent of its total food procurement budget (Martinez, 2015). The organic conversion methodology has been discussed in the academic literature review above, paras 2.21.1-2.21.2. The main principles were less meat and more vegetables, seasonal menus, preparing from fresh ingredients and reducing waste (Hultberg, 2012). With the introduction of financial assistance under the national organic action plan, House of Food began working in public kitchens in many places outside Copenhagen. It adopted a national role in promoting organic conversion (Copenhagen House of Food 2019b; Appel, 2018).

3.3.12 Dogme project promoted organic food in public kitchens

This was a partnership between Copenhagen and six other municipalities which started in 2000 to work together to promote environmental sustainability, including increasing the level of organic food in public kitchens to 75 per cent. Funding was secured for training and consultancy expenses. Performance data was collected by each kommune and shared with the others. The rate of organic food was measured in kilos net weight of food rather than in monetary terms. It was argued that this method

gives the most real picture of the amount of organic food procured. If, for example, the rate was stated in monetary terms a relatively small amount of expensive meat would get a disproportionate weight in the statement (Dogme Project, 2007, pp 27-29).

3.3.13 City of Copenhagen – engaging with suppliers

The City of Copenhagen have documented their work on engaging local suppliers to help the City increase the percentage of organic food. The City talked to local producers before drawing up tenders to find out what these producers could supply and how tenders should be adapted to make it easier for these suppliers to supply the City. The City broke down contracts into lots to try to encourage smaller suppliers. It sought seasonal food – defined as seasonal in its place of origin so as not to exclude suppliers from outside Denmark (European Commission, 2017, p.8; Morgan, Ochoa, Grana, Semple (2016) pp.14-19).

3.3.14 General election - 18 June 2015 – new government policies

The 2015 Danish general election replaced the incumbent Social Democrat led government by a Centre Right government led by the Venstre Party. The result was a policy shift in favour of conventional non-organic agriculture and cutting back of financial assistance promoting organic agriculture and organic food in public kitchens (Landsbrugavisen, 2016a). At least one kommune – Favrskov - was reported to be considering dropping organic in its public kitchens to save 650,000 DKK (Landsbrugavisen, 2016b). Svendborg Kommune voted in June 2017 not to introduce organic food into its public kitchens (Bidders, 2017). The government also encouraged kommunes to outsource activities to the private sector. A government proposal in June 2018 that kommunes be required to increase the proportion of their budgets which was outsourced from 27.1% to 35% was however not adopted after opposition from the association of local authorities (Eriksson, 2018).

3.3.15 2017-2018: Capital expenditure - localised elderly kitchens

In February 2017 the government invited kommuner to apply for a 425m pool. kr. to improve and renew local kitchens in each nursing home, rather than bringing in food from large central kitchens. The intention was to give the elderly a better food experience:

The scent of freshly baked muffins, or of the pork sticks in the oven, must be returned to the country's nursing homes.... A good appetite and the joy of food is important especially for weakened elderly people who have extra need for good and nutritious meals. I believe that if we move the kitchen closer to the residents of the nursing home, and perhaps also involve the elderly in the daily cooking, they will happily eat more, "says senior minister Thyra Frank (Bøggild, 2017).

3.3.16 *Kloge fødevareindkøb* (Smart Food Procurement) Project 2013-2016

This project was run by Copenhagen House of Food with government funding between 2013 and 2016 to promote public food procurement of organic and local food. In November 2016 it produced extensive guidance for public purchasers on how they should try to encourage small local food suppliers through such means as:

- Simple tenders – to encourage small suppliers to submit proposals
- Division of tenders into lots to make things easier
- Dialogue with small suppliers so you can design the food procurement in such a way to encourage them to bid
- Start the process well in advance - and be patient(Kloge Fødevareindkøb, 2016a & 2016b.)

However termination of government funding shortly afterwards reflected an abrupt change in government policy towards encouraging all kommuner to sign up to the single national food contract which was awarded to Hørkram in November 2016.

3.3.17 2016-2019 National food contract SKI 50.90

In November 2016 the national procurement organisation SKI awarded a national contract for food to the large food wholesaler, Hørkram. The national contract was joined by 65 of the country's total of 98 municipalities (WRIT2). Total contract value was around DKK 500 million per annum. Participating municipalities were however allowed to opt out of the national contract and make their own arrangements for specific products (SKI, 2015). The decision to set up this national contract was taken in 2014. It represented a radical change of course compared to previous government advice in 2013 encouraging public procurers to source from small local suppliers (Food Minister Mette Gjerskov quoted in *Food Supply Denmark*, 2013). The 2016 contract award coincided with new procurement legislation incorporating the provisions of the new EU procurement directive – which encouraged the breaking up of large contracts into lots. Objections to the national contract from small food suppliers were fruitless (Mørch 2016; FødevareDanmark, 2018). On 31 May 2019 Hørkram was once again successful in winning the national contract (Kongsgaard, 2019).

3.3.18 2017-2018: Centralisation – taking powers away from Danish regions

Another feature of government policies during the years 2017 and 2018 was a tendency to take power away from regional councils and concentrate it in the national government. In 2018 the government removed business development activities and associated European grants from control of the regional councils. These activities had included projects aimed at promoting organic food – so this change had potential negative implications for the future of such activities (Gyldenkær & Juul, 2018).

3.3.19 2016-2019 Reduction in public spending

There is a Danish website which sets out proposed reductions for public spending by individual local authorities <http://spareforslag.dk>. When examined in May 2019 this showed only one small-scale savings proposal which involved public meals. Glostrup Kommune planned to save 360,000 DKK by substituting refrigerated meals for meals prepared from scratch for elderly people at weekends (Spareforslag, 2019).

3.3.20 General election - 5 June 2019

The election campaign emphasised on the need for government measures to combat climate change. After the election the Social Democrat Party took power with support from three smaller parties. The agreed programme for the new government aimed to double the area under organic farming by 2030 as well as doubling organic exports and Danes' consumption of organic food. A renewed effort was envisaged to promote organic food in public kitchens (Brandt, 2019a).

3.3.21 Diminishing price differential

An important market factor which has promoted organic conversion is that with increasing demand for organic foods, the price differential between organic and conventional foods in Denmark has declined (Rafn, 2017 ; Olesen. 2017).

3.3.22 Reducing meat usage in public kitchens

The limited degree of support for this in Denmark can be documented from several sources. In January 2018 the Dansk Vegetarisk Forening initiated a citizen proposal demanding that all public kitchens must offer plant-based food to vegetarians and vegans. To secure a parliamentary debate on this proposal, it needed to obtain 50,000 signatures within 180 days (Lund & Nielsen, 2018). However the proposal only received 12,344 signatures by 29 July 2018 (Dansk Vegetarisk Forening, 2018).

In spring 2018 Greenpeace Denmark investigated climate and food policies in all 98 Danish kommunes in relation to whether they have formulated political goals to reduce meat consumption, through examination of websites and telephone interviews with certain kommunes (Greenpeace 2018a). The report outlined the decision by the City of Copenhagen to increase the proportion of plant-based food in public kitchens. Twelve other kommunes are named as intending to reduce meat usage in public kitchens, including Odense and Aalborg - Denmark's third and fourth cities

In July 2020 the Danish Vegetarian Association issued an appeal for donations to fund a planned lawsuit to test whether the refusal of many kommunes to provide vegetarian or vegan options in public meals was contrary to citizens' human rights. The target was 500,000 kr (Koszyczarek, 2020a).

On 9th December 2020 a parliamentary debate finally took place on whether all public kitchens should be obliged to offer plant-based food to vegetarians and vegans. The Food Minister expressed sympathy but the government felt that it should be left to individual kommunes and regions to decide. (Dansk Vegetarisk Forening 2020)

3.3.23 New Climate Change Strategy – October 2020

On 29th October 2020 the Danish government announced that as part of its new climate change strategy it would introduce two vegetarian days in all state canteens – that is those directly under control of the national government and beef or lamb should be served no more than once a week (Food Supply Denmark, 2020). Five days later however after trade union objections the government withdrew this policy and left it for individual canteens to decide (Koszyczarek 2020b).

3.3.24 Reducing carbon footprint in public kitchens

The survey of Danish kommunes carried out by Greenpeace Denmark early in 2018 found that the vast majority of kommunes had a climate strategy which aimed to reduce carbon emissions: 72 of the total of 98 were Climate Kommunes. This entailed reducing carbon emissions by a minimum of 2% per year for at least five years. The largest cities were among the most ambitious. Copenhagen aimed to be carbon neutral in 2025 and Aarhus in 2030. Aalborg planned to reduce its carbon emissions by 40% by 2020 compared to 1990 and Odense planned to reduce these by 20% compared to 2013 levels. The report noted that strategies focussed on energy and transport and had no goals for reducing meat consumption (Greenpeace, 2018a).

3.3.25 Reducing food waste in public kitchens

There have been considerable efforts to reduce food waste in public kitchens. Brynskov (2019) sets out the Copenhagen House of Food approach to reducing food waste. Uneaten food needs to be examined before it is thrown away to ascertain what sort of food is being discarded and why. Food must be prepared to an acceptable quality standard. Portion sizes must not be excessive. Customers should be consulted about what they want and changes explained to them. New dishes may need to be introduced to prevent boredom

3.3.26 Examples of local authority policies and practice

There is discussion here of five examples of local authority policies and practice : Aarhus, Bornholm, Hvidovre, Randers and Sønderborg. These are notable adopters of new food procurement policies (Københavns Madhus 2019b; Food Supply Denmark, 2013).

Table 14 Danish examples

Kommune	Population	Region
Aarhus	314,545	Central
Bornholm	41,303	Capital [Island in Baltic]
Hvidovre	50,600	Capital
Randers	95,756	Central

3.3.27 Example 1 Aarhus

Aarhus is Denmark's second city. In February 2013, the City decided on a target of at least 60 per cent organic food consumption by 2020. The project was to be carried out in collaboration with Copenhagen House of Food, who estimated in 2014 that the organic share of food purchases was 11 percent. By February 2016 the organic share of food purchases had risen well ahead of expectations to 53 percent. The day nurseries had reached 88 percent organic on average, but even the nursing homes had gone from 1 percent to 46 percent organic. This had been done within the existing food budget (DKK 125m). An important benefit of organic conversion was that employees who typically worked in isolation met colleagues, attended courses and were inspired into new ways of cooking. By December 2017 the 60 per cent goal had been achieved, three years ahead of schedule: 78 kitchens had bronze Speisemark (30 – 60% organic), 62 had Silver (60-90%) and 56 had Gold (over 90%). Early success in achieving this goal can be attributed to strong support from a variety of players: the City's political leadership; staff in the kitchens, unit managers and procurement officers, the principal food supplier and external advisory agencies including Copenhagen House of Food and Kloge fødevareindkøb (Smart Food Procurement) (Aarhus Lokaltavisen, 2016; Rafn, 2017). An aspiration for the future was that organic food purchased should also be "local" – that is sourced within the Central Denmark Region. It was envisaged that the kommune and the contracted food wholesaler AB Catering would talk to local suppliers with a view to buying certain foods provided they could provide sufficient quantity at an acceptable price. This could include local organic eggs and non-standard veg (Kloge Fødevareindkøb, 2016c)

3.3.28 Example 2 Bornholm

Bornholm is one of the agriculturally most productive parts of Denmark. In 2015 4.4% of the farming area was organic compared to a national average of 6.7%. In 2007 the Regional Council adopted a sustainability strategy - Bright Green Island. – which envisaged that the municipality would have 60% organic food in public meals and 40% local food. Bornholm has a strong local network - municipality, food companies – large and small – and local farmers working together to promote healthy and sustainable food. It has a population with a bad health profile and a shortage of food-related skills. There was a successful public campaign a few years ago to save the local abbatoir from closure (Groth-Michelsen & Schenk, 2017). On the sourcing of a week of local and seasonal specialties for the central kitchen see Stubkjær (2014). The increase in organic and local food required the following:

- Strong political commitment from the Mayor and other political leaders.
- A clear policy setting out what the local authority wishes to achieve.
- A strong relationship with a large food wholesaler, AB Catering.
- Upskilling of kitchen staff – learning how to cook from scratch.
- Continuous dialogue meetings between purchasing department, kitchens, agriculture, manufacturers, wholesalers and municipal management.
- Securing project funding from several sources.
- Accepting that this is a long-term project, which will require time
- Analysing kitchen food requirements and working out how to increase organic food without increasing the total budget.
- Seeking out potential local suppliers.
- Working with a specialist catering consultant – the Copenhagen House of Food – to transform kitchen practice.
- Continually monitor performance against the objectives.
- Creation of a so-called foodhub so that local products could be collected, brought to the warehouse and distributed (Madkulturen, 2016).

In January 2018 Bornholm Council announced that municipal bread production was now certified organic, using 12 tonnes of locally-produced wheat flour, made with local wheat (Hansen, 2018).

3.3.29 Example 3 Hvidovre

The organic conversion project took place between August 2013 and August 2015:

- In 2012 parents voted to support meals provision in day care institutions
- 22 participating day care institutions had a total start measurement in 2013 of 51.4% organic food in their procurement and a total final measurement in 2015 of 73.5%.
- The intention was to progress to 75-90% organic.
- Changes made included making more food from scratch, seasonal ingredients and the reduction of food waste.
- Copenhagen House of Food disseminated knowledge about organic production to the kitchen managers.
- It delivered training adapted to each individual kitchen – taking into account staff education and cooking requirements (Københavns Madhus, 2019c).

3.3.30 Example 4 Randers

In 2012 Randers Kommune introduced a new structure and hired a new nutrition manager with a brief to review how the kommune's kitchens were organised. The new manager could see that the kommune needed to change what it was buying – a lot of poor quality factory-made products. The kitchens needed to focus on meeting nutritional requirements and improving quality.

We also talked about conversion to organic food, but decided that that we could not afford it. In 2013, I attended a meeting on organic restructuring held by the Organic Food Association. My talented employees and I were attracted by the idea and sought funding together with the consultancy ØKØ ++ for a municipal redevelopment project. We were refused the first time, but when funds were again available, we successfully applied for funds for a project at seven of the kommune's nursing homes...The restructuring took place in 2015-2016. The goal was a bronze mark on all nursing homes, while our task was also to

motivate the other areas in Randers Municipality to begin a restructuring. We had good control over our purchases, to use our agreements to get best prices and had an overview of the raw materials that give the most organic food for the money. There was potential for making many products from scratch at the nursing homes. The organic conversion consultant came out to us. A skilled motivator who with enthusiasm and knowledge helped us to see the possibilities...For the kitchen staff the changes have led to increased professional pride, more job satisfaction and motivation and a more informed approach to food. We look forward to getting the Silver Mark in a few years time.”(Økologisk Landsforening 2017b).

3.3.31 Example 5 Sønderborg

This kommune has produced a long term food strategy which makes no reference to organic food. The strategy focusses on developing the local food sector including encouraging local sales to public kitchens. The strategy envisages that local food should be climate friendly – helping the kommune become carbon neutral by 2029. There is emphasis on reduction of food waste and meat consumption. Seasonal menus and cooking from scratch are advocated (Sønderborg Kommune, 2019). There is an aspiration to develop local logistical solutions for the kommune’s food sector. The kommune organised a meeting between buyers and small producers in August 2018. It was pointed out that breaking up the kommune’s procurement into smaller portions was an important way to help smaller producers win a share of the work. Opportunities for distribution collaboration were also discussed, as this is a barrier for small producers (Sønderborg Kommune, 2018). In March 2020 a delegation from Sønderborg visited Sweden to study coordinated distribution. “At present no municipality in Denmark has coordinated distribution of goods” (Nationellt Centrum för Kommunal Samordnad Varudistribution, 2020).

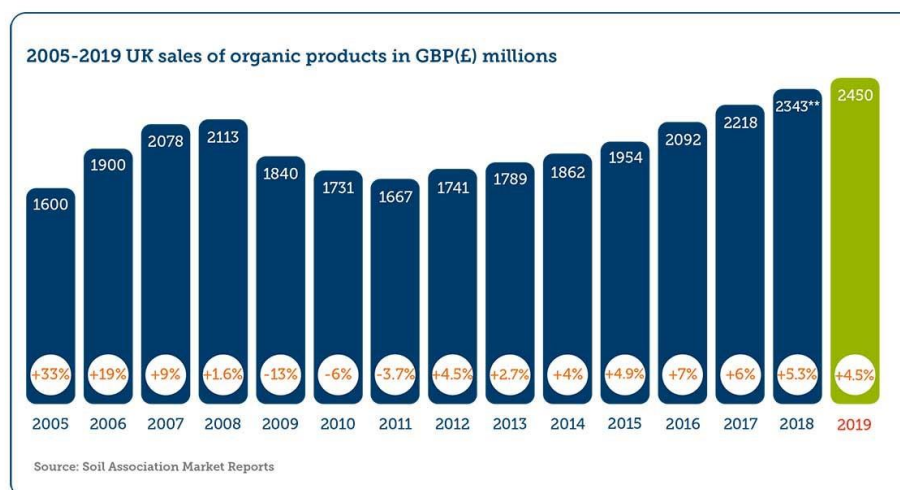
3.4 United Kingdom

3.4.1 Relationship to previous research

Developments prior to July 2014 were previously discussed in my Salford M Phil thesis *Sustainable Food Procurement for State Schools in Northern England and North Wales* (Stein, 2014). This section sets out the main points and reference is made to the M Phil where this contains greater detail.

3.4.2 Little UK government support for organic agriculture

Over the last twenty years there has been less support for organic agriculture in the UK compared to other European countries – specifically France and Germany (Mottershead & Maréchal, 2017, pp 63-64). The 2002 English Organic Action Plan announced in 2002 was not followed through. Scotland is now the only part of the UK with an action plan promoting organic food (Scottish Government, 2016).



** This figure has been adjusted during the year to reflect changes to the dynamic input provided by data sources

Fig 9 Organic food consumption in UK 2003-2019 (Bioeactual, 2020)

Fig 9 shows the decline in UK organic food sales during 2009 to 2011, followed by increases during 2012-2018, which brought sales just above the 2008 level. A further 5.3% increase in 2018 brought organic to 1.5 per cent of the total UK food and drink market (Soil Association 2019, pp.6-8). Organic food sales to FFL caterers in schools, hospitals and other public settings increased from £9m in 2014/2015 to £23.2m in 2018/2019 (Soil Association, 2021b, p.16).

3.4.3 Regional distribution of organic food production and consumption

For organic farmland UK statistics are available by standard region (DEFRA, 2020, Table 4). This publication shows that organic agriculture is concentrated in South West England – occupying 8% of all farmland. Four other regions are above the national average of 2.7 %: North East, West Midlands, South East and Wales. There are no published statistics on distribution of organic farmland at local authority level.

For organic food consumption in public kitchens there are no official statistics offering any regional or local authority breakdown. The figures on FFL accreditation which the Soil Association has published on its website are summarised in Appendix 4. They are very limited and incomplete. They showed the following local councils as holding FFL Gold accreditation for their school catering services in October 2020:

- East Ayrshire (Scotland)
- London Boroughs of Greenwich, Thurrock, Tower Hamlets and Waltham Forest
- North Ayrshire (Scotland)
- Nottinghamshire
- Warwickshire

The lack of statistical data makes it very difficult to assess whether the local authority areas where there is a high percentage of organic food in school kitchens are located in areas where there is a higher concentration of organic agriculture.

3.4.4 School food quality, 1980-2014

The present system of school catering in the UK dates back to 1944 when the Education Act established a national system of school meals. Under Conservative governments during the 1980s, quality of school meals deteriorated due to public spending cuts, compulsory competitive tendering and the removal of the statutory duty to provide school meals (Long, 2018, Stein, 2014, p. 75). Between 2002 and 2007 the Labour government oversaw a new approach to improve the quality of school food which by 2007 involved new school food quality standards and large amounts of new public money aimed at encouraging local authorities to implement them – supporting capital expenditure, training and subsidising production costs (Stein, 2014, pp. 75-76). This policy continued until the change of government at the May 2010 general election, followed by abrupt policy changes. There were very large public spending cuts, with local authorities obliged to reduce budgets by over 40 per cent. There was also a move to separate schools from local authority control – changing them to academies and establishing of new “free schools”, which were exempted from school food quality standards (Stein, 2014, pp. 83-84; 93-94).

Between 2003 and 2011 the School Food Trust was funded by government to encourage local authorities to improve the standard of school food. It collected statistics monitoring how school food standards were being improved (Nelson & Nicholas, 2006; Nelson, Nicholas, Wood & Russell, 2011; Nelson, Nicholas, Riley, & Wood, 2012). Collection of this information ceased in England when the government withdrew funding. The Scottish government continued to fund collection of school food statistics (McKendrick et al, 2019). McKendrick (2019, p12) summarises Scottish school food policy developments since 2003, demonstrating sustained commitment to improving the quality of school food.

In July 2013 government policy in England abruptly swung round to promoting the growth of school catering services and high quality school food. This was seen with the publication of the School Food Plan on 12th July 2013. In September 2013 the

government announced universal free meals for children in years one or two – aged five to seven. Significant new funding was allocated to support this policy – over £1 billion between 2014 and 2016, including £150m in capital funding to improve kitchens and dining rooms (Stein, 2014, pp. 94-96). New school food standards were published in June 2014, coming into force on 1st January 2015. These were binding on all schools except for academies set up between 2010 and 2014, which were encouraged to comply (Department for Education, 2014a; Department for Education, 2014b). Ofsted wrote to the All Party Parliamentary School Meals Group in February 2015 stating that Ofsted would inspect the quality of school meals and dining arrangements and food education in English schools (Harford, 2015).

3.4.5 Volume of spending

There are few official figures on the volume of public money spent on public catering for the whole UK. In 2006 the National Audit Office estimated that the public sector in England spent around £2 billion per year on food and catering services, including in schools, hospitals and armed forces bases. This figure covered all costs, including ingredients and staff and running costs (NAO, 2006, p 20). In 2014 a new strategy for public food procurement estimated that England's public sector spent £1.2 billion every year on food and drink (Bonfield, 2014, p. 2). The Scottish government's survey estimated public spend of £149.4m for 2012-2013 (Smith, Pearce & Judson, 2014). The Soil Association in February 2021 estimated the UK figure as £2 billion (Soil Association, 2021b, p.16).

3.4.6 Numbers of children receiving school meals

In February 2020 a Scottish Government survey showed that 339,826 children were receiving school meals – free or paid for, 53.3 per cent of all pupils (Scottish Government 2020). The only recent English statistics relates to free school meals. In October 2020 1,633,698 children were entitled to receive free school meals - 19.7% of the total number of school children, 8.3m (Department of Education, 2021). As to the total number of school meals served in England, the most recent uptake

percentage of 58.1% for primary schools and 49.6% for secondary schools is from an APSE survey for 2018/2019 (APSE, 2019). If present uptake is guessed to be around 45 per cent the total number of children receiving daily school meals in England – both free and paid for – would be around 3.7m (APSE, 2019).

3.4.7 Procurement – supporting local producers or centralisation

UK public procurement policy has pushed procurement officers in contradictory directions over the last fifteen years. On the one hand there has been encouragement to aggregate demand into fewer and larger contracts, which should enable procurers to drive down prices (Gershon, 2004, p.14; NAO, 2006, p.12; Stein, 2014, p. 78). On the other hand procurers have been encouraged to support smaller local suppliers (Small Business Service, 2005). Proposals in July 2010 to set up a single national public food procurement contract were shelved after the change of government (MacNeill, 2010; Stein, 2014, pp. 78-79). Government policy increasingly emphasised encouraging smaller businesses to bid for work from the public sector (Stein, 2014, pp.91-92; Cabinet Office, 2013a; Social Enterprise UK, 2012, pp 1-3).

3.4.8 Food Supply dominated by wholesalers

In the UK food supply to public kitchens has been carried out almost exclusively by large national wholesalers, of which the two largest are Brakes and Bidfood (Institute of Grocery Distribution, 2017). There have however been limited experiments with alternative logistical arrangements. In Hertfordshire Bidfood uses its depots and vehicle fleet to help a small supplier, WM Meats, distribute high quality British meat – including organic - to over 400 schools in the county (Hertfordshire Catering Ltd 2019). In Lancashire in January 2019 the County Council awarded a contract for distribution of food and drink products (including the supply and distribution of fresh fruit and vegetables) to over 500 schools. This contract was intended to open up opportunities to SMEs to supply food to the County Council (Lancashire County Council, 2018)

3.4.9 Public Sector Food Procurement Initiative, 2003-2009

The Public Sector Food Procurement Initiative (PSPFI) was a national government initiative between 2003 and 2009 which aimed to promote better quality public sector food while supporting local food suppliers. Michaels (2006) summarised best practice developed by local councils to promote local suppliers:

- Lotting – splitting catering supply contracts by geography or product
- Outreach to smaller suppliers
- Logistical arrangements – for example using another, larger contractor to assist with distribution
- Changing menus with increasing use of seasonal fresh produce available locally and retraining staff to cook with fresh ingredients
- Supporting best practice in animal welfare
- Raising awareness of healthy and sustainable food among school children and parents (Michaels, 2006, pp. 1-5).

3.4.10 Food for Life (FFL) promoted local and organic food

The growth of FFL accreditation since its inception in 2009 has been discussed in the academic literature review, para 2.20.2 above. Food for Life in public catering had many resemblances to PSPFI in encouraging local and in some cases organic food, higher animal welfare, seasonal menus and cooking with fresh ingredients. The FFL approach involved a highly structured scoring system whereby school catering organisation were inspected annually by a visit from the Soil Association inspector who awarded points according to the criteria set out in the FFL Standards Handbook – which for schools was 49 pages long (Soil Association 2019c). The inspectors visited kitchens and dining rooms and examined menus and a sample of purchasing records to verify organic and other accreditations. To encourage purchasing of local and UK food, caterers were awarded 3 points per % of their spend on raw ingredients produced in their region and 2 points per % of spend over 59% spent on raw ingredients produced in the UK (Soil Association 2019c, p.37). The comparatively low level of organic food required by FFL – 5% for the Silver level and 15% for the Gold level –

was consistent with the general market and political climate in the UK where organic food had struggled to win acceptance.

FFL has not received any direct financial assistance from the UK government. The Scottish government has provided grant aid to assist the Scottish Soil Association to promote FFL in Scotland (Soil Association 2019b) Otherwise the Soil Association has been dependent on a limited amount of funding from local authority and private catering organisations – particularly payment for the cost of inspecting catering arrangements to confirm whether they meet FFL requirements.

3.4.11 Increased organic food usage, 2013-2018

Table A4.2 in Appendix 4 shows that the numbers of schools with FFL Silver and Gold accreditation rose considerably between 2013 and January 2018, denoting an overall improvement in food quality, including increased usage of organic food.. The percentage of schools with FFL Gold rose from 15.1% to 20.5%. The percentage of schools with FFL Silver rose from 24% to 46.6%. This table is based on information extracted from the Soil Association website on the four specified dates – see Appendix 4 for further details.

3.4.12 British Food Plan 2014 – overtaken by Brexit referendum

This was a new strategy for public food procurement which was published in April 2014 (Dibb, 2014) It was supportive of techniques to assist small suppliers – such as division of contracts into lots, advice for potential bidders and specification of fresh and seasonal produce (Bonfield, 2014, p.31). It was also supportive of caterers providing higher quality food through adopting Food for Life (Bonfield, 2014, p.99), However following a well publicised launch there was virtually no government action to implement this strategy (Dynamic Food Procurement National Advisory Board, 2020, p.3)

3.4.13 June 2017 general election - Universal Infant Free School Meals

The UK prime minister Theresa May called a general election on 8th June 2017. Her manifesto proposed that UIFSM should be replaced by a much cheaper school breakfasts scheme. This proved electorally unpopular and was one of several reasons why Theresa May lost her parliamentary majority and continued with a minority government which retained UIFSM (Long, 2018, p. 17; Peck, 2017). Anticipating further attempts to scrap UIFSM, the education caterers organisation commissioned an evaluation which concluded that UIFSM was beneficial to childrens welfare and educational attainment and also supported local food suppliers (Sellen, Huda, Gibson & Oliver, 2018).

3.4.14 Declining quality of school meals, 2016-2020

There is widespread agreement that the quality of school food deteriorated in the years after the 2015 change of government (Sustain 2020; Soil Association, 2019g) School budgets were cut substantially, whereas they were largely protected from cuts under the 2010-2015 coalition government. The government took no action to enforce the school food standards which had been put in place in 2014. The Soil Association's evidence to the House of Commons enquiry into public food procurement observed that in recent years, as local authorities sought to make challenging budget cuts, there had been a shift towards tenders giving 60- 80 percent weighting to price, effectively ensuring that the cheapest bid would win the contract. Soil Association interviews undertaken with school caterers in 2018 and 2019 revealed that British and local produce was being removed from school menus and replaced by lower quality alternatives sourced from abroad (House of Commons, 2020a).

3.4.14a House of Commons report on public food procurement, March 2021

The report concluded that there was no clear evidence as to whether UK public bodies serve high quality food, produced to high standards. For schools Ofsted should be

given responsibility for monitoring food quality. All food provided by the public sector should be required to comply with a minimum standard. The government should make a greater effort to source food from UK food suppliers. The Government had claimed that leaving the EU would encourage the UK public sector to “buy British” and reduce environmental costs. It was however, clear that even under EU rules, the UK already had opportunities to support British suppliers through measures, such as specifying “local” and “seasonal” in procurement. This had the potential to provide greater environmental benefits, such as reduction of food miles. It was disappointing that the UK public sector did not take full advantage of these opportunities prior to EU Exit. The report hoped that the Government would make more effort in future to ensure that the UK public sector bought British food (House of Commons, 2021, p.18). The report expressed support for the Dynamic Food Procurement (DFP) system which was pioneered by Bath and North East Somerset Council. It expressed concern that the attempt to scale up this pilot to cover the whole south west of England had been delayed due to pandemic spending demands. It called for money to be provided for the launch of the pilot in early 2022 (House of Commons, 2021, pp21-23).

3.4.14b National Food Strategy second report – July 2021

On 27 June 2019 the government commissioned Henry Dimbleby to conduct an independent review to help create the first National Food Strategy for 75 years. The second National Food Strategy report published in July 2021 recommended radical changes in the government’s approach. It envisaged giving much higher priority to health, animal welfare, restoring the natural environment, combatting climate change, and promoting resilience to global shocks (Dimbleby, 2021, p.2). The government should work with existing certification bodies such as Food for Life to introduce a mandatory accreditation scheme for all public institutions, requiring them to achieve minimum standards for public food and encouraging them to aim higher. The Food Standards Agency should monitor the quality of public sector food and compliance with minimum standards. The report referred to the dynamic food procurement system whereby small local producers could sell their produce to the public sector through an online system. Trials of this system had shown that it worked extremely well, with users reporting more choice, better quality and no increase in costs. The government

should accelerate the roll-out of the dynamic procurement system – starting with the proposed pilot in South West England. Widespread usage of dynamic food procurement could break the quasimonopoly hitherto held by a small number of larger suppliers, which had stifled innovation and improvement in public sector food (Dimbleby, 2021, p.21).

3.4.15 Reducing meat usage in public kitchens

The UK school food standards issued in 2014 encouraged school caterers to give all children a meat-free day each week, using alternatives such as pulses, soya mince, tofu and Quorn (School Food Plan, 2015, p.5). At Silver and Gold level, the Food for Life catering standard encourages caterers to reduce meat usage (Soil Association 2019c, p.64). In May 2019 the Soil Association called for the government to improve school meal rules, including introduction of a mandatory meat free day every week (Soil Association 2019d). In April 2020 the UK's public sector catering organisations issued a joint pledge to reduce their meat consumption by 20 per cent across schools, hospitals, universities and care homes – aiming both to improve health and reduce carbon emissions (Foad, 2020; Carrington, 2020). This was the same as the cut proposed by the UK's Committee on Climate Change report published in January 2020 (UK Committee on Climate Change, 2020, p.9). The campaign has its own dedicated website (www.20percentlessmeat.co.uk) which provides tools and resources to inspire caterers. Obesity Action Scotland (2020, p.5) reports on a survey of school meals in Scottish local authorities which shows a steep reduction in the number of local authorities offering red or processed meat on their menus 4 or 5 days in a school week between 2017 and 2020.

3.4.16 Reducing climate impact of public kitchens

Westcott (2020) reports on a survey of UK councils' plans for tackling climate change through food. The research found that 300 out of 404 (74%) UK local authorities had declared a climate and nature emergency. Of these councils 92 had approved and published action plans. Of these 92 plans 67% did not propose any

substantial action relating to the climate impact of food. Only fourteen councils had released climate action plans with extensive consideration of relevant food issues. They were Bristol, Cornwall, Durham, East Lothian, Middlesbrough, Stockport, Stroud Town, Somerset West, Taunton and the London Boroughs of Camden, Enfield, Hounslow, Lewisham and Southwark. A number of areas had meat-free days and Southwark planned to become the first borough to only serve vegetarian food in primary schools by 2030.

Food for Life does not involve measuring the carbon footprint of meals. It encourages caterers to do things which reduce carbon footprint such as using less meat and avoiding palm oil (Soil Association 2019c, pp. 6, 64). In May 2017 the Soil Association launched the Green Kitchen Standard in collaboration with the Carbon Trust (Pathiaki, 2017). This envisaged that caterers would achieve the award by reducing food waste, energy and water usage, and carbon footprint. Caterers were not required to calculate their carbon footprint but could be awarded points for doing so (Soil Association, 2019e, p.27). Takeup of this Standard has been very limited. The Soil Association website shows only four caterers holding this award (Soil Association 2021a).

3.4.17 Examples of local authority policies and practice

The five examples illustrate general themes relating to sustainable food procurement policies. For London there is detailed information on implementation of these policies within the 32 boroughs. Hampshire and North Yorkshire are rural counties with strong local food procurement policies. Bath & North East Somerset has made innovative use of dynamic food procurement (DFP). Edinburgh City Council illustrates the obstacles to organic food in school meals.

Table 15 UK Examples

Local Authorities	Population
London – 32 boroughs	8.9m
Hampshire County Council	1.4m
North Yorkshire County Council	604,000
City of Edinburgh	518,000
Bath & North East Somerset Council	193,000

3.4.18 Example 1 London

Since 2011 an annual report has been produced by the NGO Sustain comparing sustainable and healthy food developments among the thirty three London boroughs (Dalmeny. Reynolds, & Williams, 2011; Compton,2014; Parente,2016; Guerlain,2018; Davenport, 2019. The Mayor of London has funded these reports. They show developments from year to year. Commitment to animal welfare in food procurement has risen from 9 boroughs in 2011 holding a Good Egg award to 19 boroughs in 2019. The number of sustainable city food partnerships has risen from three boroughs in 2014 to eight in 2018 (Davenport, 2019, pp.10-15). By 2019 27 boroughs were taking actions to support sustainable fish.

With Food for Life the number of boroughs which had at least Bronze for the majority of schools rose from 17 in 2011 to 23 by 2018. But by October 2019 this had fallen to 19. In 2018 three boroughs had reached the highest achievement level – a borough achieving Gold Food for Life for the majority of schools and for one or more additional sectors of catering under council control. By October 2019 this was true of only one borough, Islington. This decline reflected serious pressures on council catering organisations – see 3.4.14 above.

The October 2020 Sustain report focussed on London's food response to Covid. The report refers only briefly to public procurement and makes no reference to Food for Life. Fifteen councils were taking steps to serve more environmentally friendly food in

council catering. The biggest climate and nature benefits came from serving less but better meat and Camden and Havering were leading the way by reducing meat in schools. Enfield were the first local authority to commit to only vegetarian and vegan food at onsite Council events (Oliver-Larkin & Luck, 2020, p. 28)..

Five London councils had Food for Life Gold at the beginning of 2018: Barking & Dagenham; Greenwich; Havering; Tower Hamlets; Waltham Forest. None retained this status by October 2021. See Table A4.4. For discussion of how Havering and Tower Hamlets decided to drop organic food to cut costs see Soil Association (2019f) and Tower Hamlets Council (2019).

3.4.19 Example 2 Hampshire County Council

The County Council is a large local authority which provides catering services for schools, venues, workplaces and attractions - serving 75,000 meals across 500 sites each day. It has FFL Bronze accreditation (Hampshire County Council, 2019a). The Hampshire website sets out in great detail what food is purchased for use in the school kitchens. It names over thirty suppliers – one from Ireland and the rest based in the UK. Many of the suppliers are SMEs and much of the food is sourced from within Hampshire. There is strong emphasis on animal welfare and promoting healthier food choices. There is a small amount of organic food purchased – yogurt from Yeo Valley (Hampshire County Council, 2019b).

3.4.20 Example 3 North Yorkshire County Council

In February 2018 the County Council was awarded FFL Silver, reflecting an increase in purchasing of organic food to 5 per cent of the total bought, particularly beef burgers, pork meatballs, pasta and yoghurt. It provided catering for 330 schools. There is a strong emphasis on healthy food made from fresh ingredients, animal welfare and sourcing from within the Yorkshire and Humberside region or elsewhere in northern England whenever possible – mostly from family owned businesses (North Yorkshire County Council, 2018). One respect in which this local authority differed from many

similar UK councils was the extent to which it subdivided its food procurement by both area and product with a view to encouraging smaller and local suppliers. See contract award notice dated 8 February 2014 (North Yorkshire County Council, 2014).

3.4.21 Example 4 Edinburgh City Council

Edinburgh holds FFL Bronze for a large number of primary and secondary schools. The catering service sources from Scotland and the UK whenever possible. There is a pilot project whereby one primary school, one secondary school and one care home have been brought up to FFL Silver level. A report produced in December 2017 is of particular interest in that it examines the feasibility of achieving FFL Silver Catering mark in all schools through introducing organic produce such as milk, baked potatoes/vegetables, pasta and meat or, as an alternative, a complete organic dish. The feasibility study highlighted the price premium for organic food, limited availability, the need to provide washing facilities for organic veg and to guarantee potato producers three years of sales to encourage them to convert to organic. It concluded that for the time being the City should focus on retaining FFL Bronze for the bulk of its schools – taking into account rising prices for most food ingredients (Edinburgh City Council, 2017)

3.4.22 Example 5 Bath & North East Somerset Council

The school meal service here was among the first to be awarded FFL Bronze in 2007 and progressed to FFL Silver in 2016. In 2016 the Council was the first in the UK to set up a dynamic food procurement (DFP) system to buy school food. A contract was signed with a software provider, Equilibrium, to establish an online food store called Fresh Range which would be responsible for order consolidation and delivery. Equilibrium had a local distribution hub and good knowledge of local suppliers. A framework contract for the selection of multiple suppliers was launched. Suitably qualified suppliers were allowed to join the contract at any time. Hence the phrase “Dynamic Food Procurement”. Small suppliers were able to participate because they were not expected to provide the total amount required by all schools but could supply

the quantity they produced. Orders made by school kitchens were consolidated by the delivery agent so that each school received only one delivery. All qualifying suppliers were registered on a platform and participated in mini-competitions run approximately on a quarterly basis, according to school requirements and seasonality. Against a list of specific products to be delivered, registered suppliers submitted their prices. In order to qualify, there were minimum requirements to be met by the produce (e.g. meat and eggs had to comply with UK-specific certifications). Suppliers could also inform buyers about other quality aspects of their food – such as ability to provide organic food – which was important for FFL certification (Soldi, 2018, pp 23-25; SPP Regions Consortium, 2017; House of Commons, 2020b). This approach was successful in providing the school food service with high quality locally sourced food. However in September 2018 Bath & North East Somerset disbanded its school meal service.. Some local schools continued to make use of the Fresh Range software platform and delivery service until this was shut down in October 2020, as the software provider, Equilibrium, prepared to offer its technology to the proposed new national DFP service (Osborn, 2020).

3.5 Comparison of national public food policies

Table 16 presents an overview of national public food policies in the three countries.

Table 16 Comparison of public food policies – UK, Denmark & Sweden

		United Kingdom	Denmark	Sweden
	Free School Meals	Since 1944 low income families. Since 2014 all children aged 5-7	No national scheme	All children – developed since 1940s
		3.4.4	3.3.2	3.2.3
	National strategy for Public Food Procurement	2004 Public Sector Food Procurement Initiative. British Food Plan - 2014	2012 Strategy for Organic Food in Public Sector 2013-2016 : Smart Food Procurement project.	2014 National Food Strategy – promoting organic and Swedish food. 2019 : Enhancing procurement skills
		3.4.9; 3.4.12	3.3.8; 3.3.16	3.2.14; 3.2.17
	Organic Food in Public Sector	Little government support	2012 Target of 60% in public kitchens by 2020 Organic conversion grants	2006 25% target 2016 -2019 60% target
		3.4.2	3.3.8	3.2.4 3.2.14
	National accreditations	Food for Life launched 2008	Speisemark launched 2009	KRAV accreditation launched 1985
		3.4.10	3.3.6	3.2.2
	Buying local or national food.	Public Sector Food Procurement Initiative – 2003 British Food Plan – 2014	2013 Kommunes urged to buy locally	Litigation – 2011/2012 Sigtuna & Rattvik cases National Strategy 2014
		3.4.9; 3.4.12	3.3.16	3.2.12; 3.2.14
	National food procurement	Abortive proposal – 2010	Contractor appointed – November 2016	Not proposed
		3.4.7	3.3.17	
	Reducing food waste in public kitchens	UK strategy 2019	Denmark - projects	2019 - national survey
		2.17.3	3.3.25	3.2.22

Chapter Four Methodological Approach & Research Questions

4.1 Introduction

This chapter explains the methodological approach which has been followed in researching and writing this thesis. It discusses the following aspects of research methodology:

- general research approach (phenomenological/Interpretivist).(4.2)
- case studies (4.3)
- exploratory research (4.4)
- form of research questions (4.5)
- data collection methods (4.6)
- documentation (4.7)
- semi-structured interviews (4.8)
- people with whom interviews will be sought (4.8.1)
- approach to analysis of data generated (4.8.2)
- observation and participant observation (4.9)
- physical artefacts (4.10)
- triangulation (4.11)
- combining semi-structured interviews and documents (4.12)
- development of the interview schedule (4.13)
- interview schedule – relationship between research questions and literature review (4.14)
- interviews: Denmark, Sweden and UK (4.15)
- written responses and participant observation (4.16).

4.2 Phenomenological/Interpretivist approach

The general research approach of this thesis is interpretivist and phenomenological. Phenomenology is a research philosophy that “sees social phenomena as socially constructed and is particularly concerned with generating meanings and gaining insights into these phenomena” (Saunders, Lewis & Thornhill 2012, p.677). Interpretivism stresses that the researcher must aim to understand the differences between people as social actors

This emphasizes the difference between conducting research among people rather than about objects such as trucks and computers. The term ‘social actors’ is quite significant here. The metaphor of the theatre suggests that as humans we play our part on the stage of human life. In theatrical productions, actors play a part which they interpret in a particular way (which may be their own or that of the director) and act out their part in accordance with the meaning we give to these roles. In addition we interpret the social roles of others in accordance with our own set of meanings (Saunders et al., 2012, p. 137).

The interpretivist approach which underlies this PhD research assumes that reality is socially constructed, and subjective. It can be contrasted with the positivist approach – which views reality as “external, objective and independent of social actors” The positivist sees that only observable phenomena can provide credible data, facts. There is focus on causality and law-like generalisations, reducing phenomena to simplest elements. The interpretivist approach looks at

subjective meanings and social phenomena. Focus upon the details of the situation, a reality behind these details, subjective meanings motivating actions”. (Saunders et al., 2012, p. 140).

The positivist approach sees research as undertaken in a value-free way. The researcher is independent of the data and maintains an objective stance. The data collection method will be highly structured, with large samples and careful measurement. The interpretivist approach adopted in this PhD sees research as value-bound. The researcher is part of what is being researched and so will be subjective. Data collection will involve small samples, in-depth investigation and a qualitative approach. The following two tables contrast the two approaches.

Table 17 Research approach: Assumptions of the main paradigms
(Collis & Hussey, 2009, p.58)

Philosophical assumption	Positivism	Interpretivism [Approach taken in this PhD]
Ontological assumption (The nature of reality)	Reality is objective and singular – separate from the researcher.	Reality is separate and multiple, as seen by the participants.
The role of values	Research is value free and unbiased.	Researcher acknowledges that research is value laden and biases are present.
Rhetorical assumption (The language of research)	Researcher writes in a formal style and uses the passive voice and accepted quantitative words and set definitions.	Researcher writes an informal style and uses a personal voice, accepted qualitative terms and limited definitions.
Methodological assumption (The process of research)	Process is deductive. A study of cause and effect with a static design. (Categories are isolated beforehand.) Research is context free. Generalisations lead to prediction, explanation and understanding. Results are accurate and reliable through validity and reliability.	Process is inductive. Study of mutual simultaneous shaping factors with an emerging design. (Categories are identified during the process.) Research is context bound. Patterns and/or theories are developed for understanding. Findings are accurate and reliable through verification.

Table 18 Methodology - Elements of the Positivist and Phenomenological Approach (Easterby-Smith ,Thorpe, Lowe, 2001, p.30)

Elements	Positivism	Phenomenological [Approach taken in this PhD]
1 – the observer	Must be independent	Is part of what is being observed
2 – human interest	Should be irrelevant	Are the main drivers of science
3 - explanations	Must demonstrate causality	Aim to increase general understanding of the situation
4 - research progresses through	Hypotheses and deductions	Gathering rich data from which ideas are induced.
5 - concepts	Need to be operationalized so that they can be measured	Should incorporate stakeholder perspectives
6 - unit of analysis	Should be reduced to simplest terms	May include the complexity of “whole” situations
7 – generalization through	Statistical probability	Theoretical abstraction
8 – sampling requires	Large numbers selected randomly	Small number of cases chosen for specific reasons

The research carried out for this PhD thesis falls clearly within the interpretivist paradigm and the phenomenological approach as described in the above two tables.

4.3 Case studies

A case study explores a research topic within its context, or within a number of real life contexts (Saunders et al., p. 179).

A case study strategy can also incorporate multiple cases, that is, more than one case. The rationale for using multiple cases focusses on whether findings

can be replicated across cases. Cases will be carefully chosen on the basis that similar results are predicted to be produced from each one...literal replication. Another set of cases may be chosen where a contextual factor is deliberately different. The impact of this difference on the anticipated findings is predicted by the researcher (Saunders et al., 2012, pp. 179-180).

In this PhD each case study is a local authority which is engaged in purchasing food for public kitchens which it operates. The local authorities are in three different countries – which makes it possible to explore national differences. It also becomes possible to explore differences between local authorities in the same country. Some local authorities - for example – are urban and others are rural and this will be likely to influence policy priorities. A rural local authority would be more likely to prioritise supporting local farmers. A large city might be more inclined to support wider environmental goals involved in purchasing organic food. Local authorities may be influenced by the specific agendas of individual political leaders or officers with strong personal motivation. Local elections may bring new political leaders into power, who alter policy.

4.4 Exploratory research

This dissertation is an example of exploratory research. It aims to find out “what is happening...To seek new insights...To ask questions... to assess phenomena in a new light” (Robson 2002, p 59). Saunders lists a number of ways of conducting exploratory research including:

- A search of the literature
- Conducting in-depth individual interviews
- Interviewing experts in the subject
- Conducting focus group interviews (Saunders et al., 2012,p.171)

This study makes use of literature searches and interviews. Interviews were carried out with procurement, school catering and environmental managers, who are in a non-academic sense experts in the subject – and also with managers from NGOs, consultancies and trade organisations involved with sustainable food. Conducting focus group interviews would not have been practicable given the busy working lives

of the individuals with whom interviews were sought. Getting some of them to give an hour of their time was difficult enough.

4.5 Form of research questions

Table 19 Form of Research Questions Yin (2003, p.6)

Strategy	Form of Research Questions	Requires control over behavioural events	Focuses on contemporary events
Experiment	How, Why	Yes	Yes
Survey	Who, What, Where, How many, How much	No	Yes
Archival analysis	Who, What, Where, How many, How much	No	Yes/No
History	How, Why	No	No
Case Study	How, Why	No	Yes

4.5.1 “How”and “why” questions are most appropriate for case studies because they deal with explanations of how things have happened and open the way for an in depth discussion of how things are linked together. The research questions for this dissertation are set out at the end of this chapter – section 4.14, Table 19.

4.6 Data collection methods

The following data collection methods are discussed below – showing the extent to which they were employed in the research leading to this PhD thesis:

- Documentation
- Semi-Structured Interviews
- Observation
- Participant Observation
- Physical Artefacts

Table 20 Six Sources of evidence: Strengths and weaknesses (Yin, 2003,p.80)

sources of evidence	strengths	weaknesses
Documentation	<p>Stable, can be viewed repeatedly.</p> <p>Unobtrusive, not created as a result of the case study.</p> <p>Exact, contains exact names and references and details of an event.</p> <p>Broad coverage, long span of time, many events and many settings.</p>	<p>Retrievability can be low.</p> <p>Biased selectivity if collection is incomplete.</p> <p>Reporting bias reflects unknown bias of author.</p> <p>Access may be deliberately blocked.</p>
Archival Records	<p>[same as above for documentation]</p> <p>Precise and quantitative.</p>	<p>[same as above for documentation]</p> <p>Accessibility due to privacy reasons.</p>
Interviews	<p>Targeted, focuses directly on case study topic.</p> <p>Insightful, provides perceived causal inference.</p>	<p>Bias due to poorly constructed questions.</p> <p>Response bias</p> <p>Inaccuracies due to poor recall, reflexivity, interviewee gives what interviewer wants to hear.</p>
Direct Observations	<p>Reality, covers events in real time.</p>	<p>Time consuming</p>

	Contextual, covers content of event.	Selectivity, unless broad coverage Reflexivity - event may proceed differently because it is being observed. Cost, hours needed by human observers.
Participant Observation	[Same as above for direct observations.] Insightful into interpersonal behavior and motives.	Same as above for direct observations.]
Physical Artefacts	Insightful into cultural features. Insightful into technical operations.	Selectivity. Availability.

4.7 Documentation

4.7.1 Available information from documents relating to specific local authorities was studied prior to carrying out interviews and after the interviews a further review of documentary evidence was undertaken. Examples of documents which were reviewed in the research for this dissertation included:

- Organisational web pages (local and national public bodies, suppliers, NGOs)
- Food and procurement strategies and reports produced by local and national public bodies and NGOs..
- Surveys and reports produced by local and national public bodies, NGO campaigning and trade organisations and suppliers.
- Invitation to tender documents
- Press reports , often based on press releases issued by local authorities.

Yin stresses that

Documents must be carefully used and should not be accepted as literal recordings of events that have taken place...For case studies, the most important use of documents is to corroborate and augment evidence from other sources....Because of their overall value, documents play an explicit role in any data collection in doing case studies. Systematic searches for relevant documents are important in any data collection plan (Yin, 1994, p.81).

Yin cautions that the researcher needs to be careful how they interpret the contents of the documents:

Many people have been critical of the potential over-reliance on documents in case study research...It is important in reviewing any document to understand that it was written for some specific purpose and some specific audience...By constantly trying to identify these conditions, you are less likely to be misled by documentary evidence (Yin, 1994, p.82)

4.7.2 In Denmark and Sweden there is lively public debate about organic and local food and sustainable procurement for public kitchens. This results in extensive web-based information and numerous press reports. There is widespread publication of detailed information in numerous reports by official bodies and NGOs. Most kommune websites include a food and meal policy. The Ekomatcentrum statistics for organic usage in individual local authorities are taken up and used by official bodies such as the local government association SKL and uploaded to the local authority public statistics database, Kolada.se (SKL, 2019). The Swedish Food Agency collects and publishes information about public meals. There are overview reports such as Livsmedelsverket 2018a. There is also detailed information about individual local authorities – for example the excel spreadsheet attached to Grausne & Quetel, 2018 (Livsmedelsverket, 2018b). There are also informative regional surveys of public kitchens particularly of Västergötland, such as Skolmatsakademien (2017)). Individual Danish local authorities frequently publish detailed information about sustainable food procurement activities and progress. For example a key word search was carried out on the word “økologi”[organic] on the website of the City of Aarhus www.aarhus.dk. This produced 59 hits. One of these linked to a committee report which itself linked to 35 different documents containing a wealth of detailed information (Aarhus 2019a).

4.7.3 By comparison with Denmark and Sweden there is much less publicly available information for the UK. The best available information relates to London - Good Food for London annual surveys (See above 3.4.18). The sustainable food places web portal <https://www.sustainablefoodplaces.org/members> offered links to websites of 68 local authorities which have developed sustainable food policies – including public food procurement. The amount of detailed information about public food procurement in each of these local authorities varies greatly. Other useful websites were those set up by the Soil Association to publicise the Food for Life healthy and sustainable catering scheme <https://www.foodforlife.org.uk> and <https://www.soilassociation.org/>. The demise of the Childrens Food Trust - and its predecessor the School Food Trust - due to withdrawal of government funding has greatly reduced the amount of publicly available information on UK school food – although older reports from this organisation which are still available on the web present very detailed information which was published in previous years (see 3.4.4 above).

4.7.4 The google search engine was used to identify background information about local authorities prior to arranging interviews. To illustrate how these searches were constructed some key phrases in Danish and Swedish are given in Appendix 2. Google searches in Danish or Swedish were found to be most productive if specific phrases were copied out of relevant documents and pasted into the search engine. These would reproduce the exact phrasing used in Denmark and Sweden and the precise punctuation – including letters of the Danish alphabet which are not found in English - Æ, Ø, Å and ß – and accent marks which are specific to Swedish: Å, Ä, and Ö.

4.7.5 Google translate was used to provide English versions of documents in Danish, and Swedish. On the usefulness of google translate, particularly with translations of Western European languages see Groves & Mundt, K. (2015). On the limitations of google translate see Precup-Stiegelbauer, 2013. The researchers first language is English and his second language is Afrikaans. The strong resemblances in vocabulary and structure between these languages and Swedish and Danish helped

the researcher to improve translations made by google translate. An error usually made by google translate is that the Swedish word “kost” is translated into “cost”. “Kost” is almost identical to the Afrikaans word for food “kos” – which indicates the correct translation.

4.7.6 While doing every google search, note was taken of any useful websites and if they produced a newsletter this was subscribed to. These provided up to date news reports, which could be translated using google translate. The number of newsletters to which the researcher was subscribed grew rapidly during initial stages of the research. (See Appendix 3). It ceased to grow when it appeared that all newsletters which were highly relevant to the research subject had been identified and subscribed to.

4.7.7 The interplay between newsletters, larger documents and google searches can be illustrated by the following example. The questionnaire for the 2018 Livsmedelsverket communal meal survey was first flagged up through a newsletter received on 13th December 2018. The newsletter was the *Måltidsbloggen* (Meals Blog) produced by the Livsmedelsverket, which had been subscribed to about a year previously. This had a brief summary of the 2018 Livsmedelsverket municipal meal survey, which highlighted its importance. It carried a link to the extensive livsmedelsverket public meals web page, which had been updated that day to make reference to the new survey . <https://www.livsmedelsverket.se/maltidsfakta>. This webpage carried links to the survey report in Swedish, the detailed excel tables showing responses from each kommun and the questionnaire . When the questionnaire was translated it revealed that certain questions were particularly relevant to this thesis. A google search could - for example - then be carried out on question F2 *Hur många procent av personalen i måltidsverksamheten vid de kommunala förskolorna har en storköksutbildning, kockutbildning eller liknande?* (How many percent of personnel in the meal workplaces at the communal pre-schools, have a full time education in large-scale cooking, cooking or similar?) This search revealed a series of previous surveys into the same issue which had been carried out in Sweden in recent years – making it possible to assess change over time.

4.8 Semi-structured Interviews

Semi-structured interviews were carried out as part of this research:.

In semi-structured interviews the researcher will have a list of themes and possibly some key questions to be covered, although their use may vary from interview to interview. This means that you may omit some questions in particular interviews, given a specific organizational context that is encountered in relation to the research topic. The order of questions may also be varied depending on the flow of the conversation. On the other hand, additional questions may be required to explore your research question and objectives given the nature of events within particular organisations. The...data will be captured by audio-recording the conversation or perhaps note-taking (Saunders et al, 2012, p.375).

Publicly available sources were used to identify potential interviewees - individuals particularly interested in and knowledgeable about this subject. There was an element of snowball sampling in that initial interviewees were asked to suggest who they would recommend as people to talk to. There was an attempt to select people from different regions, from municipalities of different sizes from big cities down to small rural towns and with different orientations towards organic food. This was done using publicly available information.

The interview lists in section 4.15 distinguish between face to face (F2F) and telephone interviews (Tel) which also includes conversations via skype, zoom or teams. As many interviews as possible were carried out face to face (F2F). From late March 2020 travel to Denmark and Sweden was not practicable due to the pandemic and travel within the UK was restricted by lock downs. Telephone and online interviews continued to be possible. The percentage of face to face interviews was 48% in Denmark (12 out of 25), 35% in Sweden (11 out of 31) and 43% in the UK (12 out of 28). Novick (2008) argues that there are no good grounds to believe that telephone interviews will provide research information less useful than face to face interviews.

4.8.1 interviews with public officials and NGOs

The categories of public officials interviewed were catering, procurement and sustainability managers. The lists of interviews arranged by country are in section 4.15, Tables 22a to 22c. Catering Managers are responsible for the management of the public kitchens which largely feed children and elderly people. Procurement officers are responsible for organizing the process of procuring food for these kitchens. Larger municipalities have dedicated procurement staff whereas in smaller municipalities procurement may be carried out by the Catering Manager or it may be done by the procurement manager of a neighbouring municipality as part of a collaborative procurement arrangement. Sustainability managers will have responsibility for the municipality's sustainability policies – including those relating to public kitchens. Interviews were also sought with public officials who play a relevant role at national level and with elected politicians.

Outside the public sector interviews were sought with NGOs involved with public provision of food. Their activities included publicly campaigning for healthy and sustainable food in public kitchens. They also played a role in lobbying municipalities – for example to increase the percentage of organic and/or plant-based food. Further activities included:

- Collection of statistics
- Offering accreditation to confirm that public kitchens had reached a certain level
- Running competitive award schemes directed at promoting their objectives.
- Representing groups of food producers.

There were also interviews with consultants who provided training and advice for public kitchens with regard to healthy and sustainable food.

Interviews were carried out in English. The general level of English is quite high in Denmark and Sweden. Interviewees were asked to give the Danish or Swedish equivalents of technical terms where they did not know the English word. The interviewer's knowledge of these two languages was generally sufficient that he was familiar with most of these technical terms. The nature of this interviewing exercise was that the people who were willing to give an hour – or slightly more – of their time

to talk to the researcher could be reasonably assumed to have a strong personal interest in the subject matter as well as being confident in their ability to discuss the subject in English and willing to discuss their work with an outside researcher. They could give their personal insights into how and why these policies are developed and carried out.

The entry in tables 20a-20c for years of experience shows total experience from all career phases for people interviewed and adds together the experience where two people are interviewed. The most common pattern was that individuals had spent their working lives in the food industry but had changed jobs several times. Approximately 40% of those initially approached by email agreed to an interview. The others typically did not respond to the initial email. For the third and final Swedish study visit the researcher tried telephoning people who had initially been approached through email. Of eleven people who were telephoned, four agreed to an interview. In two cases the phone rang and was not answered, in three cases messages were left in English on a Swedish language answerphone and there was no response and in two cases the telephone was put down when the researcher identified himself.

It was not originally intended that interviewees would be re-interviewed after a period of time. Where it was possible to do a further interview, these are shown in the tables in section 4.15 with the two interviews shown – for example – as NGODK2a and NGODK2b. In three cases individuals approached for an interview responded by providing detailed and relevant information in writing (section 4.16). The interviewees were busy people. There were only ten occasions when an interview was longer than 60 minutes. It was a challenge to have a full discussion with the interviewee within the limited amount of time.

4.8.2 Approach to analysis of data generated

Interviews were not tape recorded. They were transcribed as soon as possible after the interview based on handwritten notes taken during the interview. Data within the interviews was then coded to relate them to the research objectives. This thesis uses

the pattern matching approach to thematically organising and analysing qualitative data in social science research. Saunders, Lewis & Thornhill, 2012, summarise the pattern matching approach

Pattern matching involves predicting a pattern of outcomes based on theoretical propositions to explain what you expect to find when analyzing your data. Using this approach you will need to develop a conceptual or analytical framework, utilizing existing theory and then test the adequacy of the framework as a means to explain your findings. If the pattern of your data matches that which has been predicted through the conceptual framework, you will have found an explanation, where possible threats to the validity of your conclusions can be discounted (Saunders, Lewis & Thornhill, 2012, p.579)

Consideration was given as to whether to use nVivo to analyse the interview data (Bazeley & Jackson, 2013). It was decided that it would be sufficient to analyse the interview notes by reading through them and assigning codes.

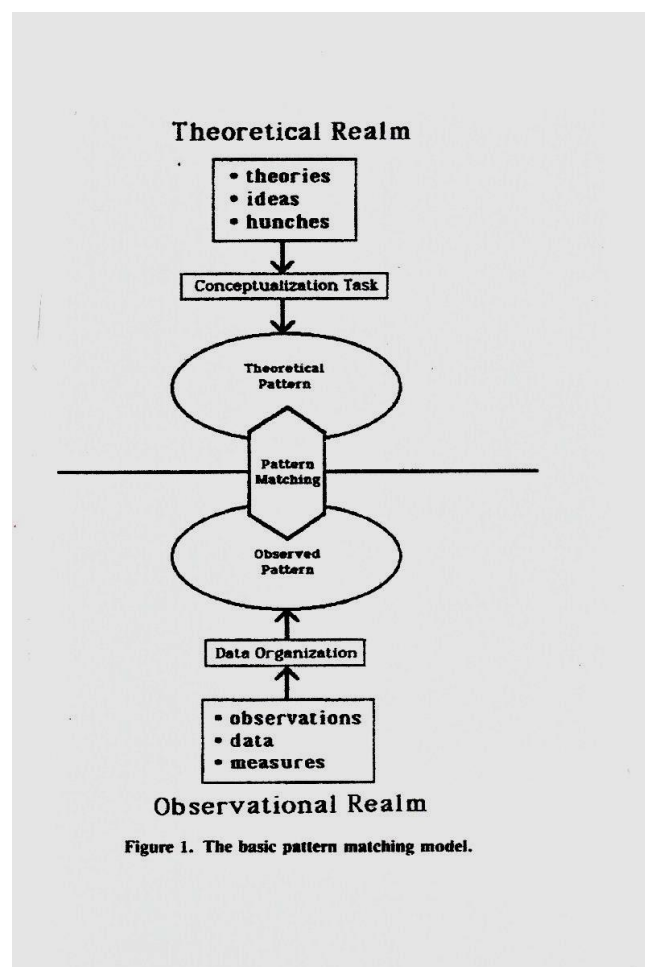


Fig 10 The basic pattern matching model (Source, Trochim, 1989, fig 1)

4.9 Observation & Participant Observation

Observation entails the systematic noting and recording of events, behaviours and artefacts which are relevant to the case study (Marshall & Rossman 1999, p107). Events are observed and the observer interprets them – attaches a meaning. The opportunities for observation while carrying out this research were limited. It was not possible to observe the actual preparation of food inside kitchens or meetings between procurement officers and potential suppliers. Only one one occasion was it possible to observe the actual preparation of food inside a public kitchen – as part of a visit to interview the kitchen manager. On another occasion it was possible to observe a meeting between procurement officers and potential suppliers.

Over a five year period the researcher attended a number of seminars and conferences at which food procurement policies were discussed:

- Helsinki – October 2011 Presentation by Copenhagen House of Food to Finnish public catering managers
- Ecoprocura – European sustainable procurement conference, Malmo, September 2012. Discussion with Swedish procurement officer.
- Brussels – November 2012 Presentation by Copenhagen House of Food to European Commission sustainable food hearings
- Nuremburg – Biofach, February 2013: Organic food in Danish public kitchens.
- Bristol Food Conference 11 June 2012 - presentation by Malmo City Council
- Helsinki - October 2014 Sustainable Procurement for Nordic Kitchen – two day conference with attendance from Denmark, Norway, Sweden and Finland..
- Bristol URBACT Seminar, March 2015 – discussion of sustainable food procurement in Gothenburg
- Barcelona Procura+ Conference 2015: Public catering in Copenhagen

- Food & the City Seminar Copenhagen August 2016 – presentation by Copenhagen House of Food
- Nov 2016 Nordic Organic Food Fair – exhibition with presentations

Until six years previous to the commencement of the PhD research, the researcher had personal experience of the development and implementation of public procurement policies within local government. This took place over a five year period, when the researcher carried out departmental procurement duties and participated in development of sustainable procurement policies at local and regional level. This included discussions with the school catering manager and officers from other local authorities who were engaged in public food procurement and attendance at national conferences on public sector procurement.

Between 2014 and 2020 the researcher was Secretary of Good Food Greater Manchester – the emerging food policy council for the Greater Manchester city region. He consequently participated in discussions about public food procurement in Greater Manchester which took place at several meetings. He also attended meetings of the national organization Sustainable Food Cities at which public food procurement was discussed and meetings of two local food partnerships outside Greater Manchester. The researcher also had discussions and exchanged emails over several months with a software company which was trying to break into the Swedish market for specialized software for public kitchens and who described their impressions of the different approaches to food waste in the UK and Sweden. For a full list of participant observations see Table 24 below.

4.10 Physical artefacts

The decision was taken not to include physical artefacts within the scope of this research on the grounds that they were unlikely to be sufficiently available to the researcher. The physical artefacts which were potentially relevant to this study were the school meals themselves and the diverse food ingredients, packaging materials and equipment used to prepare them. It would be perfectly possible to envisage a

study of school food procurement which focused in detail on looking at and tasting school meals in different schools and local authority catering services. However for this dissertation the decision was taken to base the research on interviews and documentation because it was thought unlikely that access could be obtained to a sufficient number of school meals to make meaningful generalisations.

4.11 Triangulation

Triangulation is “the use of different data collection techniques within one study in order to ensure that the data are telling you what you think they are telling you” (Saunders et al., 2012, p.179). For each organisation studied a search was made for documentation prior to the interviews and this enabled the interview to be conducted making reference to the documentation. After the interview there was a further examination of documentary sources suggested or provided by the interviewee.

4.12 Combining semi-structured interviews and documents

The decision was taken that the research approach would be a combination of semi-structured interviews and review of documents. The case studies would be those local authorities where it had proved possible to arrange an interview with an individual with knowledge of the workings of the organization – such as a procurement, catering or environmental manager. The results of the interview would be considered alongside documentation which had been gathered about the same organization.

4.13 Developing and piloting the interview schedule

This PhD thesis follows from research carried out for the degree of M Phil, to which it has a large degree of similarity (Stein, 2014, Table 7e). Following informal discussions during a visit to Sweden and Denmark in November 2016, a draft set of questions was

drawn up. This was piloted with three organisations – two in Sweden and one in Denmark – during November 2017. The answers are not included in the aggregated interview results.

The following changes resulted from the piloting process

Q1 Role of interviewee – more detailed questions added

Q3 Questions added about food strategy

Q4 Questions added about reasons for not buying from local suppliers; trends in organic food purchasing

Q5 This question was revised to make reference to imports and Swedish production of both organic and conventional food.

Q8 Question about co-ordinated distribution expanded with addition of six supplementary questions

Q9 Relationship with big wholesalers – expanded with three supplementary questions

Q10 Question added about difficulties with sourcing from local suppliers.

Q11 Separate question added on seasonal menus – with four supplementaries.

Q12 Separate question added on cooking approach with four supplementaries.

Q13 Separate question added on meat usage with seven supplementaries..

Q14 Separate question added on food waste with five supplementaries.

Q15 Question added about central kitchens – with three supplementaries.

Q17 Questions added about food volume trends.

Q18 Questions added about external influences, with five supplementaries.

Q19 Question added about fish procurement with two supplementaries.

Q20 Question added about Fairtrade – with three supplementaries.

Q21 Question added about food from Thailand, Brazilian beef and palm oil.

Q22 Question added about supporting innovative food products, with five supplementary questions.

Questions which were taken out of the original questionnaire related to:

- New Nordic Food
- Organic food in Finland and Norway
- Percentage of organic farmland and national distribution

The final set of research questions is show below in Table 21:-

4.14 Interview schedule – relationship between research questions and literature review

The research questions which have been drawn up into an interview schedule for carrying out semi-structured interviews with municipalities and other organisations are set out below. After the initial question an attempt was made to spell out the sort of information which it was hoped would be collected through this question. The final column provides a cross-reference to the Objectives and the academic literature review (Chapter 2) and National Overview (Chapter 3). These questions were designed to be asked of local authorities. They also however served as a framework for structuring the discussion with NGOs and consultants.

Table 21 Research Questions – relationship to academic literature review and national overviews

	Interview Question	No	Cross-reference to literature review and National overviews
	Group 1 Classification Questions		
	Role of interviewee (Catering Manager; Procurement Manager; consultant, NGO; politician] Length of experience in this role. .What category of food are they concerned with: <ul style="list-style-type: none"> • Pre schools (Nurseries)? • Primary Schools? • Secondary schools? • Elderly persons homes – care or nursing homes? • Elderly people living at home – meals on wheels • Hospital food • Other 	1	
	Does the municipality/county do food procurement on its own or does it do it as part of a group of public bodies? <ul style="list-style-type: none"> • If the latter how long has this arrangement been in place? • What is the population covered by procurement? 	2	AC7e; 3.2.26; 3.2.27; 3.2.30; 3.3.17; 3.4.7; 3.4.17
	Group 2 Food Strategy		
	Does your organisation have a food strategy? <ul style="list-style-type: none"> • When was it last amended? • What major changes were made? 	3	AC5a; 3.2.25; 3.3.26; 3.4.17
	Group 3 Organic and local food		
	Does your organisation buy organic food? <ul style="list-style-type: none"> • If not, why not? (Price? Availability? Quality differences) • If yes, how much and what types of food? • Fruit and vegetables Eggs, Bread, dairy, Chicken, Piguat, Beef Any other meat? • Is the amount of organic food purchased increasing, decreasing or remaining the same? 	4	AC6; AC15; AC17; 3.2.3 to 3.2.10; 3.2.15; 3.2.26; 3.2.28; 3.2.29; 3.2.30; 3.3.1;3.3.3 to 3.3.10; 3.3.18; 3.3.20; 3.3.21;3.3.26; 3.3.28;3.3.29;

			3.3.30; 3.3.31; 3.4.2; 3.4.3; 3.4.10; 3.4.11; 3.4.14; 3.4.18; 3.4.19; 3.4.20; 3.4.21; 3.4.22;
	What food products - organic or conventional - are you able to buy from within your country <ul style="list-style-type: none"> • Which come from your local area or your region? • And which products have to be imported because there is no suitable product produced in your country? 	5	AC6e; 3.2.8; 3.2.12; 3.2.15; 3.2.17; 3.2.18; 3.2.28; 3.2.29; 3.2.30; 3.3.11; 3.3.13; 3.3.14; 3.3.27; 3.3.28; 3.3.31; 3.4.2; 3.4.3; 3.4.10; 3.4.14a; 3.4.14b; 3.4.19; 3.4.20; 3.4.22;
	Group 4 Procurement practice		
	Supplier engagement - Seeking out local suppliers who can provide requirements at an acceptable price. <ul style="list-style-type: none"> • Do you do this? • How do you do it? • Seminars to explain public procurement to potential suppliers. • Formal “Meet the Buyer” meetings? • Informal contact with suppliers prior to the tender going out? 	6	Ac7a; Ac7b; AC7d; 3.2.18;3.2.28; 3.3.11; 3.2.29; 3.2.30; 3.3.13; 3.3.16; 3.3.28; 3.3.31; 3.4.9; 3.4.12; 3.4.22;
	Lotting (sub-division) of contracts. <ul style="list-style-type: none"> • Do you sub-divide your contracts in any way? • If so do you divide by area or by product or both? • Has the way you divide things up been successful in assisting SMEs to access public procurement opportunities.? 	7	AC7e; 3.2.3; 3.2.18;3.2.29; 3.3.11; 3.3.13;3.3.16; 3.4.9; 3.4.12; 3.4.14a; 3.4.14b; 3.4.20; 3.4.22;
	Do you have any arrangements for Co-ordinated Distribution?	8	AC7f; 3.2.11; 3.2.18; 3.2.20;

	<ul style="list-style-type: none"> How many municipalities are covered by this arrangement? How long has it been in operation? Is it successful in reducing transport costs, Does it provide the kitchens with food when they need it. Does it assist small suppliers Do you know which local suppliers benefit from these arrangements? 		3.2.27;3.2.28; 3.2.30; 3.3.28; 3.3.31; 3.4.9; 3.4.22
	Working with a food wholesaler to access organic and/or local food? <ul style="list-style-type: none"> Have you had good experiences? Or have you had a difficult relationship with your wholesaler? Have there been any legal disputes over food tenders? 	9	AC7g; 3.2.12; 3.2.19; 3.3.17; 3.3.28; 3.4.8
	What are the main problems with trying to source food from local suppliers? <ul style="list-style-type: none"> Price? Availability? Quality? Do you have any innovative ways of obtaining food from local suppliers? 	10	AC7b; 2.24.2; 2.26.2; 2.25; 2.27.3; 2.28
	Group 5 Changing kitchen practice		
	Seasonal menus <ul style="list-style-type: none"> Have you introduced this approach? How do you define it precisely? What have you needed to do to implement this approach eg new recipes based on seasonally available ingredients extra staff training. What have the results been – in terms of the acceptability of food to customers and costs of procuring the raw materials? 	11	AC13d; 3.2.11; 3.2.21; 3.2.28; 3.2.29; 3.3.11; 3.3.29; 3.3.31; 3.4.9; 3.4.12; 3.4.14a; 3.4.18; 3.4.19; 3.4.20; 3.4.22;
	Cooking approach. Is it predominantly based on heating up bought-in and pre-prepared meals (chilled or frozen) or cooking from basic ingredients (“from scratch”) ? <ul style="list-style-type: none"> Has your approach changed over time? What have you needed to do to introduce the changes and what have been the results? Have you increased staff training? How have staff responded to any changes in the nature of their work? 	12	AC13b; AC13c; 3.2.6; 3.2.11; 3.2.21;3.2.28; 3.3.11; 3.3.13; 3.3.29; 3.3.30; 3.3.31; 3.4.9; 3.4.12; 3.4.18; 3.4.19; 3.4.20; 3.4.22;

	Meat usage Has the amount of meat you are purchasing increased, decreased or stayed the same?. <ul style="list-style-type: none"> • If you have reduced your meat purchasing, how have you gone about doing this? • Have you changed what type of meat you buy? • Do you have meatfree days in the dining rooms? • Are users of your meal service always offered the option of vegetarian or vegan food if they do not want meat? • How do service users respond to these measures? • Do you change recipes to reduce the amount of meat in popular dishes and replace it with vegetables? • Are any changes relating to meat related to any other changes you are bringing about in the kitchen? 	13	AC13a; 3.2.11; 3.2.23; 3.2.28; 3.2.29; 3.3.22; 3.3.31; 3.4.15; 3.4.18;
	Food waste? <ul style="list-style-type: none"> • Do you measure the amount of food waste? • Has the amount of waste risen, fallen or stayed the same? • Have you introduced any new practices relating to food waste? • Are your food waste initiatives related to any other changes you are bringing about in the kitchen? • Do you have any targets for reducing food waste. 	14	AC13e; 3.2.11; 3.2.28; 3.2.29; 3.2.22; 3.3.25; 3.3.29; 3.3.31;
	Do you have a central kitchen – or more than one? Or do you have cooking in a larger number of kitchens in schools, nurseries and elderly peoples homes? <ul style="list-style-type: none"> • Have your arrangements as regards cooking in central or decentralised kitchens changed over time. • Why? What arrangements have worked best for you? 	15	AC13f; 3.3.15; 3.3.31;
	Do you measure the carbon footprint of your catering operation? <ul style="list-style-type: none"> • What items make biggest contribution to carbon footprint? • Do you aim to reduce it in future? 	16	AC11; AC12; 3.2.24; 3.2.26; 3.3.24; 3.4.16
	Is the volume of food required every year for your organisation going up., going down or staying the same? <ul style="list-style-type: none"> • To what do you attribute any changes? • Is the population for which you are providing a catering service increasing or declining? • Is this affected by demographic changes? • Is this affected by changes in the organisation and coverage of the catering service? 	17	AC5a; 3.3.14;

	Group 6 External influences		
	<p>How has the work you do in the public kitchens been influenced by changes in national government policies, the views of local politicians service users (children; parents; elderly people) animal welfare or environmental organisations?</p> <ul style="list-style-type: none"> • Ask about national or international nutritional recommendations – such as Nordic nutritional recommendations or the UK school food standards. • Has your organisation received any national regional or local award or accreditation? • How has applying for such awards shaped what you do? • How do you compare with neighbouring municipalities? • Has your service been affected by budgetary restrictions/spending reductions? 	18	AC5a 3.2.4; 3.2.5; 3.2.6; 3.2.7; 3.2.8; 3.2.10; 3.2.11; 3.2.12; 3.2.13; 3.2.14; 3.2.16; 3.2.17; 3.2.23;3.3.2; 3.3.3;3.3.6; 3.3.8; 3.3.10; 3.3.12;3.3.14; 3.3.15;3.3.16; 3.3.17;3.3.18; 3.3.19; 3.3.19; 3.3.20; 3.3.22; 3.4.2; 3.4.4; 3.4.7; 3.4.9; 3.4.10;3.4.12; 3.4.13; 3.4.14 ; 3.4.22
	Group 7 Environmental sustainability and acceptable working conditions		
	Do you buy eggs which are free range or organic and free range?	19	Ac8a; 2.20.4 3.4.18; 3.4.22; 2.20.5
	Do you buy fish for your kitchens?. <ul style="list-style-type: none"> • If wild-caught does it bear any sustainability label – such as Marine Stewardship Council label? • If farmed, what sort of fish farm does it come from? Sea-based or land-based? 	20	AC8b; 2.20.4; 2.20.5 3.2.11; 3.4.18;
	Do you buy any Fairtrade products? If so, which? <ul style="list-style-type: none"> • Tea, coffee, sugar, chocolate, cocoa, bananas, pineapples, other? • What proportion is it of total food purchasing? • Have your policies for buying these products changed over the years? 	21	AC9a
	Do you buy : <ul style="list-style-type: none"> • Food from Thailand? • Beef from Brazil? • Palm oil 	22	AC8c; 3.4.16

	If you do not buy them, why not? If you buy them, do you make any ethical or environmental stipulations?		
	Group 8 Supporting innovative food producers		
	<p>Do you buy any innovative food products?</p> <ul style="list-style-type: none"> • Describe these. For example new vegetarian products. • When were they introduced? • Where is the producer located? • How did you find them? • How successful are the products? 	23	AC10

4.15 Interviews Denmark, Sweden & UK.

The interviews which were carried out are summarised in the three following tables

4.15.1 Interviews in Denmark

Total number of interviews was twenty five. In six cases the same individual was interviewed twice. The people who were interviewed included nine officers from six kommunes. Five of the kommunes ranged in population size between 26,000 and 75,000. The average Danish kommune has a population of 56,000. KOMDK3 was much larger and can be considered a city. The four NGOs included two promoting healthy and sustainable lifestyles, one professional body of kitchen managers and one promoting sustainability. There was one consultancy organisation providing training in healthy and sustainable kitchen practices and two self employed consultants working on organic conversion in public kitchens and one working in food marketing. There were two officers of government bodies promoting sustainable consumption policies. At KOMDK1 two people were interviewed together.

Table 22a Denmark – Interviews

No.	Interview Code	Date	Duration (minutes)	Organisation (Type)	Role	Experience (Years)	Face to Face [F2F] or Telephone(Tel)
DK1	NGODK1	4 Mar 19	60	NGO	Worker	10	F2F
DK2	NGODK2a	4 Mar 19	60	NGO	Chairman	10	F2F
DK3	CONSDK1a	4 Mar 19	60	consultant	consultant	20	F2f
DK4	KOMDK1	5 Mar 19	60	kommune	Catg & Proct Mgr	20	F2F
DK5	KOMDK2	5 Mar 19	60	kommune	Sust Mgr	5	F2F
DK6	CONSDK2	6 Mar 19	60	consultant	consultant	20	F2f
DK7	KOMDK3a	23 Apr 19	45	kommune	Proct Mgr	20	Tel
DK8	KOMDK4a	1 May 19	60	kommune	Sust Mgr	10	F2F
DK9	NGODK3	2 May 19	60	NGO	Researcher	8	F2F
DK10	KOMDK5	2 May 19	60	kommune	Sust Mgr	4	F2F
DK11	KOMDK3b	2 May 19	60	kommune	Sust Mgr	6	F2F
DK12	CONSDK3a	3 MAY 19	110	Self employed	Consultant	30	F2F
DK13	GOVTDK1	3 May 19	60	Govt body	Officer	7	F2F
DK14	KOMDK3c	8 Apr 20	45	kommune	Proct Mgr	21	tel
DK15	CONSDK1b	24 Apr 20	40	Consultant	Consultant	21	tel
DK16	CONSDK4a	23 Sept 20	60	Consultant	Consultant	15	Tel
DK17	KOMDK4b	2 Nov 20	45	kommune	Sust Mgr	11	Tel
DK18	CONSDK4b	23 Nov 20	60	Consultant	Consultant	15	Tel
DK19	KOMDK6	17 Nov 20	60	Kommune	Food Mgr	8	Tel
DK20	NGODK4	27 Nov 20	50	NGO	Researcher	7	Tel
DK21	GOVTDK1	17 Mar 21	40	Govt body	Officer	9	Tel
DK22	CONSDK3b	8 Apr 21	60	Self employed	Consultant	32	Tel
DK23	NGODK2b	26 May 21	50	NGO	Chairman	10	Tel
DK24	GOVTDK2	28 June 21	45	Govt body	Sust Mgr	13	Tel
DK25	KOMDK3d	10 Aug 21	60	Kommune	Catg Mgr	14	Tel

4.15.2 Interviews in Sweden

The thirty one interviews included officers from fourteen communes. KOMSE2 was interviewed twice and KOMSE7 was interviewed three times. Seven of the communes ranged in population size between 3,000 and 70,000. The average Swedish commune has a population of 33,000 . Six communes had populations above 100,000 and can be considered cities. A regional perspective was given by three interviewees from one region of southern Sweden and two interviewees from two other regions – who worked in projects promoting local food procurement and healthy and sustainable catering. Four NGOs promoting healthy and sustainable food were interviewed. At KOMSE9 two people were interviewed together.

Table 22b Sweden - Interviews

<u>Number</u>	<u>Code</u>	<u>Date</u>	<u>Duration (Minutes)</u>	<u>Organisation (Type)</u>	<u>Role</u>	<u>Experience</u>	<u>F2F or Tel</u>
SE1	KOMSE1	6 SEPT 18	60	kommune	Cat Mgr	15	F2F
SE2	KOMSE2a	11 Sept 18	60	kommune	Cat Mgr	20	Tel
SE3	NGOSE1	14 SEPT 18	58	NGO	Worker	10	Tel
SE4	KOMSE3	15 Oct 18	60	Kommune	Proct Mgr	20	F2F
SE5	REGNSE1	16 OCT 18	70	NGO	Consultant	15	F2F
SE6	KOMSE4	17 OCT 18	60	Kommune	Cat Mgr	20	F2F
SE7	KOMSE5	22 Oct 18	40	Kommune	Cat Mgr	30	Tel
SE8	KOMSE6	23 Oct 18	80	Kommune	Cat Mgr	18	Tel
SE9	NGOSE2	11 Mar 19	60	NGO	Campaigner	20	Tel
SE10	KOMSE7a	31 May 19	50	Kommune	Cat Mgr	25	Tel
SE12	REGNSE2	17 June 19	60	Region	Trg Mgr	6	F2F
SE13	KOMSE8	17 June 19	75	Kommune	Policy	15	F2F
SE14	KOMSE8	17 June 19	60	Kommune	Policy	33	F2F
SE15	REGNSE2	17 June 19	60	Region	Policy	15	F2F
SE16	REGNSE2	18 June 19	120	Region	Proct Mgr	16	F2F
SE17	KOMSE8	18 June 19	60	Kommune	Cat Mgr	7	F2F
SE18	KOMSE8	18 June 19	60	Kommune	Policy	2	F2F
SE19	KOMSE8	2 july 2019	80	Kommune	Proct Mgr	30	Tel
SE20	KOMSE7b	28 JAN 20	35	Kommune	Cat Mgr	25	Tel
SE21	KOMSE9	22 APR 20	40	Kommune	Cat Mgr(2)	30	Tel
SE22	KOMSE10	28 Apr 20	60	Kommune	Proct Mgr	5	Tel

SE23	KOMSE11	5 May 20	50	Kommune	Proct Mgr	30	Tel
SE24	KOMSE12	19 May 20	30	Kommune	Proct Mgr	39	Tel
SE25	KOMSE13	26 May 20	60	Kommune	Proct Mgr	25	Tel
SE26	REGNSE3	2 JULY 20	60	Region	Proct Mgr	31	Tel
SE27	NGOSE3	29 SEPT 20	40	NGO	CEO	24	Tel
SE28	NGOSE4	12 Jan 21	40	NGO	Proct Mgr	30	Tel
SE29	KOMSE7c	26 Feb 21	30	Kommune	Catg Mgr	26	Tel
SE30	KOMSE14	15 Mar 21	65	Kommune	Cat Mgr	30	Tel
SE31	KOMSE2b	21 Apr 21	75	Kommune	Cat Mgr	22	Tel

4.15.3 Interviews in the United Kingdom

The interviews included twelve officers from eleven local authorities with populations ranging between 183,000 and 780,000. Thirteen NGO people, one consultant, one quango and one civil servant involved in promoting healthy and sustainable food were also interviewed. At COUNUK1 two people were interviewed together.

Table 22c United Kingdom – Interviews

<u>Number</u>	<u>Interview Code</u>	<u>Date</u>	<u>Duration(min utes)</u>	<u>Organisation (Type)</u>	<u>Role</u>	<u>Experience [years]</u>	<u>Face to Face [F2F] or Telephone (Tel)</u>
UK1	GOVTUK1a	21 Mar 19	50	govt	Procurement	34	Tel
UK2	NGOUK1a	13 May 19	40	NGO	NGO worker	13	Tel
UK3	NGOUK2	2 July 19	30	NGO	NGO worker	35	Tel
UK4	NGOUK3	3 July 19	50	NGO	worker	16	Tel
UK5	COUNUK1	5 July 19	90	Council	Catering(2)	35	F2F
UK6	COUNUK2	8 July 19	40	Council	Food Policy	12	Tel
UK7	NGOUK1b	9 July 19	70	NGO	NGO worker	11	Tel
UK8	COUNUK3a	16 July 19	40	Council	Food Policy	16	Tel
UK9	COUNUK4	17 July 19	65	Council	Food Policy	10	Tel
UK10	NGOUK4	19 July 19	40	Quango	Food policy	11	Tel
UK11	COUNUK3b	2 sept 19	30	council	Catering	17	Tel
UK12	NGOUK5	6 Jan 20	60	NGO	Food policy	21	tel
UK13	NGOUK6	29 Jan 20	115	NGO	Food policy	9	FtoF
UK14	CONSUK1	3 Feb 20	60	consultant	Food policy	12	FTOf
UK15	COUNUK5	19 Feb 20	80	Council	Catering	16	FtoF
UK16	NGOUK7	3 Mar 20	50	NGO	Healthy eating	8	Tel
UK17	COUNUK6	4 Mar 20	60	Council	Catering	11	FtoF
UK18	COUNUK7	9 Mar 20	35	Council	Healthy eating	7	Tel

UK19	COUNUK8	12 Mar 20	50	Council	Catering	19	Tel
UK20	COUNUK9	13 Mar 20	40	Council	Healthy eating	20	Tel
UK21	COUNUK10	26 Mar 20	65	Council	Catering	16	Tel
UK22	NGOUK8	20 Apr 20	50	NGO	Researcher	23	Tel
UK23	GOVTUK1b	26 Mar 21	60	Govt	Procurement	36	Tel
UK24	NGOUK9	6 Apr 21	60	NGO	Manager	6	Tel
UK25	NGOUK10	11 June 21	30	NGO	Manager	8	Tel
UK26	NGOUK11	25 June 21	50	NGO	Manager	20	Tel
UK27	COUNUK11	29 June 21	60	Council	Manager	23	Tel
UK28	NGOUK12	11 Oct 21	40	NGO	Researcher	25	Tel

4.15.4 The interviewees – their organisations and role

This table gives an overview of interviewees for the three countries showing whether they were from the public sector or NGOs and the roles they occupied.

Table 22d Interviews – organisations and roles

<u>Roles</u>	<u>Denmark</u>	<u>Sweden</u>	<u>United Kingdom</u>	<u>Total</u>
<u>Public Sector</u>				
Catering	2	10	8	20
Procurement/Logistics	2	10	1	13
Sustainable food policy	5	3	3	11
Political adviser		1		1
Local food promotion	1			1
Healthy eating in schools			2	2
<u>Consultants</u>				
Catering	3	0	1	4
Logistics	1	0		1
NGOs - workers	4	4	13	21
Total - interviewees	18	28	28	74
Second/third interviews	7	3	1	11
Total interviews	25	31	29	85

The largest group of interviewees was catering managers – who were responsible for operational control of public kitchens. They were in most cases also involved in procurement decisions - although they might share responsibility with procurement staff. In Denmark three catering consultants also had operational responsibility for public kitchens. The thirteen people within the category procurement/logistics were responsible for procurement decision making for public kitchens. In the case of Sweden four of the procurement managers were also responsible for logistics –

coordinated distribution projects. Twelve people worked on sustainable food policy – which gave them insight into public food procurement. Two UK interviewees were employed to promote healthy eating to schoolchildren and their parents. The eighteen NGO interviewees came from a range of organisations aiming to promote healthy and sustainable food. With KOMDK1 and UKCOUNCIL1 two people were interviewed.

4.16 Written responses and participant observations

Two people responded to requests for interviews by providing written responses to specific questions. A third person provided tender documentation (WRIT2).

Table 23 Written responses

Code	Date	Source	Description
WRIT1	29 Oct 2018	Business Adviser	Response to questions – coordinated distribution in Sweden
WRIT2	29 April 2019	Procurement Officer	Tender Documentation for National Food Tender – Denmark 50.90 Fødevarer [5 MB]
WRIT3	29 Feb 2020	Consultant	Response to questions – organic food and climate change in Denmark

Table 24 Participant Observation in the UK

Code	Date	Description
PO1	24 Mar 2017	City Region food partnership meeting – Presentation by School catering manager (25 minutes)
PO2	24 Nov 2017	City Region food partnership meeting – discussion about public food procurement (20 minutes)

PO3	3 May 2018	City Region food partnership – discussion with school catering manager (90 minutes)
PO4	25 Oct 2018	Local food partnership conference – discussion of food procurement
PO5	5 Dec 2018	Local food partnership meeting - discussion of food procurement
PO6	13 June 2019	Sustainable Food Cities national conference - Newcastle
PO7	Nov 2019-Mar 2021	Discussions with UK catering software company – developing Swedish marketing strategy. Email exchanges & telephone conversations.
PO8	30 Jan 2020	APSE Facilities, Catering & Cleaning Seminar - Nottingham
PO9	13 Feb 2020	Food for Life National Conference - London
PO10	13 Mar 2020	City Region food partnership – zoom discussion with software provider about government plans for national dynamic food procurement (DFP) scheme [60 minutes]
PO11	20th May 2020	Local food partnership via zoom – Food economy and procurement Working Group. Discussion of proposed national DFP roll out.
PO12	26 June 2020	Webinar presentation by Crown Commercial Services about proposed national DFP system (Crown Commercial Services 2020a)
PO13	21 Oct 2020	Webinar hosted by South West Food Hub about proposed regional DFP pilot. Discussion of Logistics
PO14	12 Apr 2021	Teams - Discussion about international publicity for DFP

Chapter Five Findings

5.1 Introduction

Chapter 5 presents findings from the data collection stage of the research. Sections 5.2 to 5.5 deal with key issues relating to public food procurement: the scale and quality of public catering; organic food; local food; scale of food procurement and logistical arrangements. Sections 5.7 to 5.11 relate to specific product categories: sustainable fish, free range eggs, fairtrade, palm oil and innovative products. Sections 5.12 to 5.16 relate to changes in kitchen practices: growth of scratch cooking & seasonal menus; reduction of meat usage, waste and carbon footprint; centralised or decentralised kitchens. Sections 5.17 and 5.18 discuss interviewees views on international comparisons and academic research in Sweden. Within the thesis some information could conceivably be inserted in several places. For example dynamic food procurement is discussed under 5.4. However with respect to the UK this is also discussed under 5.4.3c and 5.6.2c. Table 25 shows how Sections are related to questions from the interview schedule in Chapter 4, paragraph 4.14.

Table 25 Overview of findings chapter

Topic	Section	Questions
Scale & quality of public catering	5.2	Questions 17 and 18
Organic food procurement	5.3	Questions 4 and 5
Local, regional and national procurement	5.4	Question 6
Scale of Food Procurement	5.5	Questions 2 and 7
Logistical arrangements for local food supply	5.6	Question 8 and 9
Sustainable Fish	5.7	Question 20
Free range eggs	5.8	Question 19
Palm Oil, Thai chicken, Brazilian beef	5.9	Question 22
Fairtrade	5.10	Question 21
Innovative products	5.11	Question 23
Kitchens: Scratch cooking & seasonal menus	5.12	Question 11 and 12
Kitchens: Reducing Meat	5.13	Question 13
Kitchens: Reducing waste	5.14	Question 14
Reducing Carbon Footprint	5.15	Question 16
Kitchens – Centralised or Decentralised	5.16	Question 15
International Comparisons	5.17	
Lack of academic research in Sweden	5.18	

5.2 Scale and quality of public catering

This section discusses for each country developments in the scale of local authority catering provision, volume of spending, privatisation and school food standards. It shows how these are shaped by government policies. This section relates to Questions 17 and 18 in the Interview Schedule.

5.2.1 Sweden

5.2.1a Large-scale public catering

In Sweden the fourteen communes interviewed all had direct responsibility for large scale catering activities for schools, pre-school children and elderly people. Food was provided free of charge to all children. The number of people receiving meals from public kitchens was stable in most communes. Particularly in the larger communes numbers were increasing due to population growth (KOMSE2; KOMSE3; KOMSE8).

5.2.1b Levels of Public spending

None of the Swedish interviewees referred to reductions in spending on public kitchens. Two communes referred to their politicians' budgetary decisions as making it more difficult for catering managers to increase the percentage of organic food (KOMSE2a and KOMSE14). The higher price of organic food had to be compensated by achieving budget savings. One commune said that other departments were spending over their budgets but not the public kitchens, which were able to stay within budget by reducing meat usage, even while increasing the percentage of organic food (KOMSE7b).

5.2.1c Food standards rarely compromised by outsourcing

Outsourcing of public kitchens is not a widespread phenomenon in Sweden (KOMSE1). KOMSE14 told us that outsourcing had declined

In Sweden we used to have a lot of private companies doing catering for kommuner but they didn't invest in the kommune kitchens. The kommuner took over kitchens so they could do capital expenditure to create good kitchens. It was better for kommuner to have their own organisations so the politicians can oversee and develop the service.

One interviewee referred to free schools as something which affected a neighbouring kommune (KOMSE4) . Another stressed that free schools are also obliged to supply free and nutritious school food (KOMSE1). KOMSE3 was interviewed the day after national and local elections. The interviewee expressed concern that if the right wing parties won power in the kommune they would outsource the public kitchens to private caterers, sack staff and cut back on organic food. The next day it was announced that the Social Democrats had narrowly retained control.

5.2.2 Denmark

5.2.2a Limited scale of public catering

The six Danish local authorities interviewed gave us details of their catering provision. Interviews highlighted the limited scale of public catering. Food for elderly was provided in all the kommuner except KOMDK1. KOMDK1, KOMDK4 and KOMDK6 provided no school meals. KOMDK2 provided school meals at five schools and KOMDK5 at two out of four schools – paid for by parents with no public subsidy. KOMDK3 provided school meals with a substantial public subsidy but the quantity of school meals available was severely limited by capacity constraints within the central kitchen (CONSDK1). Nursery food was provided by KOMDK1 (in nurseries where parents had voted for it) KOMDK5, KOMDK2 and KOMDK4. Food for the elderly was provided in all the kommuner except KOMDK1.

5.2.2b Levels of public spending

The volume of public catering activities was stable – except for KOMDK5 and KOMDK3 – where population growth was expected to require increased provision in future. The Danish government had required each kommune to reduce its annual spending by 2% per annum. However this had not worsened the quality of food in public catering (KOMDK5; CONSDK1a; CONSDK3b). Any decisions to provide a subsidy for the cost of childrens food were taken at local level. KOMDK3 subsidised the cost of school meals. In KOMDK1 parents paid the full cost of nursery meals and in KOMDK5 they paid for the full cost of nursery and school meals.

5.2.2c Food standards rarely compromised by outsourcing

CONSDK1 told us that in Denmark it is very unusual to have outside catering delivering food in nurseries, but common for meals on wheels to be outsourced. NGODK3 told us that in Denmark there is only one big meals on wheels provider. This is Dansk Madhus which produces good quality food and provides acceptable wages and working conditions. Its staff are organised by the catering trade union which also organises staff in local authority kitchens. CONSDK3 told us that there wasnt a huge amount of privatisation in Denmark.

Kommunes with right wing leadership will try to outsource to private companies if they can. Kitchens have been put out to tender but the existing teams are often very good at winning the tenders. In Denmark you don't want to save a lot of money if the food provided will be of poor quality. All the companies who are selling the food in Danish canteens – the general philosophy is don't go in with a very cheap tender because you wont be able to live up to it.

5.2.3 United Kingdom

5.2.3a Scale of public catering

Interviews provided details of school catering provision at anonymised UK local authorities. Unlike in Denmark or Sweden, there was very little public sector provision of catering in nurseries or elderly care. Research revealed a marked contrast in external political and economic pressures in England and Scotland.

5.2.3b England – spending cuts and outsourcing hitting food standards

Within England it was clear that local authority catering organisations faced an extremely adverse policy environment. The following account is based on interviews with COUNUK1, COUNUK3, COUNUK4, COUNUK5, COUNUK6, COUNUK8, COUNUK10, NGOUK1,NGOUK6 and NGOUK7.

There were massive overall spending cuts affecting all UK local authorities after 2010 – in the range of 30 to 40% of their previous budgets. School budgets were protected from cuts until the 2015 general election but were reduced thereafter. The payment per meal for Universal Infant Free Schools was fixed at £2.30 when these were introduced in September 2014 and this payment has not been updated to take account of inflation (NGOUK6; COUNUK1; COUNUK6).

Food standards in English schools have frequently been compromised by outsourcing. The government passed legislation in 2013 to give head teachers of each school the opportunity to withdraw from any service provided by the local authority – including catering. Increasing numbers of schools have become academies – totally independent of local authority control (see above 3.4.4). Local authority caterers have consequently faced a constant battle to retain schools – knowing that if their organisation shrinks below a certain level it will cease to be viable.

With six English local authorities there had been a substantial decline in the number of schools for which the local authority catering operation provided a service (COUNUK1; COUNUK4; COUNUK5; NGOUK7; COUNUK8; COUNUK10). Two council catering organisations were reported to have been more successful in holding on to most of the schools in their districts: NGOUK5;COUNUK7.

Private caterers competing with local authority catering organisations do not always offer inferior quality food. COUNUK10 – now defunct – told us that they intended to upgrade to FFL Silver to compete with a local caterer who was offering this to schools. But other local authorities interviewed have been faced by competition from private caterers who provided school meals at considerably lower cost. Private caterers accomplished this by reducing food quality and staff pay and conditions. Some schools have reduced costs by bringing catering inhouse but very often also at the expense of food quality. Local authorities have continued to comply with the 2015 school food standards but these are frequently ignored by both private caterers and inhouse school kitchens. Promises made in 2015 that Ofsted would monitor school food standards as part of its school inspection regime have not been kept.

5.2.3c Closure of local authority catering services

Two local authorities had dissolved their school catering organisations in previous years leaving it to individual schools to make their own arrangements – either employing their own cooks or hiring a contract caterer (NGO1b; COUNUK9). In both cases this had led to a collapse in school food standards. NGO1b described a worst case scenario – a local authority which shut down its central catering organisation over ten years ago and left over a hundred schools to their own devices.

The vast majority are inhouse operations. On their own and trying to make it work. Cooks working on their own in a single school may want to buy local. But they have very little buying power – no scale economies. By comparison a local authority catering organisation has big purchasing power for a large number of schools (NGO1b).

Cost pressures enforced compromises on food quality and animal welfare – such as abandoning free range eggs. In COUNUK9 the school catering organisation was

disbanded by the local authority in the 1980s. Schools were left to their own devices. Some provided a very limited meal service, mostly of poor quality.

More recent closures of meal services were mentioned affecting three large council catering organisations: Bath & North East Somerset, Cambridgeshire and Northamptonshire (NGOUK1a; COUNUK10).

Subsequent to the interviews with them, COUNUK10 dissolved its school catering organisation in April 2021 and COUNUK1 decided to close its school catering in September 2021.

5.2.3d Decline of Food For Life accreditation

FFL was still seen as the only generally accepted benchmark of quality in public sector catering (NGOUK6; COUNUK1; COUNUK2; COUNUK; COUNUK6). An NGO told us in March 2019 that the level of FFL accreditation had been largely stable but with some losses.

The situation is on a knife edge. It could go either way. From the end of Summer 2018 caterers became very risk averse – till they know the outcome of Brexit. We are not getting loads of caterers jumping ship. For the last 6-12 months we have been working on retaining rather than increasing the numbers with Food For Life Catering Mark. Very few caterers have dropped out. Really good news. We have spent a lot of time on renewing licenses. its not all gloomy. There are still councils joining” (NGOUK1a)

Surrey County Council which had been Gold for a long time had dropped out of FFL because of rising food prices. The Council did a customer survey of all schools. People were very interested in price and animal welfare but not interested in organic and sustainable food. It may rejoin FFL if things get better. On the other hand two large local authorities – Luton and Bradford - had now joined FFL at Bronze level (NGOUK1a).

One of the councils interviewed - COUNUK3b - had recently achieved FFL Gold. An officer commented

This is a big achievement in the current climate. We hope its here to stay ... There has been a commitment from a couple of very determined people to take it forward. They wanted Gold from the point where they started FFL accreditation.

This council told us that it was one of very few local authority catering organisations which had increased the number of schools for which they provided a catering service. It had done this by providing superior quality food even to academy schools which were no longer under local authority control

NGOUK5 mentioned that the city school catering organisation had dropped its FFL Gold accreditation because managers felt that this was an unnecessary bureaucratic burden. It continued to offer high quality school food.

5.23e Defending School Food Standards

CONSUK1 said that lack of parental awareness of national food standards and Food for Life was a major reason why caterers were able to reduce food quality in schools with very little opposition. Council catering organisations have tried to bolster demand for their services by building stronger organisational ties between the catering organisation and schools. NGOUK5 gives a case in point where the city school catering organisation had been handed over to an independent company which was jointly owned by the council and the schools it serves. Another approach was to work with parents and children at the schools to boost their awareness of healthy and sustainable food. Examples here are COUNUK3a, NGOUK7 and COUNUK7, where the local authority has sponsored school-based workers who aimed to raise awareness of healthy food among parents and children. This also promoted support for the council catering organisation.

5.2.3f Food for Life Gold in council catering, 2018-2021

Table A4.3 in Appendix 4 compares data from the Soil Association website for Food for Life Gold accreditation at its peak in January 2018 with data from October 2021. The January 2018 data is very detailed – stating the number of schools with FFL Gold,

Silver or Bronze in each of the fifteen councils as well as small numbers of nurseries and care homes. The October 2021 data from the Soil Association website is much less detailed. It does not give numbers of schools and shows the “highest level of FFL accreditation” in each council in October 2021.

The table shows a steep decline in Food for Life Gold in the fifteen councils. Four London councils which were previously Gold are now Silver: Barking & Dagenham, Thurrock, Tower Hamlets and Waltham Forest, while Greenwich Council has closed its catering arm GSplus. Oldham and Surrey have dropped out of Food for Life altogether. Cheshire East and Nottinghamshire have dropped from Gold to Silver. Derbyshire, Nottingham and Warwickshire are shown by the Soil Association website as having Gold as their highest level of accreditation. However council website information accessed in October 2021 showed that the great majority of schools in these three councils were Silver. It would appear that only three out of the fifteen councils still retain Food for Life Gold for all their schools – Leicestershire in England and North Ayrshire and East Ayrshire in Scotland.

Table A4.4 in shows a steep decline in Food for Life accreditations among the eleven private caterers delivering school meals for local authorities. Table A4.5 lists nine new caterers with FFL Gold accreditation but these are mostly small in size.

The above assessment was produced through analysis of web-based information. It was supported by an interview with NGOUK12 who pointed out that caterers are faced with increased costs for food and salaries and have difficulty increasing prices charged to parents. This is why so many of them are cutting costs by sacrificing organic food.

5.2.3g Scotland – more favourable policy environment

Scottish government policies have provided local authority school caterers with a much more favourable environment than in England. The following section is based on seven interviews : GOVTUK1a & b; COUNUK2; COUNUK11; NGOUK3; NGOUK9; NGOUK10:

- Almost all schools continue to have meals provided by the local authority catering organisations. There has been very little outsourcing.
- The Scottish government has enforced school nutritional standards as part of the school inspection regime provided by Education Scotland. Nutritional standards were tightened early in 2021 – requiring local authorities to reduce usage of processed meat in school meals and increase provision of vegetables.
- To promote better quality in public sector food the Scottish government provides funding for a team of ten people at Soil Association Scotland – encouraging local authorities to adopt Food for Life Served Here. The number of Councils with FFL accreditation has risen from 10 in March 2019 to 16 in 2021. Half of all Scottish Councils. Two Councils have FFL Gold - North Ayrshire and East Ayrshire. Stirling has Silver and the rest are Bronze.
- The recent decisions by the Scottish government to introduce free meals for all children in primary schools will inject more public money into school catering organisations

Some Scottish councils face very significant financial pressures and this has affected the quality of their school meals. COUNUK2 dropped out of FFL Bronze principally because it could make some small savings – for example by switching to caged eggs. The Council is considering returning to FFL. Concerns were expressed that the Scottish government may not provide adequate funding for councils to provide universal primary school meals.

5.2.3h Wales – less outsourcing of school meals provision

NGO10 in Scotland said that there were important similarities between Scotland and Wales regarding public food procurement policies. One interview was undertaken in Wales with NGO11. The Welsh government is contemplating the introduction of universal free primary school meals, which is presently being implemented in Scotland. Compared to England, there has been much less outsourcing of school meals provision.

Where private caterers do hold school food contracts in Wales, the standards are poor. There is one contractor I don't want to name who is coming into

Wales. It is very noisy about its sustainability credentials. But I hear bad things about the service it provides. What you hear from children and school staff is that the portions are too small and the children are hungry (NGO11).

Of twenty two local authorities in Wales, twenty have retained in-council school catering services. Primary schools have stayed with the local authority provision but many secondary schools use private caterers. Seventeen local authorities provide catering for most of their secondary schools. The Welsh government has a school food quality standard and is planning to update it. There is no external inspection of the quality of school food. Historically there has been little encouragement of the Food for Life approach in Wales, although NG010 is trying to promote it.

5.3 Organic food procurement

This section discusses for each country the trends in purchasing of organic food and the circumstances which affect them. This relates to Questions 4 and 5 in the Interview schedule (Table 19).

5.3.1 Sweden

5.3.1a Growth of organic food

The Swedish interviewees agreed that during recent years there had been very substantial growth in organic food usage in public kitchens. KOMSE3 told us that school canteens buy 75% organic food. They have a lower cost of lunch per student compared with most other kommuner in the region, including those with less organic food. This reflects a successful procurement process:

“We get very good prices for organic food....We have a big wholesaler contract [Martin & Servera.] We achieved 63% organic last year. The plan is for all food to be organic by 2020” (KOMSE3)

The catering manager at KOMSE4 expressed her pride at having almost reached an ambitious goal for organic food

Organic is a success. “I like organic. If I have a goal and politicians support it, I go for a goal”... I try to see - can we change the menu so we can reach the goal of 60% organic ingredients. We check the organic percentage every month. We are now at 59% organic. We have got to buy a little more organic” (KOMSE4)

KOMSE8 committed itself in 2018 to organic purchasing for 50% of all food and 100% of all meat purchases (KOMSE8a). KOMSE2 had 18% organic in 2013. They had adopted a target of 40% and they had now reached 43% (KOMSE2a).

5.3.1b Much organic food is imported

The catering manager from KOMSE1 highlighted that their policy is first to buy organic then buy Swedish – so they may go for imported organic rather than conventional Swedish. NGOSE3 also highlighted the large amount of organic fruit and vegetables which is imported because Sweden doesn’t produce enough except for potatoes. Sweden does produce meat, cheese and milk – both organic and conventional.

5.3.1c Less future growth in organic food

A narrow majority of informants thought that there would be less future growth of organic food. The September 2018 Swedish local elections brought about a change of political control in many Swedish communes. Electoral success of the Centre Party in the 2018 led several communes to reduce purchasing of organic food (NGOSE3)

At KOMSE3 the food procurement manager was concerned about the election. If a right-wing coalition displaced the ruling Social Democrat/Environment Party coalition she expected that it would sack a lot of the city’s staff and privatise services. It would bring in private catering companies and scrap the pro-organic policy. The ruling coalition managed however to cling on as a minority administration. At KOMSE8 the elections brought about a change of political control and this led to the removal from the annual budget of the percentage targets for procuring organic food. A Centre Party political adviser in KOMSE8 explained the reasoning behind this decision. Conventional Swedish food is of a high standard. For example, antibiotics usage in meat production is very restricted. There is not enough Swedish organic production to

meet the kommune's organic target. It is better to safeguard local agriculture by buying conventional Swedish meat rather than imported organic meat and to source the meat as nearby as possible (KOMSE8d). The four interviewees with a regional perspective expressed a similar view that the big push for organic of a couple of years ago had been replaced by a greater emphasis on other priorities. These were

- increasing purchases of local food (which could be defined as Swedish food)
- reducing food waste
- reducing meat usage
- reducing carbon emissions

5.3.1d Justifying opposition to organic food

The substantial level of imported organic meat is a most important argument. Little organic chicken or pigmeat is produced in Sweden and it is very expensive. If a kommune wants to provide these, this will require imports. Other organic foods which are imported are certain fruits and vegetables – such as apples. Organic beef, milk, eggs are generally available from within Sweden – as is a considerable proportion of vegetables (KOMSE1; KOMSE2; KOMSE4; KOMSE6; KOMSE7). The high environmental and animal welfare standards of conventional Swedish-produced food are frequently cited (KOMSE8d). A further argument is that because it is less productive, organic agriculture has a greater climate impact than conventional agriculture. This is based on certain academic studies (KOMSE8d; see 2.82 above).

5.3.1e Continuing support for organic food

One regional informant (REGNSE2b) noted that despite a change of political control at regional level she was pleasantly surprised that the new green-blue coalition had put in place a target for increasing organic food to 50% and ambitious targets for reducing climate impact. One of her colleagues – running a regional catering advice project – said that she still expected there would be an increase in organic food, even though there was increased pressure to buy local food instead.

In some kommuner the politicians are pushing for local food. The catering manager “may still try to bring in more organic even if the politicians doesn’t point it out as an important area” (REGNSE2a).

A third regional informant (REGNSE1) also expressed the belief that in the future there will be more organic food in Sweden. At KOMSE4 political support for organic has strengthened. Of the two senior politicians one was pro-organic and the other sceptical about organic and the latter individual has retired. However the catering manager foresaw that food market trends would make it more difficult to maintain the 60% level of organic food – higher food prices of Swedish food caused by drought and higher import prices resulting from the fall in the Swedish Kronor. The catering manager from the small rural kommun KOMSE7 had increased the percentage of organic food from 11% in 2017 to 22% in May 2019 “Next year the percentage of organic food will be much more.” (KOMSE7a). This kommun was about to adopt a target percentage for organic food. Due to savings from increasing vegetarian food, it expected to be able to increase organic food while staying within their budget. Other kommuner with a strong focus on sourcing food which was both organic and Swedish seemed least likely to change course on organic food. These included KOMSE1, KOMSE2, KOMSE5, KOMSE6, KOMSE13.

5.3.1f Shift from Krav to EU organic

Some kommuner are moving to buy organic food which meets the EU organic criteria, which are less demanding than KRAV (See above para 3.2.2.) KOMSE12 announced in January 2019 that it was doing this. NGOSE3 confirmed that this was a widespread development. In the six months January to June 2020 statistics on kommun’s consumption of organic food in value terms showed a 1.9% increase for all organic food. Swedish organic food increased by 0.9%, showing that the proportion of imports rose slightly. However there was a 0.3% fall for KRAV-certified food.

5.3.1g Statistics on organic food consumption in public kitchens

Praise was expressed for the role played by the Ekomatcentrum in collating statistics about organic food consumption in public kitchens, broken down by kommun and

regional authorities (REGNSE1; KOMSE4) One interviewee however pointed out that the Ekomatcentrum's figures only gave the **percentage** of organic food. In 2018 these showed Vellinge at the top of the national organic league table at 80%. However this league table did not take account of the **volume** of organic food being purchased – where Vellinge would rate rather low because the kommune had outsourced most school kitchens. It was also pointed out that the definition of Sveko [Swedish organic] would include imported products like coffee which had final stage of processing in Sweden (KOMSE3).

5.3.1h Latest statistics – August 2021 - show 1% fall in organic food in public kitchens to 38% (Ekomatcentrum, 2021, p 4)



Fig 11 Organic food in the public sector 2003-2020

Fig 18 shows that the first reduction in Swedish public sector organic food usage took place during 2020 after fifteen years of growth since 2003 (Fig 18). The August 2021 Ekomatcentrum newsletter also showed that the number of kommuner with targets for organic food had fallen steeply – from 88% to 67% (Fig 19). This reflected growing emphasis on sourcing Swedish food rather than imported organic, which also explained the reduction in the percentage of kommuner with targets for organic food.

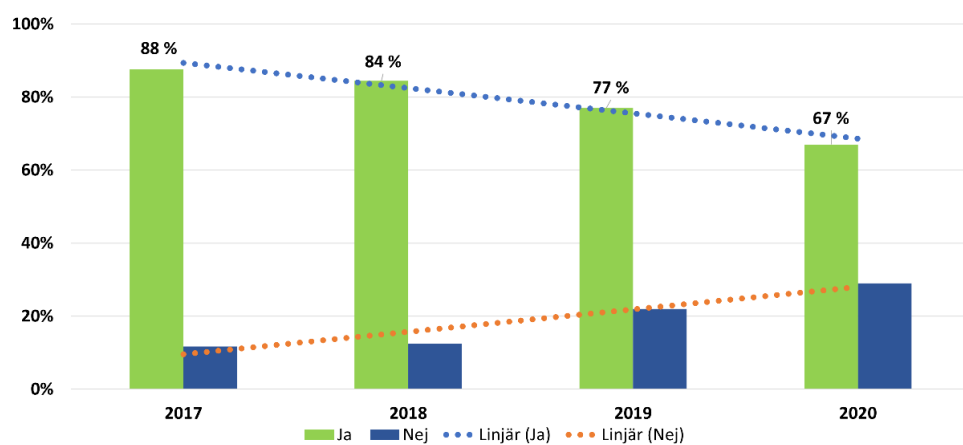


Fig 12 Percentage of kommuner with targets for organic food (Ekomatcentrum, 2021, p. 23)

5.3.2 Denmark

5.3.2a Continued increase in organic food

The overall response from the Danish interviewees showed that consumption of organic food by public kitchens continued to grow in Denmark and this was likely to continue in the future. Stress was placed on the environmental necessity of organic food in Denmark to prevent water pollution

The Organic Action Plan came about in 2012 because we were on a burning platform – acute problems with groundwater contamination by fertilizers and pesticides. A few kommuner have talked about reducing or eliminating organic food to save money. But they are isolated examples. There has been no general cut back as regards organic food in kommuner (NGODK3)

Organic food was becoming more affordable and available. The organic market in Denmark had been developed by public kitchens. The organic supply side was getting better. Danish organic chicken was widely available. There was still occasional lack of availability of fresh meat and vegetables. The organic share of the total food market was 10-11%. There used to be a big price premium and poor quality. Quality has improved and increased production has meant a drastic decline in the price premium for organic food (CONSDK1a). There was renewed interest in the health benefits of organic food – a new study has shown that non-organic food can damage the human genome (CONSDK1b). Fig 20 below shows that the number of Danish kitchens with the Speisemark rose further during 2020.

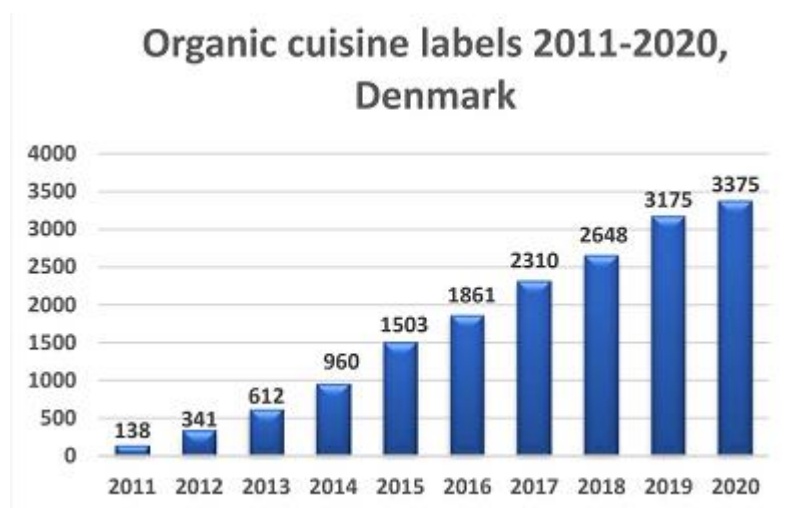


Fig 13 Increase in numbers of Danish kitchens with Speisemark (2011-2020) (Holmbeck, 2020)

The latest Danish official statistics for organic food in the public sector are for the year 2020. They show that sales fell very substantially in public sector kitchens due to the pandemic but the organic percentage increased from 20.8% to 22.8% (Table 26).

Table 26 Organic food in Danish public sector, 2018-2020 (Danmarks Statistik, 2018; 2019; 2020)

	<u>2018</u>	<u>2019</u>	<u>2020</u>
PUBLIC INSTITUTIONS			DKK million
Total food spend	4032	4050	2907
Organic	827	929	827
Organic as % total	20.51	22.94	28.45
CANTEENS IN PUBLIC WORKPLACES			
Total food spend	705	640	661
Organic	157	140	136
Organic as % total	22.3	21.9	20.6
TOTAL PUBLIC SECTOR			
Total Food Spend	4737	4690	3568.00
Organic	984	1069	963.00
Organic as % total	20.8	22.8	26.99

5.3.2b Organic percentage - measured by weight or by value?

CONSDK3 is a consultant working to promote organic food in a number of Danish kommuner and regions. This interviewee provided figures which illustrated the practical implications of the possible two ways of calculating the percentage of organic food in a kitchen – by weight or by monetary value. She had worked out that in a typical elderly care facility the difference between the two ways of measurement was as shown in the following table:

Table 27 Elderly Care - Organic % by kg and Danish Kroner

Product	% of food purchased in kg	% of food purchased in Danish Kroner
Milk & yogurt	25%	10%
Bread, flour, groats, rice, pasta	12%	7%
Vegetables, fresh, frozen, pickled	12%	7%
Fruit &, jam	7%	6%
potatoes	10%	4%
Meat, fish, cold cuts	15%	40%
Oil, butter, fat	3%	4%
Cheese	4%	7%
Egg	2%	2%
Juice, soft drinks, beer, wine, spirits	6%	4%
Coffee, tea	1%	3%
Colonial products (sauces,flavourings; delicatessan)	3%	6%
	100%	100%

Therefore if all food was organic apart from meat, fish and cold cuts then by weight the organic percentage would be 85% but by value it would be 60%. The same interviewee also provided calculations for a typical nursery and workplace canteen. In a nursery there was much less meat. If all nursery food was organic other than meat this would mean an organic percentage of 96% by weight and 84% by value. In a canteen if all food other than meat was organic, the organic percentage would be 78% by weight and 49% by value (CONSDK3a).

This shows that Danish statistics relating to the percentage of organic food in a particular local authority but based on weight are not comparable to those of other countries where organic food consumption is measured by value. Interviews with four Danish kommunes (KOMDK1; KOMDK2; KOMDK3; KOMDK5) confirmed that organic food was measured by weight.

5.3.2c Organic percentage - Self reporting or external validation

KOMDK5 told us that they had recently switched from kitchens self reporting their organic percentage to figures which were validated by the supplier Hørkram, and more accurate. KOMDK3 has also recently made this change and this has meant a small (2%) downward adjustment in the organic percentage – which is still above 80%.

5.3.2d Organic and climate friendly food

Promoting climate-friendly food was seen by interviewees as the main emphasis of future policy. But this was not seen as likely to lead to abandonment of organic food.

I am a bit worried that after 2020 there will be no Organic Action Plan in place. We expect that there will be a climate action plan in future – which will include the public kitchens. The primary aim will be to reduce carbon footprint – but there will still be encouragement of organic food in accordance with the sustainable development goals.(NGODK3).

A sustainability officer at KOMDK2 said

This is the most important thing in my career – organic conversion and reducing carbon footprint of our public kitchens. Starting in 2013 the Kommune has increased the percentage of organic food in its kitchens to 66 per cent with a

slight decrease in its budget. We employed an organic catering consultant to help us...We expect by 2020 to have got to 100% organic food" (KOMDK2)

5.3.2e Organic food a long term priority... not a target for cost-cutting

All Kommunes were required by the national government to reduce their spending by 2 per cent every year. A sustainability officer explained that increasing organic food was a long term political priority for the Kommune – going back to the 1990s and not affected by budget cuts. "The goals are 90 per cent organic for kids by 2020 and 75% for adults by 2020" (KOMDK5). A catering consultant described how she was employed to ensure that a hospital kitchen could retain organic certification, even though its budget was being reduced by 25 per cent (CONSDK3a).

5.3.2f Debates over organic food

A civil servant judged that

Copenhagen is very unlikely to cut the organic food to save money. Some right wing politicians may call for money to be saved by replacing organic by conventional food. We are not seeing any backtracking on organic at the moment. No Nordic government has pushed to eat less organic...The Speisemark organic cuisine label has been going for ten years now in Denmark. The numbers are still growing – maybe not as fast as before. It has been unexpectedly successful. (GOVTDK1a)

An organic catering consultant observed in May 2019 that

National elections are expected shortly. Within the agricultural industry there are some people who oppose the organic choice. We argue that organic is very much in the interests of the agricultural industry. Organic is much more labour intensive. Organic farmers are likely to get a better price for their produce. Denmark is able to export its organic food to many countries around the world (CONSDK1a).

5.3.2g Closure of Copenhagen House of Food – December 2019

The Copenhagen House of Food shut down in December 2019. With large city premises and many staff, it had become over-dependent on short term project funding. The City of Copenhagen continues to employ an alternative contractor, Meyers, to promote organic food in the city's kitchens. Some staff within the City felt that while

the House of Food had done good work in the past it was no longer important for the future of organic food. Some ex-employees have continued to work as consultants promoting organic food in public kitchens in both Denmark and Germany (KOMDK3b; CONSDK1b).

5.3.2h Some kommuner buy little or no organic food

KOMDK6 buys little if any organic food for its public kitchens. The level of organic food grown within this kommune is well below the national average. There is political support for buying local food which is almost all from conventional farmers

5.3.2i Latest developments February 2020 – March 2021

Brandt (2020) reports on a large-scale survey by Retail Institute Scandinavia of 281 public kitchens carried out in February 2020 which showed 62 per cent of kitchen managers intended to increase usage of organic food. Concerns were expressed during 2020 that the newly elected government was not so supportive of organic food as the previous Social Democrat led government - placing stress instead on combatting climate change (CONSDK1b; WRIT3). One environmental NGO argued that promotion of organic food was not best for climate change because with organic agriculture more land would be needed to produce the same amount of food and carbon emissions could rise (NGODK4). In March 2021 however the government created a new budget of 40 million kroner (5,4 million Euros) for training and consultancy to further develop organic and climate friendly food in public kitchens. This was seen as an emphatic government vote of confidence in organic food. It was consistent with a new EU policy emphasis on promoting organic food in public kitchens (see Introduction 1.1.2 above) It was anticipated that this would influence those kommuner which up till now had little organic food (CONSDK3b).

5.3.3 United Kingdom

5.3.3a Usage of organic food declining in England

Organic food in UK local authority public catering was very much linked to FFL accreditation. FFL Silver requires 5% organic and Gold 15% (see above 2.20.2; 3.4.7). This is a very low level of organic food compared to communes in Sweden or Denmark. Of the English councils interviewed, there was one which had recently achieved FFL Gold. It had put great pressure on suppliers to obtain organic food with a minimal price increase. This council had also tried to localise supply as much as possible. It had done a deal with a Community Supported Agriculture farm with six acres of land producing a wide variety of organic fruit and veg (COUNCILUK3b). Interviews also mentioned two council catering services which were successful in maintaining FFL Silver accreditation (COUNUK7; NGOUK1b).

However the overall picture given by interviews with English councils was that usage of organic food was declining from an already low level. The underlying reasons for low levels of organic food were crippling financial and competitive pressures on English councils - see above 5.2.3b-5.2.3f. Five Councils said that they did not buy organic food. Two said that they had experimented with a FFL Silver menu but it was too costly (COUNUK5; COUNUK8). Another had unsuccessfully experimented with organic and local food in a single school (COUNUK1). COUNUK4 did not buy organic food because of cost and knew of a local hospital which had cancelled a longstanding contract for local organic milk purely to cut costs. COUNUK2 stressed that there was no organic food produced within the borough and very little within the surrounding region

5.3.3b Reductions in organic spend under Food for Life

Paragraph 5.2.3f above discusses the decline in Food for Life Gold accreditation in council catering between 2018 and 2021, which implies a reduction in spending on organic food.

The Soil Association has reported very substantial reductions in organic spend under the Food for Life scheme. Fig 21 shows the figures released by the Soil Association in February 2021 which show that during the financial year ending 31 March 2020 organic spend in food service fell by 23.2% in food service and by 11% for Food for Life spend. There was thus a substantial fall in the twelve months prior to the pandemic. While the Soil Association possesses figures for overall ingredients spend in caterers accredited by the Food for Life scheme, it does not disclose these in its reports and therefore the percentage of organic food within total FFL food purchases is not known.

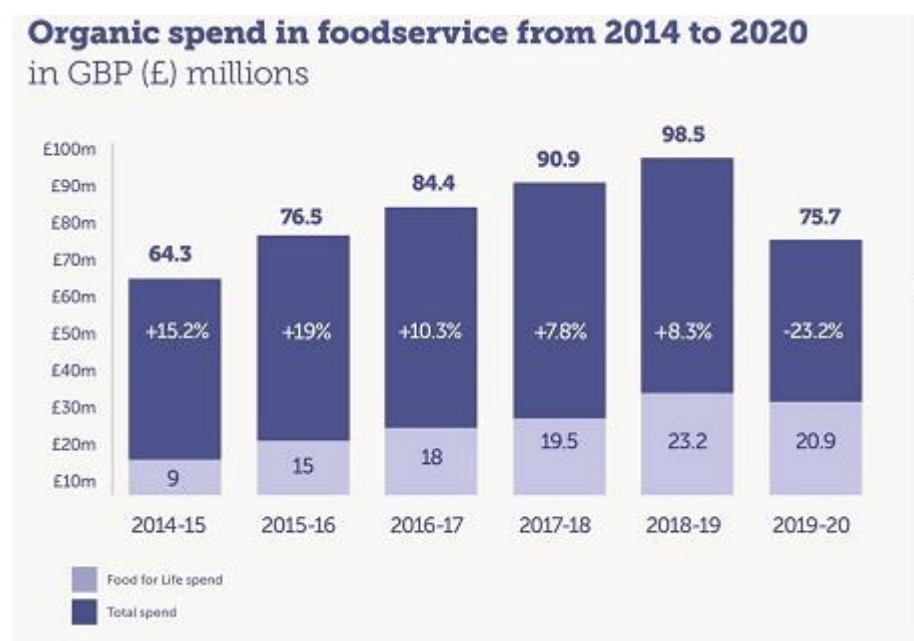


Fig 14 United Kingdom: reduction in organic food in food service and Food for Life caterers (Soil Association, 2021b)

The October 2021 Soil Association report on Food for Life stated that annual spend on organic ingredients from sites serving a Silver or Gold menu was £12,480,867 during the year from 1st June 2020 to 31 May 2021. The Soil Association chose this period because schools were closed due to the pandemic during April and May 2020 and consequently no food was bought. This figure is 53.9% down on the £23.2m spent in 2018/2019 (Soil Association, 2021c).

5.3.3c Plans to increase organic agriculture in Scotland

While the Scottish Government has tried to encourage organic agriculture much more than in England, organic food production in Scotland is presently low. Only two of thirty two Scottish Councils have achieved FFL Gold. These are East and North Ayrshire which have a long history of sustainable food initiatives, pushing for both organic and local procurement (NGOUK9; NGOUK10; COUNUK2). COUNUK11 said that her council has urged the Soil Association to revise the FFL standard so that Councils can achieve FFL Silver and Gold without needing 5 and 15% organic food. Her Council presently pays a local dairy 38p a litre for milk. Milk from the central Scottish local authority contract costs 19p per litre but she prefers to support a local supplier because the council business may be keeping that dairy alive. She could buy organic milk from South West England for 19p per litre. The Summer 2021 cooperation agreement between the Scottish Government and Green Party envisages a new Organic Food and Farming Action Plan aiming at least to double the area of organic farmland by the end of 2026 (NGOUK10). This will encourage more organic food in public catering.

5.4 Local, regional and national procurement

This section discusses initiatives taken by public kitchens to source local food. The definition of local food used by local authorities varied. It could relate to food from the immediate local area or the surrounding region or the whole country. This relates to Questions 4 and 5 in the Interview Schedule (Table 19). This section includes the extent to which municipalities try to make contact with local suppliers who can provide requirements at an acceptable price. This may include seminars to explain public procurement to potential suppliers, formal “Meet the Buyer” sessions and informal supplier contact. This relates to Question 6 in the Interview Schedule (Table 19).

5.4.1 Sweden

5.4.1a Larger kommuner – focus on organic and Swedish food but substantial imports

The volumes of organic food being sought by larger kommuner – cities – is such that local organic food can be difficult to obtain. There is an attempt to source Swedish organic food – particularly beef, milk and eggs. Pigmeat and chicken are likely to be conventional and sourced from Swedish suppliers. It is possible that some organic chicken may be imported. A high proportion of fruit and vegetables will be organic and these will be Swedish if available, otherwise imported (KOMSE2; KOMSE3; KOMSE5; KOMSE8a; KOMSE8e).

Two of these cities had also made efforts to source small volumes of food within the city boundaries – including vegetables and meat (KOMSE5; KOMSE8a). KOMSE3 on the other hand said they would like to try harder to offer opportunities to smaller local suppliers but that there was no political will to source food locally.

5.4.1b Local conventional food & organic food from elsewhere

Another possible approach was for a kommune to buy a large amount of food from a narrowly defined local area. In the case of KOMSE10 this was from within a 15 km radius and the farmers it bought from produced conventional food. This kommune also had a target of buying 40 per cent organic food – and it fulfilled this from Swedish organic producers and from imports.

5.4.1c Local procurement with a large organic percentage

Some smaller kommunes had a strong emphasis on buying organic and local food. KOMSE7 told us that they bought local and organic beef and vegetables. KOMSE6 described how they have two contracts with local farmers. One was with two young brothers who had set up new organic farm producing organic strawberries, carrots and cucumbers. Another was with a local apple farm

It is an old farm, established a century ago.. The way of growing is unique in the world. The fields are fertilised by the cows. The trees are shaped so that the cows cannot eat the apples. .They are nice apples and we get them at a good price. It is good business for the farmer and for us (KOMSE6).

Other local vegetables bought by KOMSE6 were from conventional farmers

5.4.1d Kommune prioritising local, non-organic food

KOMSE9 was focussed on procuring food as much as possible from local farmers. It had been in a procurement arrangement with two neighbouring kommunes but decided to go it alone because the other two organisations wanted to buy more organic whereas this kommune was focussed on buying locally and almost entirely from conventional farmers. KOMSE9 bought 8% organic food – a very small amount by Swedish standards.

5.4.1e Use of direct procurement

Interviews showed that Swedish kommuner made extensive use of direct procurement. That is purchasing of goods without a tender which is permitted by EU procurement regulations for purchases below a specified monetary value. In Sweden the threshold is 615,312 SEK (equivalent to £54,000). This was referred to by KOMSE5, KOMSE6, KOMSE7, KOMSE9, KOMSE10, KOMSE19 and REGNSE2

In our region vegetables are available from May to October – including use of polytunnels. Purchasers may do a deal directly with the farmer – not going above the direct procurement threshold. They may buy directly from the farmer during the Swedish season and source from a wholesaler for the rest of the year (REGNSE2).

KOMSE10 said that direct procurement was not used to its full potential. Many kommuner do not have the extra staff resource required to purchase in this way – particularly the smaller kommuner.

5.4.1f Outreach to local suppliers

Two regional projects were interviewed which helped kommuner to engage with local food producers and source local food. REGNSE2 said:

I try to get a good deal for both the producer and the buyer....I sit in the farm kitchen and help the farmers to answer the tender questionnaire. This is written in a different language from the language of the farmer....I organise a day meeting for the kommuner twice a year. The aim is get the purchasers to meet the farmers – to talk about how they can do business. Purchasers are very happy to meet the farmers. Last time the meeting was about vegetables – many of which such as tomatoes or cucumbers are only available in Sweden in the Summer (REGNSE2).

REGNSE3 told us of the early food procurement dialogue which they had conducted in early 2017 – promoting conversations between small and medium sized food producers in the region and the catering and procurement managers for the seven kommuner within the region. Procurement was subdivided into small groups of products to encourage response from smaller producers. With fruit and vegetables they were mainly seeking organic produce (REGNSE3). KOMSE9 told us that within the kommune

We have many local producers but they are a little bit worried about delivering to the municipality. “We are too small”...We need to have a dialogue with the small food suppliers. They can meet our requirements but they don’t know they are able to do it.

KOMSE13 said that the kommune had ten suppliers of food for the public kitchens. The smallest suppliers were one small farmer who supplied potatoes and another who supplied eggs. The kommune has set up a new e-procurement system which makes it possible for the kitchens to do one big order and the food request was then passed to the appropriate supplier. The kommune provided some smaller suppliers with web pages which could receive orders from the e-procurement system. When the farmer delivers the food, they then click on the web page to send an electronic invoice to the kommune. KOMSE10 told us that they worked within a 15 km radius of the town centre.

We talk to about twenty five local companies who can provide food. We obtain potatoes, tomatoes and fresh meat from local farmers. The farmers organisation LRF have been very helpful. We have an ongoing discussion with them on how to reach out to the small farmers and let them know that the kommune would like to buy their food. We arrange the tender to suit the supplier. So we may ask them to supply enough food for twenty kitchens – rather than the whole 200 kitchens in the Kommune

KOMSE5 and KOMSE13 also described how intensive dialogue with local suppliers had helped them promote local sourcing. See also above re engagement with small suppliers by KOMSE6 and KOMSE7 (5.4.1c).

5.4.1g Obstacles to buying locally

Interviews made repeated reference to the difficulties which kommuner encountered in obtaining suitable local food suppliers. REGNSE3 said that the region had awarded the vegetable supply contract for its seven kommuner to a locally based wholesaler. But this had now been taken over by a national company and the local base was about to close

They have agreed to buy from certain small suppliers – carrots from this farm, potatoes from that farm. It is a question of trust and good relations. If they close their base within our county then getting the veg from local suppliers becomes more difficult. I will try and sort this problem.

REGNSE3 also had difficulty with finding a supplier of organic milk within the region. The dominant role of the multinational milk company Arla is squeezing smaller local suppliers.

.We had a milk contract with a smaller company in the next region but Arla bought the company and shut it down We are trying to find a new milk supplier in our county. We have identified a possible new supplier but there are technical problems – whether the supplier can provide milk in bigger packaging – at least 10 litre bottles.

KOMSE6 mentioned that sourcing meat locally was made more difficult because there are very few local butchers – two they have access to. They have also used meat from mobile slaughterhouses which go round to farms. REGNSE2 noted the difficulties caused by the demise of smaller abbatoirs in the region. If a kommune wants to buy from a specific farmer then the smaller abbatoirs can facilitate this whereas the three large regional abbatoirs are not able to supply meat from specific farms.

5.4.1h Kommunes with coordinated distribution arrangements may still have difficulty sourcing locally

KOMSE10 told us that local food supply had not come as far as they would want.

KOMSE11 said that

We want more local food. But small companies find it very difficult to offer the same prices as big suppliers...Meat – we do buy locally from several companies .who provide beef, pigmeat and chicken. Milk we buy from a national supplier, Menigo, who charges a very low price and offers a lot of choice. We also buy fruit and vegetables from Menigo. There was a local company supplying us before but they lost the contract because they were more expensive

KOMSE12 told us that local food in public kitchens has not been encouraged by coordinated distribution as much as they had hoped. Local producers were unenthusiastic about municipal contracts. They struggled with the kommune's procurement system. Prices offered are too low and contract times too short. Local producers have to be educated as to how to respond to bidding opportunities. Kommunes have to avoid making too many demands of local suppliers. They should not expect too high a volume or too many products.

5.4.1i Use of Share Farming (*andeljordbruk*)

Two kommuner are involved in small scale share farming arrangements (KOMSE5 and KOMSE6). These arrangements meant that the kommune became a shareholder in two local farms whereby the farms would provide a share of the vegetable harvest.

5.4.1j E-commerce & Dynamic Food Procurement (DFP)

KOMSE13 described the new e-commerce software which they had introduced and how successful it had been in sourcing food from local suppliers. KOMSE13 had a long history of outreach to local food producers. Back in 1999 they tried and failed to introduce e-commerce software aimed at attracting small suppliers and had to revert to a paper-based system. Their current software was introduced in 2011. There are eight food suppliers. The smallest are two farmers – one supplies eggs, the other supplies potatoes. Each supplier sends in a price list. The kitchen can search the e-procurement site for all the items they need and put them into the basket. The system – makes it possible for the kitchen to do one big order and the food request is then passed on to each supplier. Food is delivered through coordinated distribution. Small suppliers are provided with a website whereby they can report that they have made a delivery and send an invoice, which can be approved electronically. KOMSE13 said that of the five other kommuner in its coordinated distribution arrangement, only one had the same software. Two other forms of e-commerce software were used by the others.

Only one interviewee (KOMSE6) referred to DFP – saying that they were interested in exploring its use. Recent press reports show that DFP has been adopted by two groups of small Swedish kommuner. Tierp, Heby, Östhammar and Knivsta together have a population of 76,000. Tierp plans to increase the proportion of locally produced food to 50 per cent by 2030 (Mårtensson,2020b). Kramfors, Sollefteå and Ånge together have a population of 46,000. Previous attempts to encourage local suppliers have proved largely unsuccessful – only attracting offers of potatoes. They

hope that DFP will enable them to buy local beef, lamb, pork and root vegetables. Contracts may include study visits by school children to the farms – which will be a way of encouraging local suppliers (Mårtensson, 2021)

5.4.2 Denmark

5.4.2a Strong emphasis on purchasing Danish food through national procurement contract

The national food procurement contract 50:90 provides both conventional and organic food, most of which is produced in Denmark (see 3.3.17 above). Two of the smaller kommuner (KOMDK2; KOMDK5) depend entirely on the national contract for their food requirements. They have no local food suppliers. Hørkram – the company holding the national contract – was praised for providing both organic and conventional foods, with reasonable prices, excellent quality and reliable deliveries (CONSDK1). Copenhagen continues to rely on the national contract. The proposed issue of its separate food procurement tender has not yet taken place (KOMDK3b).

5.4.2b Copenhagen – outreach to local food producers

The Food Fellowship (Madfællesskab) was launched in 2015. Copenhagen's aspiration was to develop Danish production to supply the city with organic food - developing links initially to three agricultural kommuner : Lolland Bornholm and Lejre. Madfællesskab was run by the Copenhagen House of Food, which closed in December 2019. It is now carried on by a small non-profit organisation, the Food Organisation of Denmark. The focus is on assisting local food producers throughout Denmark to find new markets with both public sector procurement and the private sector (CONSDK2; CONSDK4b).

5.4.2c Outside national contract – delegating to individual kitchens

KOMDK4 decided in 2016 to opt out of the national food contract. It told managers of all kitchens within the kommune to make their own arrangements for buying food – in the hope that this would create opportunities for local food producers. KOMDK4 also had a strong commitment to organic agriculture (DK10). However by September 2020 the kommune told us that efforts to promote local purchasing by these kitchens had been crippled by the difficulty in organising the distribution of small quantities of food by small food producers to local kitchens. Many of those kitchens – particularly the larger ones - were now purchasing through the national contract (KOMDK4b).

5.4.2d Outside national contract – direct local purchasing

KOMDK1 buy as much food as possible from local suppliers for thirty day care centres for 2,200 children plus the town hall canteen and a hostel. Various fruit and vegetables were available locally. They were grown conventionally and very high quality because so fresh – produce being used the day after it was picked. Organic eggs and flour were also bought locally. The kommune bought 100% organic milk, cheese and butter from national wholesalers. KOMDK1 did all food spending using direct procurement – the provision which permits public authorities to avoid a tender if they are buying amounts below the EU threshold. Asked whether they thought this use of direct procurement was within the law, they responded that they were quite surprised they have not been sued.

5.4.2e Buying conventional food - some local supply

KOMD6 only wanted to buy conventional food and had a strong desire to buy locally. They participated in the national food contract except for fruit and vegetables – where they opted out with a view to sourcing these locally. This was linked to a wider strategy of helping local food producers develop their sales to new markets also in the private

sector. The logistics of food deliveries to the kommune's kitchens was however a major problem (see below - logistics).

5.4.2f Difficulties sourcing local food

of the KOMD6 referred to an inability to source local milk and yogurt due to the increasing concentration dairy industry. .

"Arla is a very big strong company. It eats the small suppliers". There are two other large dairy suppliers – Nature Maelk and Thise. These are smaller than Arla and only supply organic."

5.4.2g Dynamic food procurement

None of the interviewees referred to this. A google search identified one Danish kommune which had made use of this – the City of Aarhus for delivery of prepared lunches for children in nurseries (Aarhus, 2019b). The national procurement organisation SKI has offered dynamic procurement since for purchasing of several forms of equipment. It has decided however that it is not appropriate for food purchasing due to excessive transaction costs (SKI, 2021).

5.4.3 United Kingdom

5.4.3a Councils currently sourcing local/regional food

There were two councils where substantial amounts of food were being produced within the district but which also relied on the surrounding region. NGOUK5 said that the city catering organisation in their area – in southern England – had a strong emphasis on sourcing food from the region – obtaining 95 per cent of food within a twenty five mile radius of the city – meat, fish, dairy and vegetables. COUNUK3 said that the catering manager wanted to localise suppliers as much as possible. This is a rural county in the English Midlands where agriculture focusses on cattle, sheep, grain and oilseed rape. Few vegetables are grown but these can be sourced from the next

county. Fruit and vegetables for three schools is sourced from a community garden nearby, which also provides educational opportunities for these children.

With five councils in northern England a high percentage of school food was being produced regionally. In three cases the councils relied on a large regional wholesaler which sourced fruit and vegetables from within the region whenever they were seasonally available and imported these when no UK produce was available (COUNUK1; COUNUK5; COUNUK6). COUNUK7 told us that little food was grown within the city but a lot of food was sourced from the adjoining agricultural region. At COUNUK8 the local authority had put a map onto its website showing the location of its food suppliers around the surrounding region.

At COUNUK11 in Scotland the catering manager said that she worked extensively with local suppliers. She relied on the national contract for much of the food but whenever possible she sought to buy from a local supplier – meat, milk, cheese, eggs and bread. This is a large, thinly-populated rural local authority including several islands. She was willing to divide procurement into very small lots when appropriate. She awarded separate meat contracts for two islands with populations of only 3,000 and 7,000. Logistics and distribution is a big issue over this large area. She had awarded a cheese contract to an excellent local supplier and arranged with the fruit and vegetable supplier that they would also distribute the cheese. (Unfortunately the cheese supplier had since closed.) She has done some direct procurement when starting to use small suppliers. She has then encouraged them to submit a tender for a larger quantity. She has worked with local business advice agencies to upskill smaller suppliers to enable them to submit a tender. She pointed out that she was lucky that there were a substantial number of food producers in her municipal area – unlike some other Scottish councils. She pays a local dairy 38 p for a 189 ml bottle of milk whereas milk from the central local authority contract costs 19 p for the same portion size. She is willing to pay extra because it is important to support local food producers. “How will feed future generations if we have no food production in Scotland?” She was concerned that there was only a single abattoir remaining in her district – which made it more difficult to source local meat. She argued that extra

business for Scottish food suppliers would be one great benefit of the extension of free school meals to all Scottish children.

Of the above councils COUNUK3 had FFL Gold and COUNUK7 had Silver. As part of this accreditation they reported to the Soil Association on the percentage of regional food purchased. COUNUK1; COUNUK5; COUNUK6 COUNUK8 all had FFL Bronze accreditation and were encouraged to promote awareness of local food sourcing – without needing to report precise figures.

5.4.3b Difficulties sourcing local food

With two councils in the north of England interviewees said that little food was being sourced locally or regionally (NGOUK7 and COUNUK4). COUNUK4 however was in contact with a regional organisation which was eager to develop local food production. With two councils in Scotland interviewees said that little or no food was being sourced locally (COUNUK1; NGOUK3). Like all Scottish local authorities they were using a national food contract which sourced some food from within Scotland when this was available. With one of these councils there were aspirations to increase local and regional food sourcing (NGOUK3). Referring to Greater Manchester CONSUK1 said that small local vegetable growers had difficulty selling to public sector kitchens due to their lack of vegetable washing equipment.

5.4.3c Dynamic Food Procurement (DFP)

This project was led by Crown Commercial Services, which is a UK government procurement agency, linked to the Cabinet Office. Launch of the regional pilot project in South West England was then expected in the first half of 2022 (Participant Observation PO10-PO14). The software used was expected to have the potential to enable small local food producers to obtain access to public food procurement opportunities – see para 3.4.23 above describing DFP in Bath & North East Somerset, 2016-2018. If the regional pilot was successful, it was then expected to be rolled out as a national procurement arrangement with all government departments and the

wider public sector encouraged to participate. It was envisaged that a national contract would be awarded for creation of a software platform and that regional contracts would be awarded to logistics providers who would provide transport for food purchased through DFP. (For implications for scale of procurement see below 5.5.3c. For the logistical dimension see below 5.6.2c).

5.5 Scale of Food Procurement

This section considers the extent to which food procurement for public kitchens is centralised or de-centralised. At one extreme food procurement may be carried out through a national contract or a very large-scale regional or multi-regional contract.. On the other hand it may be de-centralised – carried out by a small local authority with a population of a few thousand people or even by a single school. This relates to question 2 in the Interview Schedule (Table 19). Large food contracts may be subdivided in some way. When the tender is issued it may be divided into lots – by either area or product. This question was addressed in question 7 in the interview schedule (Table 19).

5.5.1 Sweden

5.5.1a De-centralised procurement

Food procurement in Sweden is de-centralised. There were three larger communes which carried out food procurement independently of other communes. Populations ranged between 100,000 and 400,000. Ten of the communes interviewed were part of procurement consortia ranging between ten and two communes. One consortium was much larger than the others – led by KOMSE8 it included ten others and a total population of 900,000. Seven consortia ranged between 170,000 and 197,000 in population. The smallest consortium of only two communes had a total population of 40,000. KOMSE9 with a population of 13,000 had decided to do its own food

procurement even though it was part of a coordinated distribution partnership with two neighbouring kommuner – with a total population of 50,000.

Table 28 Sweden – procurement consortia

Kommune interviewed	Other Kommunes (consortia)	Total population
KOMSE8	10	900,000
KOMSE1 & KOMSE6	7	197,000
KOMSE4	5	190,000
KOMSE14	5	189,085
KOMSE11	4	187,000
KOMSE5	6	185,000
KOMSE13	6	170,000
KOMSE10	5	170,000
KOMSE7	1	40,000

5.5.1b Use of lotting in public tenders

There were two references to the division of tenders into lots. In KOMSE1 – in a successful attempt to attract a local supplier - a separate tender was awarded for the purchase of eggs – amounting to the comparatively small amount of 6.6m SEK. KOMSE1 has a population of 93,000 but to make the tender even more attractive to small suppliers this tender was subdivided into sub-municipalities. KOMSE13 was part of a consortium of six kommuner where fruit and vegetable procurement was extensively segmented by product lots with a view to attracting local suppliers (REGNSE3).

5.5.2 Denmark

In November 2016 the government procurement agency SKI awarded a national public food contract to the large Danish food wholesaler, Hørkram. There had been considerable political pressure on kommuner which had previously had their own procurement arrangements to join in the tender (CONSDK1). Kommunes were however permitted to opt out of the national contract for specific product categories if

they wanted to to buy from local suppliers (KOMDK5). Hørkram was praised by four communes we interviewed who relied on the national contract for their food supplies. It provided a reliable supply of high quality food – both conventional and organic – at very reasonable prices (CONSDK1; KOMDK2; KOMDK5; KOMDK6). A number of communes however chose to remain outside the national tender. Two of these communes were interviewed, who both focussed their procurement policies on supporting local food suppliers. One was KOMDK1 which procured for the whole commune through a number of small contracts for different products – which all fell below the size threshold which permitted direct procurement. The other was KOMDK4 which told us in May 2019 that it had asked all its schools, nurseries and elderly establishments to each make their own arrangements. In Nov 2020 it told us that many of these kitchens were now using the national contract to buy food. See above 5.4.2(c). KOMDK6 told us that it relied on the national contract for provision of all food except for fruit and vegetables – where it opted to go outside the contract to try to buy from local suppliers. KOMDK3’ had decided in principle to withdraw from the national contract. SKI was said to be very upset about this decision (CONSDK1a). However the latest information (April 2020) was that KOMDK3 had not yet issued its own food tender due to staffing constraints (KOMDK3a).

5.5.3 United Kingdom

5.5.3a Large-scale and centralised

Food procurement arrangements in the UK are in most cases relatively large-scale and centralised. This reflects the large size of local authorities and the prevalence of large-scale procurement consortia. Four local authorities carried out procurement on their own – with population ranging between 200,000 and 800,000 (COUNUK3; COUNUK6; COUNUK7; NGOUK5). COUNUK2, NGOUK3, COUNUK4, COUNUK5 and COUNUK8 participated in regional or subregional consortia. These consortia covered Scotland (32 councils – population 5.4m), North East England (10 councils – population 2.2m) and most of Greater Manchester (8 councils – population 1.9m). In

two cases procurement was highly de-centralised because councils had dissolved their school catering organisations years before and left individual schools to make their own arrangements (NGOUK1b; COUNUK9). Most councils interviewed retained large central catering organisations. But these were reducing in size due to schools defecting to private catering contractors or taking their catering inhouse. See 5.2.3d above.

5.5.3b Use of lotting in public tenders

Lotting was practised in the large regional and subregional consortia mentioned above. However the size of lots was very large – individual councils with populations ranging between 200,000 and over 400,000. As such these lots still offered virtually no opportunities for smaller suppliers.

5.5.3c Future implications of Dynamic food procurement (DFP)

The proposed rollout of DFP first as a regional pilot project in South West England and then nationally could bring about a radical disaggregation of public food procurement. If this goes ahead it should become possible for a small food producer to use the system to supply its products to individual local authorities or subdivisions of a local authority or individual schools or catering companies. This has been more fully discussed in 5.4.3(c) above.

5.6 Logistical arrangements for local food

This section examines distribution of food to public kitchens – whether it is carried out by the same wholesalers who supply the food or whether there are co-ordinated distribution arrangements shared between several food suppliers. With regard to the latter, research considers how these arrangements are set up, how many municipalities are covered and how successful they have been in providing food as required, reducing transport costs and assisting small suppliers. This relates to Question 8 in the Interview Schedule (Table 19). The large wholesalers may assist municipalities with accessing organic and local food. In the past there have been difficulties in this relationship, including legal disputes over allegations of improper tendering practices. This relates to Question 9 in the Interview Schedule (Table 19)

5.6.1 Sweden

5.6.1a Two different approaches

Kommunes in Sweden divide into two groups as regards food distribution arrangements. Of fourteen communes interviewed, six depended on large contracted wholesalers to supply food – as they do in many other countries. These were KOMSE2, KOMSE3, KOMSE4; KOMSE7, KOMSE8 and KOMSE14. The two dominant food wholesalers in Sweden are Menigo and Martin & Servera. Emphasis was placed on the excellent service provided particularly by Martin & Servera – provision of high quality food –including organic – at very good prices. One commune explained that there was

no co-ordinated goods distribution in our kommune. We had a study done. It was a possibility but politicians did not want to pay for it. We have no electronic ordering system. Politicians said no to that as well. It would be difficult for kitchens to telephone orders to around fourteen different suppliers. Our wholesalers work with regional suppliers – so we can get their products through the wholesaler.

Eight communes were part of coordinated distribution arrangements. They were KOMSE1, KOMSE5, KOMSE6, KOMSE9, KOMSE10; KOMSE11, KOMSE12, KOMSE13. None of the communes reported any legal disputes with a wholesaler.

5.6.1b Differing views of multi-kommune co-ordinated distribution arrangements

A large kitchen manager at KOMSE1 spoke highly of her personal experience of this arrangement and was clearly satisfied with the service.

For meat and fruit and vegetables the commune has many different suppliers. It has a central distribution centre – everything goes to it. Many local suppliers come and the commune has a contractor to do the transport. ...Smaller producers are helped by co-ordinated distribution (KOMSE1).

The KOMSE6 catering manager who had overall responsibility for fourteen kitchens in a small commune which was tied in to the same distribution contract was less complimentary

Chefs don't like co-ordinated distribution very much. Its hard to get things on time and the chef has little control over the routes and delivery schedule.. ... Coordinated distribution should promote local and smaller suppliers but in practice local producers are more likely to make their own distribution arrangements. (KOMSE6]

The large kitchen was located a short drive from the distribution contractor. The fourteen kitchens were thirty miles away, scattered around a thinly populated rural commune – which helps explain why service was less satisfactory. KOMSE5 told us that they were not happy with delivery performance or supplier benefits from the existing coordinated distribution arrangement in partnership with five other communes. When the contract expired they hoped to set up their own arrangement which would only cover their commune.

5.6.1c Success with environment and local supply

Three commune managers confirmed that the introduction of coordinated distribution had greatly reduced the number of vehicle movements and resulting traffic congestion and pollution (KOMSE10; KOMSE11; KOMSE12). KOMSE10 had worked out the required delivery schedule prior to going out to tender for a distribution contractor..

KOMSE11 had worked out the delivery schedule jointly with the new distribution contractor. However the discussion of local food procurement in 5.4.1 above shows that the eight communes with coordinated distribution have had different levels of success with encouraging local food suppliers. KOMSE10, KOMSE11 AND KOMSE12 stated that their success with local food procurement was less than they had wished (5.4.1h). KOMSE6 said that their success with local procurement was not attributable to coordinated distribution (5.6.1b). To understand the relative success with local procurement of KOMSE1, KOMSE5, KOMSE9 and KOMSE13 there would be a need to explore factors specific to each of these communes. These are discussed in 5.4.1 and 5.5.1 above.

5.6.2 Denmark

5.6.2a Dependence on national wholesalers

Almost all Danish public kitchens depend on national wholesalers for food distribution services. Most Danish Kommunes are party to a national food supply and distribution contract, which has been awarded to the large wholesaler . Hørkram Foodservice (see section 5.5). Kommunes interviewed which were parties to the national agreement were KOMDK2, KOMDK3, KOMSK5 and KOMDK6. Two communes were however attempting to avoid dependence on the national contract - Kommunes A and D.

5.6.2b Transport provided by disabled training scheme

KOMDK1 had stayed out of the national contract. It had been able to set up its own arrangement for distributing food from local suppliers, using people employed by a social services training scheme for young people with disabilities, funded along with two other neighbouring communes.

A few of the young people have a driving license. They pick up two days in the week and go to the farmers. It is a win, win. The young people love picking up the food – they compete to go and do the job. We don't pay anything. The training scheme bought a car just to do this (KOMDK1).

This arrangement is appropriate for the modest scale of food purchases. There is no school food provided and an annual budget of 3.5m DKK (£385,000) buys food for 30 nurseries with 2,225 children.

5.6.2c Lack of scale

When KOMDK4 was interviewed in May 2019 they were conscious that the small local food suppliers they were eager to encourage had a great problem with distribution. There were 34 public kitchens in nurseries and elderly and disabled care. This kommune had resolved that it did not want to participate in the national food procurement contract because this would exclude local food producers. It decided to let all public kitchens make their own procurement arrangements – in the hope that they would buy local food. However these kitchens found great difficulty in accessing local food because

Our small producers are too small and the market is too small to set up a collaborative distribution arrangement. “When things get too small, there is no business” (KOMDK4a)

In May 2019 KOMDK4 was hopeful that they might be able to do a deal with a larger neighbouring local authority, KOMDK3. It was thought that their local suppliers could make use of the transport to be provided by the wholesaler to whom KOMDK3 was expected to award its supply and distribution contract. When KOMDK4 was re-interviewed in Apr 2021 these hopes had not been fulfilled. Kommune C had not yet awarded its contract. Many of the public kitchens within KOMDK4 had given up on local supply and decided to obtain food through the national contract.

5.6.2d Råhandel. A new local food trading platforms

KOMDK4 and KOMDK6 were however hopeful that they might in future be able to work with the new local trading platform, Råhandel. This is a new business which was set up in 2017 and has been growing rapidly during 2019 and 2020. It helps small local food producers sell to shops, restaurants and public kitchens. It combines a digital marketplace and a logistics system. Producers deliver their food to a logistics centre in Copenhagen from which it is distributed around the Capital Region and part of the

Zealand Region. At present Råhandel only serves a portion of Denmark. However it plans to expand to serve other regions – with the construction of new logistics centres.

Råhandel gives producers a better price and makes everything more transparent. Wholesalers are making big money on this – maybe a 30 per cent margin. In our existing food system wholesalers are king and queen (CONSDK4a).

In the future Råhandel may provide a service whereby communes can buy food from local producers and have it delivered to their kitchens – particularly in those areas where Råhandel decides to set up new logistics centres.

5.6.3 United Kingdom

5.6.3a Dependence on large wholesalers

Municipalities interviewed were dependent on large wholesalers, with very limited exceptions. Two local authorities – COUNUK1 and COUNUK5 – were parties to a large sub-regional contract which permitted local authorities to nominate specific products which wholesalers were required to transport for a fixed fee. COUNUK11 is located in a remote rural area. It said that efforts to source food from local suppliers were inhibited by logistical difficulties. It wanted to buy local cheese direct from a local producer and arranged with their fruit and vegetable supplier to collect cheese from the factory and distribute to local authority kitchens.

5.6.2b Future dynamic food procurement scheme

The proposed DFP scheme envisages that Crown Commercial Services will hire a distribution contractor in every region to provide a distribution service for all food traded through DFP (See 5.3.3d above).

5.7 Free Range Eggs

This section discusses purchasing of free range or organic and free range eggs. It relates to Question 19 in the Interview Schedule (Table 19)

5.7.1 Sweden

Ten kommuner said that they purchased organic eggs for public kitchens (KOMSE1;; KOMSE3; KOMSE4; KOMSE5; KOMSE7; KOMSE8e; KOMSE10; KOMSE12; KOMSE13; KOMSE14). One kommune said that they buy conventional free range eggs because they want to buy from a local producer (KOMSE9). A regional procurement adviser expressed concerns that organic chickens were not receiving adequate nutrition (REGNSE2c).

5.7.2 Denmark

Four kommuner said that they purchased organic eggs for public kitchens (KOMDK1; KOMDK3; KOMDK4; KOMDK5). One kommune said that they bought conventional free range eggs through the national food procurement contract (KOMDK6). CONSDK3 said that organic eggs could produce excellent results in the kitchen but they required different handling because the pasteurised egg whites do not behave in the same way as conventional ones.

5.7.3 UK

Eleven councils purchased free range eggs. In nine cases these councils had FFL accreditation (COUNUK1; COUNUK3b; COUNUK4; COUNUK6; COUNUK7; COUNUK8; COUNUK10; COUNUK11; NGOUK7). In two further cases these were councils which did not have FFL accreditation (COUNUK5 ; NGOUK5).

There were two references to purchase of caged eggs. COUNUK2 told us that the extra costs involved in buying free range eggs were one of the reasons why the Council dropped FFL accreditation. NGOUK1 told us of a large school kitchen which made food for twelve other schools and decided to save £10,000 per annum by replacing free range eggs with barn eggs. Animal welfare and food quality were sacrificed to save money (NGOUK1b).

5.8 Sustainable fish

This section examines purchasing of fish for public kitchens. If wild-caught it examines whether it has the Marine Stewardship Council label or any other sustainability label and whether it comes from a small scale coastal fishery. If farmed, does the fish come from a sea-based or a land-based fish farm. It relates to Question 20 in the Interview Schedule (Table 19).

5.8.1 Sweden

5.8.1a MSC label

Several kommuner mentioned that they have a policy of purchasing MSC labelled fish (KOMSE1; KOMSE2; KOMSE3; KOMSE4). KOMSE14 said that they had stopped buying mackerel because it had lost its MSC accreditation and that some Baltic fish should not be eaten too often because of pollutants.

5.8.1b Promoting local fish

The regional food promotion organisation REGNSE1 said that they were working with the local fishers to try free them from dependence on a few powerful wholesalers and encourage them to market fish directly to local customers including public kitchens. They were concerned that if they did nothing local fishing might die out in the next five

years. There are extensive local stocks of cod and plaice but individual fish are much smaller compared to those available from elsewhere. The problem is that public sector people need to be trained how to handle the smaller size of fish. There is a big local company who presently buys up all the fish and pays 8 kronor per kg. The fish should really be selling at 20 kr per kg. The project will establish an alternative marketing arrangement for the fishermen which will give them a better price for their fish. The regional catering training project REGNSE2a described how they were trying to encourage school kitchens to make greater use of herrings – which are under-utilised in public kitchens. They had a pilot project with a single school kitchen which served the fish to the children and had a good response.

5.8.1c Land-based fish farming

REGNSE1 said that there was a growth of landbased fish farming projects in Sweden. The concept was attractive to farmers who want to diversify because existing production is being hit by cheaper imports. Public kitchens could be interested in buying farmed fish. The Food Agency recommends that public kitchens should replace environmentally damaging red meat with fish. NGOSE1 was a social enterprise which was setting up a landbased fish farm in southern Sweden. The initial project was small – only 50 square metres. They had grant funding to promote tilapia and African cat fish to Swedish consumers including cooks in public kitchens. Farmed fish are free of Baltic pollutants. Land-based recirculating fish farming produces minimal pollution and relieves pressure on wild fish stocks. NGOSE1 hoped to start by selling their fish to a local hospital kitchen. KOMSE5 said that they had organised a training project with school chefs from five kommuner to experiment with techniques for cooking tilapia.

5.8.2 Denmark

5.8.2a MSC fish

KOMDK1, KOMDK2 and KOMDK5 said that they only purchased sustainable fish (MSC-accredited).

5.8.2b Local fisheries

KOMDK3 endeavours to buy from local fishers - asking for a box of unspecified fresh fish in season to be delivered every week to the kindergartens (CONSDK1). A Swedish interviewee drew our attention to the Danish kommune of Ringkøbing-Skjern, where public kitchens buy locally caught fish from small coastal fishing enterprises (REGNSE1). What was happening there was a model for the coastal fishery project they were developing in Sweden. KOMDK6 however told us that even though the kommune had an extensive area of coastline they did not buy any local fish.

5.8.3 United Kingdom

5.8.3a MSC fish - Food for Life requirement

In the UK all caterers with Food for Life accreditation were required to purchase MSC fish. This applied therefore to COUNUK1, COUNUK3, COUNUK6, COUNUK7, COUNUK8 and COUNUK10 and NGOUK7. The most widely used fish products were factory made fish fingers which only required heating.

5.8.3b Buying local fish

NGOUK5 described how their local city catering organisation in South West England bought large amounts of locally caught fish. Staff here were skilled enough to handle fresh fish and process them into meals - coated fish fillets and fish cakes.

5.9 Palm Oil, Thai Food, Brazilian beef

This section aimed to explore how public procurers approached the specific issues relating to these products. It relates to question 22 in the Interview Schedule.

5.9.1 Sweden

KOMSE3 and KOMSE4 both said that they tried to avoid sourcing both palm oil and Thai chicken. KOMSE3 said that it is impossible to buy vegetable solid fat without palm oil. They do ensure that they buy sustainable palm oil. KOMSE4 said that they buy potato cakes made in a local factory where they have had assurances that they contain sunflower oil and not palm oil. Their food tender specifies that all food purchased should not contain palm oil.

KOMSE3 said that they buy a small volume of a ready made salad which contains chicken from Thailand. The supplier claims that the chicken are produced under the same animal welfare criteria which apply in Sweden. The kommune are seeking evidence to confirm this. KOMSE4 said that they buy no chicken from Thailand. Findus offered to sell them Thai chicken two years. KOMSE4 refused to buy it because of the stories coming from Thailand about bad working conditions.

KOMSE2 said that they buy only Swedish chicken. They no longer buy Thai chicken due to knowledge of bad working conditions in Thailand. KOMSE7 do not buy anything containing palm oil. KOMSE14 said that it will only buy certified sustainable palm-oil. They try to avoid palm oil altogether by using products containing sunflower or rapeseed oil.

The large wholesaler, Martin & Servera requires that all palm oil used in its foods is 100% certified. The company is talking to its suppliers about reviewing palm oil use and using alternatives where possible (KOMSE3).

Martin & Servera has said that it buys about 10 per cent of its chicken from Thailand but this is mainly used to prepare products like chicken nuggets which are sold to private restaurants – only about 1 per cent is sold to public kitchens. Martin & Servera and the other large wholesaler, Menigo, support the QuizRR initiative to promote better working conditions among factory workers in Thailand (KOMSE3).

The amount of Brazilian beef imported into Sweden is very small and little or none is sold to public kitchens (REGNSE2).

5.9.2 Denmark

KOMDK5 said that they bought all their food through the national contract administered by SKI and they believed that SKI only bought sustainable palm oil. KOMDK1 said that they did not know whether the food they bought contained any palm oil. KOMDK3 said that they tried to minimise usage of palm oil and to check that it was from plantations which had not resulted from deforestation. A small amount of Thai chicken is imported into Denmark. It is mainly used to make chicken nuggets which are sold to the private sector (KOMDK3a). Very little Brazilian meat is imported into Denmark and it is not thought that any of it goes into public kitchens (CONSDK3a).

5.9.3 United Kingdom

Three councils stated that they only purchased sustainable palm oil (COUNUK1; COUNUK3; COUNUK6).

NGO10 said that Scotland Excel estimated that 96% of meat purchased for the national food contract came from the UK or EU. The remainder included beef from South America and chicken from Brazil and Thailand.

Financial pressures have led school caterers in England to buy more imported foods. This is particularly the case with caterers who do not have Food for Life accreditation. This trend has been pushed by the growth of academy schools in England. Imports include substantial amounts of chicken from Thailand and Brazilian beef (CONSUK1).

5.10 Fairtrade

This section was intended to explore the purchasing of Fairtrade products for public kitchens. It relates to Question 21 in the Interview Schedule (Table 19). However Fairtrade was only referred to in a single interview with COUNUK8 who said that the council bought a small quantity of Fairtrade foods – mainly bananas but also some sugar and cocoa. The interviewee said dismissively “It’s a bit of tick box exercise”. The issue of why there was so little response to this question is considered further below (6.4.5).

5.11 Innovative Products

This section discusses whether there are any connections between public food procurement and development of innovative food products. This heading relates to question number 23 in the Interview Schedule (Table 19).

5.11.1 Sweden

5.11.1a Wild boar meat

The use of wild boar meat in public kitchens was referred to by two communes (KOMSE5 and KOMSE11). Wild boar are a serious agricultural pest in Sweden. The strong taste of the meat means that a small amount can give an excellent flavour when cooked in a dish with vegetables (KOMSE5). A national network has now been established to promote the use of wild boar meat – including cooking techniques and food safety practices (Backlund, 2020).

5.11.1b Fish

See 5.8.1b on development of a small-scale coastal fishery and 5.8.1c on development of land-based fish farming. Both of these developments are innovative projects oriented on selling at least part of their output to public kitchens.

5.11.1c Climate friendly dishes made with Swedish ingredients

KOMSE5 aspires to work with local food companies and the local Science Park to develop food products which are healthy and sustainable and can offer the public kitchens as a test bed for new products. The biggest development so far is a special roll named after the kommune. The vegetarian version is centred with falafel using Swedish-grown gray peas rather than imported chickpeas. The chicken-based version uses organic meat from ex-laying hens which would normally be incinerated. The bread is a completely new product - a sustainable pitta bread made from sourdough, spelt, rye and barley instead of yeast and wheat flour. This continues to be marketed and is part of the kommune's wider marketing campaign for planet friendly food..

5.11.1d Organic legumes

Growing demand for plantbased meals has led to an increase in imports of legumes – both conventional and organic – from southern Europe. REGNSE1 mentioned research work being carried out at the Swedish Agricultural University with developing legume varieties best suited to the Swedish climate. NGOSE3 said that Orebro Kommune was planning a pilot project using Swedish organic legumes to prepare meals in selected school kitchens. The ingredients would be supplied by Nordisk Råvara, which has reintroduced organically grown traditional Swedish varieties of grey peas, lentils and broad beans into the Swedish market. Local journalists were to be invited to visit the school dining rooms to taste the meals. The objective was to encourage Swedish growers and reduce Sweden's dependence on imported legumes.

5.11.2 Denmark

In December 2019 the Danish government gave a small grant (1.1m DKK) to NGODK2 to set up a project to promote plant-based foods within the Danish food industry – to retailers, wholesalers and large kitchens – both private restaurants and public canteens. While consumer demand for plant-based food was growing, too often these were not being made in Denmark, based on Danish ingredients. This project has had a very big response from Danish businesses who are interested in developing new plant-based food products and Danish farmers who want to start growing legumes for the Danish market to replace imports (NGODK2b).

5.11.3 United Kingdom

The only reference to innovative foods in the UK interviews was a brief exchange with the catering manager at COUNUK3 who said of insect-based foods “We hope to try it out some time. We may try it as a one off. It could be a lot of fun” (COUNUK3b).

5.12 Seasonal & scratch cooking

This section discusses whether the cooking approach in kitchens is predominantly based on heating up bought-in, pre-prepared meals (chilled or frozen) or cooking from basic ingredients (“from scratch”). It relates to Question 12 in the interview schedule.(Table 19). This section also explores how catering managers defined seasonal cooking and the circumstances under which they introduced this approach. It relates to Question 11 in the Interview Schedule (Table 19).

5.12.1 Sweden

Ten catering managers stated that they aimed to cook from scratch and to use seasonal ingredients as much as possible. (KOMSE1; KOMSE2; KOMSE3; KOMSE4; KOMSE5; KOMSE6; KOMSE7; KOMSE8; KOMSE14; REGNSE2). These changes have produced cost savings which have helped finance the increasing percentage of organic food in the kitchens. The move to scratch cooking and away from using prefabricated products, has taken place over the last ten to fifteen years (REGNSE2;KOMSE2; KOMSE14). In KOMSE8 80 per cent of food is cooked from scratch – compared to around 50 per cent in 2006 (KOMSE8b). In KOMSE7 the change took place when a new catering manager took over in 2017. This required extensive training using the local cooking school. Some staff retired or left and more skilled staff were hired. The adoption of a seasonal menu meant a focus on vegetables which are available all the year round in Sweden – particularly root vegetables and Swedish greens such as cabbage and kale.. These are the staples of traditional Swedish food culture. Cucumbers, tomatoes and lettuce can be served during the months when they are seasonally available in Sweden, but not if they have to be imported or grown in greenhouses. KOMSE2 prefers not to serve them at any time of the year – preferring to use only root vegetables and Swedish greens. KOMSE7 said

that they did sometimes serve these in winter because the children want them, even though they have to be imported.

5.12.2 Denmark

Seven Danish interviews stated that there were widespread practices of cooking from scratch and seasonal menus (CONSDK1;CONSDK2; CONSDK3; KOMDK1; KOMDK2; KOMDK3;KOMDK5). These changes have produced cost savings which have helped finance the increasing percentage of organic food in the kitchens.

KOMDK3 said that they had received a DKK 3m grant to build a new kitchen to cook for elderly people both in care homes and living at home. The old kitchen was only equipped to heat up pre-fabricated meals. The money was used to create a new kitchen which could cook from fresh ingredients. It was hoped that this would encourage elderly people to eat more. Existing employees in the elderly kitchen have left and eight new employees have been hired who are able to cook from scratch. Other kommuner have concentrated on retraining employees (NGODK3; CONSDK1; CONSDK2; CONSDK3; KOMDK3; KOMDK5).

Three interviewees stressed the importance of cooking with root vegetables. CONSDK2 said that in mid-winter a wide variety of root vegetables are available which can form the basis of a seasonal menu – such as celeriac; cabbage; leeks and potatoes. CONSDK3 also emphasised the importance of using extra root vegetables – such as carrots, beetroot, celery and all sort of cabbages. She preferred to avoid using lettuces and tomatoes. Root vegetables are generally tastier – as well as being cheaper and having a lower carbon footprint because they do not have to be grown in greenhouses or imported from Spain for most of the year. KOMDK1 also emphasised the importance of root vegetables.

CONSDK2 said that March and April were the hardest month to bring a variety of vegetables to the table. The winter vegetables are running out. There is asparagus but not very much else. They are looking at reinstating the traditional practice of using fermented and salted vegetables. They are inspired by Korea which has a strong tradition of fermented food. Fermented food can offer nutrition and vitamins and can also offer a new diversity of tastes. They are going back to old cookery books to revive the recipes. The early Spring diet will also involve more meat than in Summer because vegetables are less available.

5.12.3 United Kingdom

In the UK cooking from scratch and seasonal menus have long been widespread practices. These changes have produced cost savings which with some councils have helped to finance the additional costs of local and/or organic food. This approach is explicitly promoted by the Food for Life model and they are required by FFL Bronze, the first level of the accreditation process. The above applies to the following COUNUK1, COUNUK3, COUNUK4, COUNUK6, COUNUK7, COUNUK8, COUNUK10, COUNUK14. As part of the annual FFL audit, the products which are not cooked from scratch will be counted up - for example at COUNUK3 the menu for a specific three week cycle showed 90 potential dishes of which 92 per cent were freshly prepared. Exceptions were battered fish, fish fingers, jacket potatoes, cheese and beans, cherry muffin, lemon meringue pie, lemon mousse, and ice cream with summer fruit sauce. Food for Life places strong emphasis on training of catering staff with skills in fresh food preparation (COUNUK3; COUNUK4). Councils which were not FFL accredited often also practiced seasonal menus and scratch cooking because of better food quality and lower costs (CONSUK1; COUNUK2; COUNUK5, NGOUK5). COUNUK3 said that their approach to seasonal menus meant that they used a large amount of root vegetables - particularly in spring when there was no fresh produce available from within the UK.

5.13 Reducing meat

This section considers the extent to which municipal catering organisations aim to reduce meat usage. It relates to Question 13 in the Interview Schedule (Table 19)

5.13.1 Sweden

5.13.1a Link to organic food

Interviews demonstrated strong public sector support for meat reduction initiatives “Every kommune in Sweden talks about less meat and more vegetables” (KOMSE1). The linkage between organic food usage and meat reduction was explicitly mentioned by four interviewees. REGNSE2 said “Our approach is to have less meat but better quality meat. Increasing vegetarian food is a good way to find money for organic”. Similar points were made by KOMSE2, KOMSE7 and REGNSE2. Seven interviews showed that it was a common practice to offer service users a choice between a meatbased and a vegetarian meal (KOMSE1; KOMSE2; KOMSE3; KOMSE4; KOMSE5; KOMSE8b; KOMSE14).

5.13.1b Meatfree days

NGOSE2 told us that throughout Sweden

literally all schools and public cafeterias have at least one meatless day per week. But quite often its more than that.

This appears to be an overstatement. Having meatfree days is certainly a widespread practice. Seven catering managers confirmed that they were doing meatfree days at least once a week (KOMSE1; KOMSE2; KOMSE4; KOMSE5; KOMSE7; KOMSE8b; KOMSE14).

5.13.1c Reformulating recipes

Interviews showed this to be a somewhat more widespread practice than meatfree days. Eight catering managers confirmed that they were reducing the amount of meat served in popular recipes and replacing meat with legumes and vegetables. It was important to do this in such a way that the food continued to have an acceptable taste (KOMSE1; KOMSE2; KOMSE3; KOMSE4; KOMSE5; KOMSE6; KOMSE7). This approach was also promoted by a regional catering training project (REGNSE2). KOMSE8 purchased large quantities of vegetarian products incorporating soya which had high acceptance when fed to school children as a meat substitute (KOMSE8e). Interviews indicated that it was a widespread practice to replace beef by chicken or pigmeat which have a lower carbon footprint. KOMSE5 used minced meat from wild boar which is available locally. Its delicious taste means that cooks can use less meat when you incorporate it in a dish with vegetables.

5.13.1d Offering vegan meals

No kommune offered a totally vegan menu. NGOSE2 said they were campaigning to eliminate meat from public meals. They aspired to remove meat all together from public cafeterias. Only one other interviewee referred to elimination of meat from all public meals, who thought that there was little public support for vegan food (KOMSE8c).

5.13.1e Opposition to meat reduction

One catering manager warned that being too upfront about meatfree days could arouse opposition.

We have at least two vegetarian days in the week. But we do not have a specific day and don't say its meat free. If we say today is the veggy day all the parents will complain. Instead of saying 'veggy soup' we say 'leek and potato soup. It is provocative to say today there is no meat (KOMSE3).

5.13.2 Denmark

Twelve interviewees made reference to meat reduction in public kitchens (NGODK1; NGODK2; NGODK3; NGODK4; CONSDK1; CONSDK2; CONSDK3; KOMDK1; KOMDK2; KOMDK3; KOMDK5; GOVTDK1).

5.13.2a Meat reduction as part of organic conversion process

Interviews showed that many kommunes had developed a longstanding practice of reducing meat to release money to pay the extra cost of organic food. This had been done without an explicit meat reduction policy KOMDK3 – for example - served vegetarian meals in its kitchens two days a week (See also NGODK1; NGODK2; KOMDK1; KOMDK5; CONSDK1; CONSDK2). The approach had not been to eliminate meat but to serve less meat and better meat – organic when possible. Meat-based recipes had been reformulated – with a smaller amount of meat to give taste but much of the meat replaced by plant-based ingredients (CONSDK1a; CONSDK2; CONSDK3a).

5.13.2b City meat reduction policies

In January 2019 KOMDK2 was the first kommune to develop an explicit policy of quantifying and reducing meat usage in its public kitchens as part of its overall approach to reducing its carbon footprint. KOMDK2 is a small kommune with a population of 41,000 within a short commuter journey of a large city. Large cities in Denmark started to follow suit. There was widespread awareness of the EAT LANCET report – that a largely plant-based diet is good for the planet and good for human health (GOVTDK1b; NGODK3).

Interviews in March 2019 highlighted the heated debates in Denmark's second largest city, Aarhus over a proposal to require plant based food in public kitchens. There was

a narrow majority in favour of the proposal – 16 out of 31 councillors. However one councillor changed their mind amidst health concerns expressed about vegan food for small children and the motion did not win a majority (NGODK1; NGODK2a). At the same time there were proposals in another large city KOMDK3 to reduce meat in public kitchens. It was decided that rather than having a council policy to try to fix the amounts of meat used in public kitchens it would be better to fix a target for the climate impact of public kitchens and leave it to kitchen managers how to meet the target (NGODK1; CONSDK1a; KOMDK3b).

By August 2019 Aarhus City Council had adopted a plan to reduce the carbon footprint of purchased food by 25 percent in 2024. KOMDK3 adopted a similar policy in its new food strategy with a deadline of 2025. Some of the red meat would be replaced by chicken, pig and plant-based substitute products. Elderly people nursing homes in Copenhagen would continue to have the meat-based dishes they were accustomed to (CONSDK1b; KOMDK3b; NGODK4).

5.13.2c Public kitchens not catering for vegetarians

Outside the big cities many Danish kommunes did not offer a vegetarian/plant-based alternative in public meals (NGODK2; NGODK4; GOVTDK1b). GOVTDK1 said that kommunes resistance to vegetarian food is a cultural thing.

“In many places to serve falafel is seen as anti-Danish. Danes should eat meat. In Denmark we aim to be a homogeneous society. We are very reluctant to assimilate other cultures compared to Sweden or the UK (GOVTDK1B).

In the same spirit there was a Danish kommune which had voted for a policy requiring pigmeat to be served every day in public kitchens – which cannot be eaten by Muslims. The Danish govt has continued to be reluctant to intervene with the discretion of individual kommunes. It has urged vegetarian campaigners to raise the issue in the November 2021 local elections. Preparations were continuing with bringing a lawsuit aimed at getting a court to rule that kommunes must provide a vegetarian alternative in public meals (NGODK2b).

5.13.2d New government climate policy October 2020

GOVTDK1 said that the new climate policy signified a major shift in Danish government attitudes on meat and climate. The government decided to make two meatless days a week in government canteens voluntary because it did not want to have a confrontation with the unions in the middle of a pandemic. But the proposals showed the direction of travel. Government canteens would still be encouraged to reduce carbon emissions and this would entail more plantbased food. All kommunes would be measured on GHG emissions. Kommune canteens would be encouraged to go in the same direction as the government canteens. GOVTDK1 added that reducing meat and dairy was unsayable within the Danish government till 2018 or 2019. Denmark had been a meat and dairy culture but big business had changed. If big business was moving to a plant based agenda then the government could follow (GOVTDK1b).

5.13.2e New dietary recommendations

Early in 2021 the Danish government issued new healthy eating recommendations. The guidelines called for a reduction in meat consumption and increased consumption of vegetable protein. These represented a big departure from current consumption patterns (CONSDK3b).

5.13.3 United Kingdom

5.13.3a Vegetarian alternative standard practice

The norm in UK school kitchens has been the provision every day of a meat-based meal and a vegetarian alternative. This was the case with all the councils studied.

5.13.3b England - recent growth of meat reduction initiatives

Ten interviews with English organisations referred to meat reduction initiatives: COUNUK1; COUNUK3; COUNUK4; COUNUK5; COUNUK6; COUNUK7; COUNUK8; COUNUK10; NGOUK1; NGOUK6. A number of these interviews stressed that there had been a recent growth of meat reduction initiatives in England. NGOUK6 – which had an overview of school food organisations - said that a major reason for meat reduction was that reducing meat could save a lot of money in a time of acute financial stringency. Another factor was that children were showing greater awareness of the climate crisis and becoming increasingly receptive to school menus with lower meat content (COUNUK5; COUNUK8; COUNUK10). COUNUK10 told us that up until a year ago there was little demand for a meatfree Monday. But there has been growing demand for vegan and plant-based food. The new menu – from April 2020 – would have Meatfree Monday unless schools specifically objected to it. COUNUK5 said that reducing meat consumption would have been a novel idea five years ago. Now talk of climate friendly food is widespread. Everybody is cutting down on meat and vegetarian food is already very widespread

5.13.3c Meat free days

Councils which referred to meat free days were COUNUK2, COUNUK3, COUNUK4, COUNUK5, COUNUK6 and COUNUK8. COUNUK4 said that the Council offered head teachers the option of a meatfree day on the menu but not all headteachers wanted this. COUNUK5 said that they avoided talking about Meat free Monday but did it in practice. COUNUK6 said that they had one vegetarian day a week. Some people were very happy about this. There was some moaning that the Council was acting like Big Brother. Overall reactions were positive.

COUNUK3 said that they had started off with one Meatfree day. In the new menu they expected to have three or four totally meat free days. Initial resistance from parents has diminished. At first some parents said that they wanted their child to have meat every day. Some parents were farmers who produced meat. Attitudes have changed. People are much more aware that meat reduction is healthier and reduces the climate

impact. Their approach was to put more pulses and beans inside a dish instead of meat. They did lots of menu and recipe development because it is essential that the food should taste really good.

5.13.3d Vegetarian food needs to taste good

COUNUK1 also stressed the importance of developing new plantbased recipes which children will enjoy . They developed lots of recipes using the knowledge and skills of catering staff, many of whom had second jobs in the city's restaurants. NGOUK1b described what happened in the local authority she was familiar with. A minority of chefs were very versatile but many struggled with creating tasty vegetarian meals. They relied excessively on cheese and did not make enough use of the non-dairy protein– lentils, beans and pulses – required by the School Food Standards.

5.13.3e Reducing the percentage of meat in familiar dishes

COUNUK1 described how they had done much work with reformulating existing meat-based recipes to replace at least some of the meat with plant-based ingredients. These could be beans, chick peas or lentils. Or the chefs could try using a meat substitute such as quorn. The revised recipe would need to pass taste tests of acceptability to the children. It would also need to be affordable because quorn is not a cheap ingredient. COUNUK6 told us that they had tried adding quorn to lasagne as a meat substitute but found that children did not like the taste. Soya has become very expensive. They had found that blending legumes, onion and mushrooms into the sauces went down well with children and they were also using seitan. COUNUK5 has done similar work.

5.13.3f Meat reduction & organic conversion

COUNUK3 said that when moving from conventional to organic ingredients they also needed to reformulate recipes. They reduced the percentage of meat but bought

organic meat as much as possible. “We use more vegetables and less but higher quality meat” (COUNUK3).

5.13.3g Scotland – new school food standards require meat reduction

In March 2021 Scotland introduced new school meal standards which will oblige school caterers to reduce red meat and processed meats and serve more fruit and vegetables instead. Up till now catering managers have wanted to maximise sales to those parents who pay for meals for their children. Accordingly school caterers have tended to offer lots of unhealthy but very saleable food - sausages, hot dogs, burgers, and pizza. The introduction of the new school meal standards will be followed closely by universal free primary school meals – which will remove commercial pressure to sell these unhealthy foods (GOVTUK1b; COUNUK2)

5.14 Reducing Food Waste

This section discusses the extent to which public kitchens measure the amount of food waste and try to reduce it. This relates to question 14 in the Interview Schedule (Table 19).

5.14.1 Sweden

5.14.1a Considerable efforts devoted to food waste reduction

Ten catering managers stated that considerable efforts were devoted to measuring and reducing food waste (KOMSE1; KOMSE2; KOMSE3; KOMSE4; KOMSE5; KOMSE6; KOMSE7; KOMSE8; KOMSE14; REGNSE2). Repeated reference was made to reduction of food waste as a means to finance an increased percentage of organic food. Quantities of food waste in school and pre-school kitchens are regularly weighed. Ideally kitchens should check every morning how many pupils have arrived

in the school before they start cooking. However most Swedish kommuner do not have an electronic system for measuring attendance in school dining rooms (KOMSE2b). The Catering Manager in KOMSE4 said that they had been very successful in reducing food waste:

We are serving more portions but there has been a great reduction in food waste – so the amount of food we buy is less.... Organic may have shorter storage life and needs to be handled differently. The kitchen has to figure out how to get the right amount put out for the children at lunchtime. Not too much and not too little. We frequently make a vegetarian soup to make use of surplus veg and salad, bread and pasta (KOMSE4).

Three catering managers said that levels of food waste were lower when food was cooked at the site where it is consumed because the kitchen staff can save the left over food and reuse it (KOMSE6; KOMSE7; KOMSE8). One catering manager said that levels of food waste in his schools were extremely low. He attributed this to allowing the children to choose the foods they preferred every week. The children like to have kebabs, pizza and burgers but they still get a healthy meal (KOMSE7). Another kommuner was doing pioneering work using artificial intelligence to try to predict food waste levels. Sensors have been installed in one school to measure how much time children spend in queues for the school lunch. The project explores whether there is a correlation between long queues and more food waste. If there is a long queue kids may pile more food on the plate and end up throwing away more food. They will not have time to go in the line a second time (KOMSE2b).

5.14.1b Level of food waste in Sweden is higher than UK

Based on observations of a UK food waste expert trying to sell software into Sweden the level of food waste in Swedish schools is much higher than UK schools which this individual had previously observed. This difference was attributed to the Swedish norm of providing a buffet during school meals which offers children greater choice than is customary in the UK (Participant Observation PO8).

5.14.2 Denmark

In Denmark the organic conversion process in public kitchens has long involved a focus on reducing food waste as a way of generating savings to finance the extra costs of introducing organic food (CONSDK1a; CONSDK2; CONSDK3a). KOMDK1 stressed that they found ways to reuse any surplus food in the next day's meal. In the last two years there has been an increased emphasis on food waste reduction as one of the ways in which to reduce the climate impact of public kitchens. CONSDK3 said that she was involved in a national project to this end. The aspiration is that Denmark will develop a food waste measurement process which will become a worldwide standard.

Employees of KOMDK3 confirmed that they commenced a major food waste reduction project in the second half of 2020 (KOMDK3d). Actual measurement of food waste levels in the public kitchens began in June 2021. The objective was to establish a baseline against which future progress could be measured. The large central kitchen which makes the school meals produces very little waste. The management do well in forecasting future demand for school meals so they are left with little unused food. However once the food gets to the schools there is a big waste problem.

It is very hard to do anything about the factors promoting food waste where food is provided from the central kitchen. Children eat their lunch in the classroom rather than a dining room. They may not have enough time to eat the food. Only some children have the school meal. Others have a packed lunch. Teachers may encourage the children to eat the food. But they may not (KOMDK3d).

The meals are subsidised by the kommune, so wasted food is very costly. In other schools in the kommune with onsite kitchens children eat together in the dining room. There is much less food waste. Children are encouraged to eat the meal. There is dialogue between the chef and the children, who become more willing to enjoy new dishes (KOMDK3d).

5.14.3 United Kingdom

Sixteen UK interviewees expressed views on food waste. Most UK responses indicated that food waste was seen as a relatively unimportant issue. There was very little publicly available data on food waste levels, although there were aspirations to collect more in the future (NGOUK4; NGOUK8). Only one interviewee said that food waste was a major problem. This was an NGO in a Scottish city – one of the few UK councils which has introduced free school meals for all children. However the quality of food served from centralised kitchens was poor.

Children have a hurried, crowded, noisy meal experience with grumpy dinner ladies, who slap the food on the plates. Get the kids in and out. Children go hungry. They get to the end of the line and there is nothing they want to eat. There is no pre-ordering system. The excuse is that it would be too difficult to administer. A huge amount of food is wasted. People don't want to eat it. And there are children who are not getting adequate meals (NGOUK3).

A civil servant expressed the view that estimates that as much as 40 per cent of school food was being wasted were not credible. School catering managers were working to such tight budgets that there was no way they would permit such levels of wastage (GOVTUK1A). Five interviews referred to food waste levels as being reduced by the introduction of new software into many schools whereby children and/or parents order specific meals beforehand (NGOUK6; GOVTUK1a; COUNUK1;COUNUK2; COUNUK3b).

Two NGOs confirmed that they were not aware of any measurement of food waste (NGOUK6; NGOUK9). Two catering managers stated that they did not measure food waste (Bury, Gateshead) Two more said that it was measured in certain schools where there was a problem (Manchester Leics).

Reference was made to a pilot project aimed at reducing food waste which involved nine schools in COUNUK4 where teams of Pupils became Waste Warriors who measured food waste and sought to devise ways of reducing it. These included giving pupils extra time to eat lunch, more flexibility on portion sizes, greater pupil and cook's input into menu, encouraging pupils to try new foods and redistributing unserved leftovers. Resulting annual savings were estimated at £12,000 per school.

One catering manager said that they had a systematic policy of measuring food waste in the kitchens, but not plate waste. They change the menu twice a year and for the first three weeks of the new menu they look at food waste very carefully to see how children respond to the new menu and which dishes are not liked by the children. . The target ingredients cost is 85p per meal. If it is over that the area manager will look at the waste sheet to see if that explains the cost increase. They can measure the waste left in the kitchens if they make 200 portions and end up using 150. They cannot however see how much plate waste goes in the bin, although the midday supervisor may tell them something (COUNUK10).

COUNUK3 has introduced two different size portions/price levels so not to waste food, and supervisors are required to monitor food waste. With this council the resulting savings have helped to fund the extra cost of organic food. Food for Life only requires caterers to take steps to monitor and reduce food waste at Silver and Gold levels – where the savings will help to finance organic.

A Scottish council said that there was a lot of plate waste. To reduce this a whole school approach was needed – to ensure children have a good lunchtime experience, enough time to eat the lunch, a dining hall with a good atmosphere – not too noisy and crowded, time also to play with their friends (COUNUK11). The announcement of the Scottish government's new policy of universal free school meals for primary schools aroused concerns that this could lead to a big increase in food waste – particularly since new school food standards will require children to be served a much greater volume of vegetables (NGO10; COUNUK11).

5.15 Reducing Carbon Footprint

This section considers whether municipalities examine the carbon footprint of their catering operations, whether they know which items make the biggest contribution to the carbon footprint and the extent to which they aim to reduce it in future. It relates to Question 16 in the Interview Schedule (Table 19). This section particularly focusses on whether municipalities are able to quantify this impact and whether they have quantified targets for reducing this and if so how. Municipalities may also express a general desire to reduce the climate impact of their activities, without quantifying this.

5.15.1 Sweden

5.15.1a Quantifying overall climate impact

One regional authority and seven kommuner (out of fourteen) were engaged with quantifying the climate impact of public kitchens:

- KOMSE1 gave details of the carbon dioxide equivalents calculated for specific foods – beef, pork, chicken, eggs, fruit and vegetables. As well as reducing meat usage it had highlighted the high carbon footprint of rice and preferred to use bulgur instead.
- KOMSE2 had calculated that their food purchases corresponded to 2.0 carbon dioxide equivalents per kilo and needed to be halved. In 2019, the goal was to reduce emissions to 1.5 carbon dioxide equivalents per kilo through reducing waste and meat, while increasing usage of vegetables (KOMSE2a).
- KOMSE3 said that its policy was to reduce greenhouse gas (GHG) emissions from food procurement by 40 % by 2020, compared to the 2002 level, which was 13 360 ton CO₂-equivalent. Through increased use of plant-based meals they had already achieved a 20% reduction of food-related carbon emissions.

- KOMSE8 had decided a policy of reducing the climate impact of the whole city's purchases by 30-40% between 2010 and 2030. The policy officers were working out a baseline figure for 2020 in order to monitor future achievements (KOMSE8a). To meet the carbon reduction target schools would need to have two vegetarian days a week, two days with fish and one day with meat (KOMSE8b).
- KOMSE14 confirmed that they were able to measure the carbon footprint of their food purchases using carbon values supplied by RISE.
- REGNSE2 was calculating the carbon emissions of its food consumption for the first time.

5.15.1b Measuring carbon footprint of individual menus

Mashie is a Swedish software company which is a major supplier of catering software to Swedish public kitchens. It has developed a climate module which enables catering managers to calculate the carbon footprint of every recipe and to assess how it changes if the ingredients are varied – for example by reducing the percentage of ground beef and substituting it with lentils. Two of the communes interviewed have purchased the climate module – KOMSE7 and KOMSE13. KOMSE2 told us that they had considered purchasing this module but it was too expensive – so they continued with the simpler method of calculating carbon footprint based on looking at their overall food purchases over a time period such as a year and assigning a carbon value to every product purchased.

5.15.1c Ways of reducing carbon footprint

There was general acknowledgment of the importance of reducing food waste and reducing the usage of animal products and increasing the plant-based content of

meals. The widespread practice of seasonal menus which avoided usage of fruit and vegetables either imported or produced in greenhouses also reduced carbon footprint. This was referred to by KOMSE1 and KOMSE2. With those communes operating coordinated distribution arrangements there was also awareness that by reducing vehicle movements, these reduced carbon emissions. Three communes said they were quantifying emissions savings from buying Swedish food rather than imports (KOMSE1; KOMSE2; KOMSE8).

5.15.1d Procurement agency – falling climate impact of public sector food purchases, 2016-2019

Fig 33 below shows that the climate impact of public food purchases decreased between the years 2016 and 2019 - whether measured per kilogram or per krona of food purchased. The main explanation was reduction of meat purchases. The graph was based on purchasing statistics from Mashie which were estimated to cover 60-65 per cent of public food purchases in Sweden. The data for 2019 covered 164 municipalities and eight regions (Upphandlingmyndigheten, 2021).

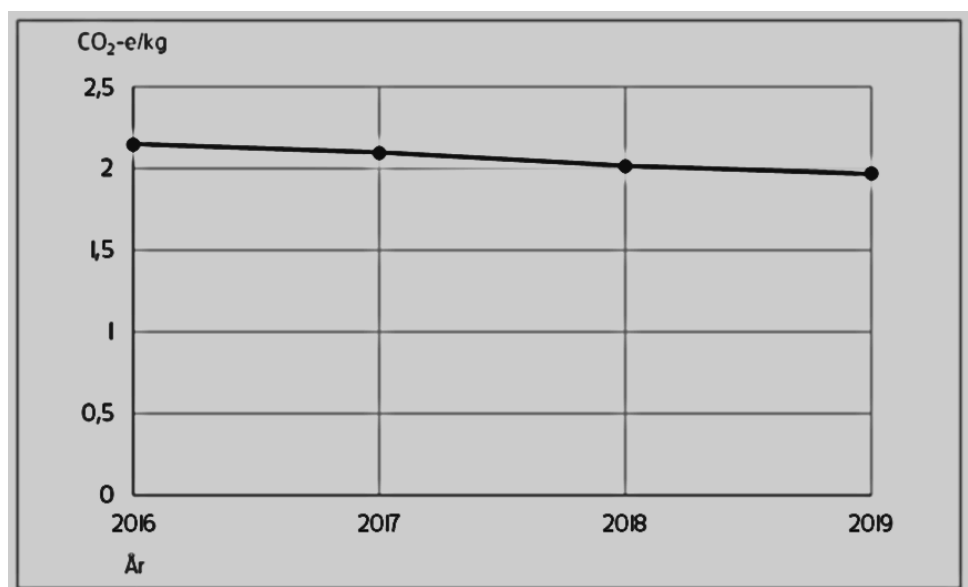


Fig 15 Reducing climate impact of public sector food purchases – CO₂ equivalent/kg, 2016-2019 (Source: Upphandlingmyndigheten, 2021, p.22)

5.15.1e Ekomatcentrum – Climate & Organic League (Klimatekoligan):

Table 29 Climate & Organic League Table (Ekomatcentrum, 2021 p. 15)

<u>Rank</u>	<u>Organisation</u>	<u>Organic %</u>	<u>CO2 equivalent</u>	<u>Climate & Organic calculation</u>
1	Malmö	68%	1.5	1.82
2	Örebro	69%	1.6	1.91
3	Lund	75%	1.7	1.95
4	Region Kronoberg	51%	1.5	1.99
5	Uppsala	53%	1.6	2.07
6	Helsingborg	41%	1.5	2.09
7	Kävlinge	40%	1.5	2.10
8	Arboga	40%	1.5	2.10
9	Landskrona	38%	1.5	2.12
10	Strängnäs	48%	1.6	2.12

Table 29 shows a new league table for Swedish kommunes recently introduced by the Ekomatcentrum (Organic Food Centre). It ranks the top ten kommunes by a combined measure of percentage of organic food and climate performance. If a municipality reported 1.8 kg CO₂ equivalent / kg food and had an organic percentage of 50%, they were given a climate/organic score of $1.8 + 0.5 = 2.3$ (Ekomatcentrum, 2021, p.15). The small number of kommunes in this table compared to the 258 listed in the table of organic food percentages suggests that the number of Swedish kommunes which were able to report the CO₂ equivalent of their food purchases was relatively small.

5.15.2 Denmark

5.15.2a “Very few people in Denmark have calculated the climate impact of public meals”

This was the view expressed by CONSDK3 when last interviewed in April 2021. ConsDK3 had calculated the climate impact of public meal for four hospital canteens and a kommune with 60 kitchens (KOMDK2). Our separate interview with

KOMDK2 provided the carbon footprint figures for this kommune's kitchens. CONSDK3 said that she calculated carbon footprint on the basis of total purchases by the kitchens over a period of time. She did not calculate it for specific recipes.

I calculate what they buy, not the single plate/meal although I can do that if it is asked for...I don't agree on calculating the meal/plate/recipe, as it will not show food waste, it is far too time consuming, and it is not very interesting for the kitchen staffs daily routine – and it will be inaccurate if the content is changed due to shortage of supply or whatever.

There was no catering software yet available to make quick and easy calculations of the carbon footprint of specific recipes.

5.15.2b No generally accepted figures for carbon footprint of foods

CONSDK3 added that Denmark did not yet have a generally accepted figures for the carbon footprint of specific foods. The Green think tank Concito had produced figures but many people were not happy with their way of calculating these (Concito, 2019). In a short time she expected the Danish government to release official figures based on life cycle analysis. The food suppliers would then use these to calculate carbon figures for their products. One of the biggest suppliers in Denmark was getting ready to provide carbon footprint data for its products (CONSDK3b). This was confirmed by a civil servant in June 2021:

Among the professionals there is no agreement as to a single approach to calculating the carbon footprint.. Therefore it is not possible for the authorities to require kitchens to calculate the climate footprint. We have asked Aarhus University to investigate the methodology. Look at different methods for calculating the climate footprint. Their report will be available later this year (GOVTDK2).

5.15.2c KOMDK3 aspires to start calculating the carbon footprint of its food procurement

Interviews during April -May 2019 showed that the large city KOMDK3 intended to start calculating the carbon footprint of its food procurement, with a view to reducing it by 25% by 2025 – particularly by reducing meat and waste (KOMDK3a; KOMDK3b). In August 2020 a follow up email said that the City did not yet have any software in

place to calculate carbon footprint of food operations but was working with the Danish technical university to calculate the right baseline and set up the right system to measure future impact. In August 2021 a further interview confirmed that the city aimed to reduce carbon footprint of its food operations by 25%. The city intended to do a baseline calculation of the carbon footprint based on the total amount of what they buy every year – kilos of beef and kilos of lentils and all other foods.

We are looking at the right software to measure the climate impact in the kitchen. In Denmark there is not really an agreement on how to measure it (KOMDK3d)

Other Danish interviewees referred to meat and waste reduction but were not engaged with measuring the resulting reductions in the carbon footprint.

5.15.3 United Kingdom

The interviews showed that the overall level of engagement with measuring and reducing the climate impact of public sector food was rather low. Other UK interviewees are referred to above who were involved with meat and waste reduction initiatives but were not measuring any resulting reductions in the carbon footprint

5.15.3a One council catering service had measured its carbon footprint

This was COUNUK6 who said that they had worked with a local university to calculate the carbon emissions of their existing menu and developed a new menu with more plantbased recipes. The new menu had 36% lower greenhouse gas emissions.

5.15.3b UK catering software not measuring carbon footprint

The catering software widely used in UK school kitchens - Nutmeg and Saffron – did not have the capability to generate the carbon footprint for specific recipes (NGOUK9). NGOUK9 commented that catering managers are very overworked. They don't have the time to look at climate impact on top of the existing challenges of running the school meals service.

5.15.3c Two councils in research project with a university

COUNUK11 said they chaired a group of Scottish councils who were working with a university to develop software to calculate the carbon footprint of menus. One Council had shared all its recipes, menus and information on portion sizes with the university. The other was sharing the invoices which showed how much money was being paid for different types of food.

5.15.3d Local climate strategies paid little attention to food

NGOUK9 said that they had been trying to get local authorities to engage with food as part of the Local Authority Climate Emergency response. Within local councils the people who are looking at climate focussed on vehicles, premises and energy. In most cases the new Climate Emergency policy documents did not refer to food or might have a brief reference – for example to reducing food waste. COUNUK3 said that their Council had just declared a Climate Emergency but the Environment Team calculating the councils carbon footprint had ignored food.

NGOUK11 said that in Wales the Welsh government had passed legislation - the Welfare of Future Generations Act – which aimed to embed responsibility for climate and the natural environment in everything done by the public sector. But there was nothing explicit about the climate impact of food – perhaps because this might arouse opposition from Welsh farmers.

5.16 Centralised or de-centralised Kitchens

This section considers the organisation of the public kitchens – centralised or decentralised.. The centralised model has one or more large kitchens preparing food which is transported for consumption over a large geographical area. The

decentralised model has a large number of kitchens preparing food close to where it is consumed. This section relates to Question 15 in the Interview Schedule (Table 19).

5.16.1 Sweden

Six interviews suggested that the direction of travel was mostly away from central kitchens towards cooking closer to the people who will eat the food. KOMSE2, KOMSE5 and KOMSE9 told us that most school food was cooked in kitchens located inside the schools. The head of catering at KOMSE7 told us

I prefer cooking on site. It is better to cook close to the customer – so you can be more responsive. If you cook on site you can cut down the waste. You can quickly cool down left overs, refrigerate and serve them another time (KOMSE7a).

KOMSE8 said that it has 274 production kitchens and around 330 receiving kitchens – where meals produced elsewhere were warmed up, with some making of salads and other small items. The City had two central kitchens set up in the 1990s but the need for these was declining because a political decision had been taken to set up new production kitchens whenever there was a new nursery, school or elderly care facility. KOMSE3 told us:

During the 1990s the City merged a lot of kitchens. But the city has now realized that they didn't actually achieve savings. Food production didn't get cheaper and we got worse quality. Therefore we started to decentralise the kitchens. The City is still trying to decentralise the cooking more by building kitchens close to where the food will be eaten.

On the other hand a very different strategy was being followed by KOMSE14, which planned to reduce the number of kitchens. Existing kitchens had obsolete equipment, inefficient and unsafe. Some old schools were to be demolished – replacing two or three with a single newly built school with a modern kitchen. The kommune planned to create at least five modern kitchens – one in the main town and each of the four satellite villages. Some schools would lose their kitchens and have food brought in using special trollies which keep food warm during transport. Overall it was expected that the number of kitchens in the kommune would fall from 70 to 40.

5.16.2 Denmark

A large central kitchen had been set up to provide meals for children in schools and kindergartens in KOMDK3. It had capacity to cook 6,000 meals per day and was at full capacity. The city subsidised half the cost of the school meals which would have financial implications if there was a sudden increase in the takeup of school meals. City schools often had no space for kitchens or dining halls. In some schools there were small kitchens with ovens which could bake sensitive items like fish to ensure quality, and could also bake off bread prepared elsewhere.

In the 1980s it was thought that centralisation would be cheaper but you also need to factor in the costs of transport to the schools, setting up local kitchen arrangements and the poor quality of much centrally cooked food. In the city there are now 10-12 schools who have their own production kitchens. It is in fact cheaper to run a local kitchen (CONSDK1).

The point about costs was confirmed by the KOMDK3 Catering Manager (KOMDK3d)., In KOMDK3 all new schools had kitchens installed when they were built and if schools were refurbished kitchens were installed whenever possible. So there was a gradual increase in local school kitchens. It would be very costly to do it in 65 schools all at once. The city was reluctant to undertake this expenditure.

The other Danish kommunes interviewed did not operate central kitchens. KOMDK6 said wistfully that having a central kitchen would make it easier for them to buy food from local suppliers because suppliers would only need to make one delivery to the central kitchen.

5.16.3 United Kingdom

5.16.3a Councils with decentralised kitchens

In six large English local authority catering organisations there are decentralised kitchens. COUNUK1 said

We cook close to the customer...A centralised kitchen always means a compromise on quality. Cook chill or cook freeze are not as good as cooking on site. Staff like the interaction with the kids. They feel a sense of ownership of the food – when they talk to the people who eat it who say “this is great”. You get greater flexibility from the staff.

At COUNUK8 ten years ago they had a central kitchen which supplied food to six schools:

We moved everything to cooking on site –which produces better quality. The central kitchen was not a good idea. You have got to over-produce. There is the risk of some food being spilt in transit. Also in order to keep the food warm enough you may have to do it in larger batches (COUNUK8)

At COUNUK5 the Central Production Unit had been closed down two years before. The cost of running it was high and it was decided that it would be better to have production kitchens in every school – which required modest investment in new equipment and upskilling staff to cook food from fresh ingredients. In COUNUK3 the introduction of UIFSM in 2014 led to investment in twenty new kitchens in schools where food had previously been prepared elsewhere. NGOUK5 related how new school kitchens had been installed in their city catering service, which was trying to reduce transport of meals whenever possible. In COUNUK2 there was no central kitchen and most schools had their own kitchen.

5.16.3b England - private caterers using central kitchens

A rather different picture can be seen in COUNUK9 where the local authority school meal service had been closed down years before. This was a large rural local authority where only 45 schools out of 284 had their own kitchens. The rest had to have food transported to them. There were thirty different caterers, many of whom had a central kitchen serving between six and ten schools.

5.16.3c Scotland – differing views on central kitchens

NGOUK3 described how a Scottish city has recently introduced a centralised kitchen as part of a wider reorganisation of the school system – involving closure of smaller

schools and setting up larger scale school campuses. All the new campuses built in the last 5 to 10 years had no cooking facilities and poor quality food was brought in from a central kitchen.

The Scottish civil servant who had run this meal service in previous years was also interviewed and took the view that the poor meal experience was not the fault of the central kitchen but the result of poor menu choices - lots of burgers, sausages and pizzas (GOVTUK1b). He argued that cook freeze can be highly successful in producing good quality food. It can also make it easier for local producers – because they can deliver to the central kitchen. However a cook freeze facility needs to be run it like a factory rather than a conventional school kitchen. It requires a higher level of management professionalism and staff training and discipline. Moreover some food does not freeze or transport well. He declared that it was always preferable for each school to have its own kitchen – so that cooking of the school lunch could be integrated with education and the ethos of the school. However cook freeze could be cheaper and could also produce good quality school food. He added that over the years in Scotland the number of schools with onsite kitchens has declined. There used to be 80% of schools with onsite kitchens and this had fallen to 65%, with meals brought in from elsewhere – perhaps a large cook freeze facility or a big kitchen in a secondary school serving several primary schools.

COUNUK11 who had an overview because they chaired a group of Scottish councils said that she expected to see an increase in CPUs in the future. East Ayrshire – a sustainability leader among Scottish councils – was setting up a Central Production Unit for early years provision and this would make it easier to use local suppliers. “A CPU can enable better local food but must not be at the cost of food quality” (COUNUK11).

NGOUK9 – who worked with Scottish Councils to promote healthy and sustainable food expressed the hope that going forward there would be no more new Central Production Units. It was far better that every school should have its own kitchen so that cooks and children should get to know and learn from each other.

5.17 International comparisons

5.17.1 Coastal fisheries

A Swedish interviewee said that the coastal fishery in Cornwall was an excellent example of success in developing local coastal fishing. This had inspired them to attempt something similar in their part of Sweden (SEREGN1)

5.17.2 Vegetarian food

A Danish NGO campaigning for meat reduction in public catering expressed the view that the UK was well ahead of Denmark in this respect. It is the norm in the UK for there always to be a vegetarian alternative in public meals, whereas this is not the case in Denmark (NGODK2).

5.17.3 Food waste

An expert with knowledge of both countries said that the level of food waste in Swedish schools appeared to be much higher than in the UK (see 5.14.1b above).

5.17.4 UK blocked from adopting the Nordic Approach

A Danish civil servant told us

“We went to New Delhi and we found the people there were more open to trying to implement the Nordic approach than in the UK. We have spoken to UK policy makers - people in Belfast and Edinburgh and the Green Party in London. In India the system is different but they are open to changing. The Brits were curious and want to learn but there are so many things which block them from adopting the Nordic approach (GOVTDK1a).

5.17.5 Scotland ahead of Denmark

A Scottish informant expressed the view that Scotland was well ahead of Denmark.

“Denmark is like the Emperor’s New Clothes. They make a great deal of noise about their achievements. But actually their public meal system is tiny” (GOVTUK1b)]

5.18 Lack of academic research in Sweden

In two cases (KOMSE3 and REGNSE1) Swedish Interviewees said that there had been a lack of academic research into food procurement for public kitchens in Sweden.

Given that Sweden likes to see itself as an international model for public food provision, it is surprising that there is almost no Swedish academic research about this. In Finland by contrast there has been a systematic effort to gather information about public food procurement – directing information gathering and research (REGNSE1).

Chapter Six Discussion & Conclusions

6.1 Outline of this chapter

The final chapter of the thesis is structured as follows: Meeting the research aims and objectives (6.2 – Table 30); Originality and contribution to knowledge (6.3); Limitations of the study (6.4); Recommendations for further research (6.5).

Table 30 Meeting research aims & objectives – Overview

6.2.1	Scope of the research
6.2.2	Scale and quality of public catering (Findings 5.2)
6.2.3	Organic food procurement (Findings 5.3)
6.2.4	Local, regional and national procurement (Findings 5.4)
6.2.5	Scale of food procurement (Findings 5.5)
6.2.6	Logistical arrangements for local food (Findings 5.6)
6.2.7	Free Range & Organic Eggs (Findings 5.7)
6.2.8	Sustainable Fish (Findings 5.8)
6.2.9	Palm oil, Thai Food, Brazilian beef (Findings 5.9)
6.2.10	Innovative Products (Findings 5.11)
6.2.11	Transforming the public kitchen
6.2.12	Seasonal and scratch cooking (Findings 5.12)
6.2.13	Reducing Meat (Findings 5.13)
6.2.14	Reducing food waste (Findings 5.14).
6.2.15	Reducing carbon footprint (Findings 5.15)
6.2.16	Centralised and de-centralised kitchens (Findings 5.16)
6.2.17	Summary of conclusions - Meeting Research Aims & Objectives

6.2 Conclusions - Meeting research aims & objectives

Table 30 provides an overview of the research conclusions in relation to the aims and objectives (paragraphs 1.3.2 and 1.3.3). Sections 6.2.1 to 6.2.16 give details of conclusions for each of the research objectives. Section 6.2.17 provides a summary of the conclusions. Table 31 (after section 6.2.1c) sets out a three country comparison

of public food procurement practices relating to sections 6.2.1 to 6.2.10. Table 32 (after section 6.2.10) provides a three country comparison of changing practices in the public kitchens relating to sections 6.2.11 to 6.2.16.

6.2.1 Scope of the research

6.2.1a Sweden

As regards Sweden the PhD research is the largest combined case study of public catering based on in depth interviews which has ever been done. It can be compared with previous case studies of single kommuner. There have been two papers describing organic food procurement in Malmö (Moragues-Faus & Morgan, 2015; Andersson & Nilsson, 2012). Knutsson & Thomasson (2014) describe local food procurement in the small kommun of Klippan in Skåne. Two academic articles based on large scale surveys of Swedish kommuner provide a broader context with which the PhD research findings can be compared. Granvik (2012) reports on a survey of local food procurement in Swedish kommuner (2.23.6). Post et al. (2008) reports on a survey of catering managers focussing on catering practices – particularly in respect of root vegetables, organic and conventional food and use of processed and semi-manufactured foods (2.23.5).

6.2.1b Denmark

The information collected by the research is a substantial advance on previous knowledge. Previous Danish research included two large-scale surveys of kommuner converting their kitchens to organic food. They described what had happened in municipal kitchens under government policies aimed at encouraging organic food initiated by Social Democrat-led governments in power between 1998-2001 and 2011-2015. Mikkelsen & Sylvest (2012) was based on data collected during 2004, relating to an organic conversion programme funded by the government between 1998 and 2004. Sørensen, Tetens, Løje & Lassen (2016) was based on data collected during

2013-2015, examining the effects of a new government organic conversion programme for public kitchens.

The PhD research examined how public food developed after the 2015 general election, when a right wing coalition held power which had a more negative attitude to organic food than its predecessor. The PhD research also considers developments since the Social Democrats returned to power in June 2019. The research provides a broad picture of public food developments – showing especially how organic food continued to spread notwithstanding the change in government policies. It is based on case studies of six communes plus interviews with four NGOs and two civil servants promoting sustainable food policies, plus three consultants promoting organic conversion in public kitchens and one developing logistical solutions for small food producers.

6.2.1c United Kingdom

As regards the UK, the PhD research collected the data for sixteen detailed case studies of individual local authorities. This is a great deal more than what is available in previous academic literature. The largest scale previous study was Morgan & Sonnino (2008), which presents four case studies of UK local authorities. As regards local authority catering other published case studies have been brief discussions of individual local authorities –Cumbria (Levidow & Psarikidou, 2011) and Brighton (Barnes et al., 2018). Morgan & Morley (2014) describes a social enterprise – Whole School Meals – making school food in Kent. Most recently Morgan & Morley (2021) presents a more detailed account of a single local authority catering organisation, Oldham Council. Between 2006 and 2012 the School Food Trust carried out detailed surveys of school meal provision in England and Wales. These have provided the basis for several academic articles (2.20.2). These reports did not examine procurement practices. No UK academic literature so far has been based on a national survey of public sector school food procurement.

Table 31 Public food procurement - Three Country Comparison

Dimension	Sweden	Denmark	UK
Scale of public catering (6.2.2)	Largest – all schools & pre-school children, elderly (6.2.2a)	Limited. Staff canteens, elderly people, some school & pre-school children (6.2.2a)	England - council school catering shrinking -. Scotland – expansion with more free meals (6.2.2d).
Quality	Stable/improving (6.2.2b)	Stable/improving (6.2.2b)	Declining - England & improving - Scotland (6.2.2d;e)
Outsourcing	Little (6.2.2b)	Little (6.2.2b)	Increasing in England. Very little in Scotland (6.2.2d;e)
Organic food	Fell 39% to 38% (6.2.3a)	Rose from 20.8% to 22.8% (6.2.3b)	Decline – approx. 1% to 0.5% (6.2.3)
Local/regional /national procurement	Rising imports. Buy Swedish. Small scale helps local suppliers (6.2.4a, c)	Fewer imports. National contract – mostly Danish. Some buy local (6.2.4d)	Rising imports. Want to buy local. Scale inhibits local supply. (6.2.4c)
Dynamic food procurement	Tried by a few (6.2.4e)	Rahandel playing similar role 6.2.4e	Possible regional & national projects (6.2.4e; 6.2.6c)
Scale of food procurement	Decentralised (6.2.5a)	National contract; some local (6.2.5b)	Large-scale council/ regional. Or individual schools (6.2.5c)
Logistical arrangements for local food	Coordinated distribution in 45 LAs. Wholesalers (6.2.6a)	Use wholesalers, esp national contract. Future alternative - Rahandel (6.2.6b)	Wholesalers. Few suppliers share transport. Dynamic food procurement may bring change. (6.2.6c)
Eggs (6.2.7)	Organic - mostly	Organic - mostly	Mostly free range eggs
Fish (5.8)	MSC. Some local	MSC fish. Some local.	MSC fish. Some local.
Palm oil (6.2.9a)	Sustainable preferred. 3 avoid	Sustainable preferred	Sustainable preferred (3 LAs)
Thai & Brazil (6.2.9b)	Small quantities	Small quantities	Substantial quantities
Innovative (6.2.10)	Greatest – five products	One project - Plantbased proteins	Insignificant

6.2.2 Scale and quality of public catering (Findings 5.2)

6.2.2a Scale of public catering

In Sweden the fourteen kommunes interviewed all had direct responsibility for large scale catering activities for schools, pre-school children and elderly people. Food was provided free of charge to all children. In Denmark the kommunes interviewed had more limited catering activities – providing food for staff canteens, elderly people and a relatively small number of school and pre-school children. In the UK most of the municipalities interviewed operated large-scale school catering operations.

6.2.2b Sweden & Denmark – stable funding, little outsourcing

In Sweden and Denmark municipal catering operations were relatively stable in terms of levels of public spending and the volume of service users. Food standards in Denmark and Sweden have rarely been compromised by outsourcing. The increase in the percentage of organic food in both countries has signified an improvement in food quality.

6.2.2c United Kingdom – greater financial pressures

In the UK municipal catering operations have experienced much greater financial pressure than those in Denmark and Sweden due to nationally enforced spending reductions.

6.2.2d England – extremely adverse policy environment (Findings 5.2.3)

In England the government has not enforced school nutrition standards and promoted outsourcing of school catering to cheaper private sector caterers. These pressures have produced a “race to the bottom” in school catering in England. Local authority catering organisations have shrunk as schools defected, seeking cheaper catering

operators. The principal marker of school food quality, Food For Life accreditation, has declined. (See 5.2.3d and 5.2.3f above.) Interviews relating to two councils which had dissolved their catering organisations years before - leaving each school to make its own arrangements – highlighted how this had negatively affecting school food quality. Two of the council catering services interviewed have now closed down. (See above 5.2.3c).

6.2.2e Scotland – more favourable government policies (5.2.3g)

A different public policy environment has promoted higher school food standards in Scotland. The Scottish government checks compliance with nutritional standards as part of the school inspection system. It has developed stricter school nutrition standards which came into force in April 2021. Outsourcing of school catering is practically unknown in Scotland. The Scottish government funds the Soil Association to improve school food quality by promoting the Food For Life catering standard and the number of councils with FFL accreditation has risen to 17 out of 32. In May 2021 the Scottish government announced that it would introduce free school meals for all primary school children – injecting additional public money into the school food system. A single interview indicated that the position of school food in Wales is less strong than in Scotland but better than in England (5.2.3h)..

6.2.3 Organic food procurement (Findings 5.3.)

6.2.3a Sweden

In Sweden over the last twenty years there been very substantial growth in organic food usage in public kitchens. A number of kommunes interviewed had achieved high percentages of organic food – between 40 and 60%. Much organic food was imported. There had been a very recent growth in preference for purchasing conventional Swedish food rather than organic food which might be imported. Conventional Swedish food was produced to high environmental and animal welfare standards. There continued however to be strong support for organic food. There had been a shift

from KRAV - the Swedish organic standard - to food produced according to the less demanding EU organic standard. Latest statistics showed that during 2020 organic food in public kitchens fell by 1% to 38% and the percentage of kommuner with organic targets fell to 67% from 88% in 2017. The 2020 figure of 38% still represents a dramatic increase in organic food on the position fourteen years before – when the organic food percentage was around 4% (see 3.2.4 above).

6.2.3b Denmark

Interviews during 2019 showed that consumption of organic food by public kitchens was expected to continue to grow in the future. Organic food was becoming more affordable and available. The pandemic led to a large fall in public food services spending on food but the percentage of organic ingredients rose from 20.8% in 2019 to 22.8% in 2020. The number of Danish kitchens with the organic food badge (Økologiske Spisemærke) continued to increase during 2020.

Organic food in public kitchens can be measured either by weight or by value. If it is measured by weight, statistics will not be comparable to those of other countries where organic food consumption is measured by value. In an elderly care home – for example – if all food is organic apart from meat, fish and cold cuts, the organic percentage will be 85% by weight but only 60% by value (5.3.2b). At least two kommuner have recognised in the last two years that organic statistics based on self reporting by individual kitchens are slightly overstated and have switched to figures supplied by the food wholesaler, Hørkram (5.3.2c). Organic food was argued to be the most climate friendly option – although there was debate about this. Some kommuner however buy little or no organic food. In March 2021 the government created a new budget for training and consultancy to further develop organic and climate friendly food in public kitchens.

6.2.3c United Kingdom (Findings 5.3.3)

In the United Kingdom the PhD research has shown a marked decline in organic food in municipal school caterers in England from a level which was already much lower than in Denmark or Sweden. This can be seen from the very large decline in Food for Life Gold accreditations and organic food sales. The Soil Association's figure for organic food in caterers with FFL of £22m in 2018/2019 was very slightly more than 1% of estimated food purchases by the public sector – particularly in schools and hospitals. But the latest figure of £12m for June 2020 to end of May 2021 is a 53.9% reduction on this figure.

In Scotland the general level of organic food in school caterers is low, although North Ayrshire and East Ayrshire have FFL Gold. The Scottish government has aspirations to increase organic agriculture and food consumption. However Scottish local authorities may prefer to buy local rather than organic food. COUNUK11 have informally suggested to the Soil Association that Food for Life Gold level should be revised to remove the requirement for organic food (5.3.3b).

6.2.4 Local, regional and national procurement (Findings 5.4)

6.2.4a Import penetration – Sweden and UK

In both Sweden and the UK agriculture was perceived to be threatened by increasing import penetration -particularly from countries with lower animal welfare and environmental standards.

6.2.4b Sweden

There was considerable public support for buying Swedish. It was frequently pointed out that all Swedish food producers were obliged to follow Swedish legislation which

required better animal welfare and lower environmental impacts than most imported food. In Sweden local authorities frequently had policies aimed at buying food as locally as possible – from within the kommune boundary or within the region. Or from elsewhere in Sweden. Some kommunes focussed on buying food which was both local and organic. Others preferred to buy conventional food from within Sweden. The small scale of much public food procurement in Sweden could promote close links between individual kommunes and small local producers.. Local suppliers needed support and encouragement to sell to the public sector. There were direct meetings between kommunes and small local suppliers. The LRF (national farmers organisation) worked with KOMSE10 to encourage local supply. E-procurement systems in KOMSE13 were set up in a way which would best assist small suppliers. Two kommunes bought a share in the expected vegetable harvest of small local farmers (*andeljordbruk*). Some kommunes made extensive use of direct procurement to buy from local farmers in amounts below the tender threshold of SKK 615,312 SEK (equivalent to £54,000). However having a large number of direct procurement deals required more staff time than buying all requirements from a single large wholesaler (5.4.1e). Where kommunes wanted to source locally, they frequently encountered difficulties. The demise of local abbatoirs has made it more difficult to source local meat – although one kommune used meat from a mobile slaughterhouse which went round farms. REGNSE3 said that in milk and dairy products Arla was buying up local dairy producers and shutting them down. REGNSE3 also said that they had a vegetable supply deal with a local wholesaler who sourced root vegetables from local farms but this had been taken over and shut down by a national company.

6.2.4c United Kingdom

In the UK there was also interest in purchasing food as locally as possible. This could mean from within the local authority area or the surrounding region or adjoining regions or from anywhere in the UK. Food for Life accreditation awarded caterers points for sourcing food from the region or anywhere in the UK. UK-produced food was generally produced to environmental and animal welfare standards which were superior to most imported food (although not as high as Swedish standards).

There were two councils where substantial amounts of food were being produced within the district but which also relied on the surrounding region. With five councils in northern England a high percentage of school food was being produced regionally. In three cases the councils relied on a large regional wholesaler which sourced fruit and vegetables from within the region whenever they were seasonally available and imported these when no UK produce was available.

The comparatively large scale of most public food procurement in the UK tended however to reduce the emphasis most local authorities placed on dealing with small local producers. In Scotland there is a national food contract but each council has discretion to buy from local producers if it so chooses. COUNUK11 in Scotland described intensive efforts to buy locally. This was also the case with COUNUK3 in England which was the one council with Food for Life Gold and was buying organic produce from a local community garden. Two councils in Scotland and two in northern England struggled to source food locally due to the absence of local producers. The declining number of abattoirs was mentioned by one informant as an obstacle to local meat purchasing. Lack of vegetable washing equipment was mentioned as an obstacle to procurement from small growers in Greater Manchester.

6.2.4d Denmark

The Danish situation was rather different to the UK and Sweden. Denmark is a major food exporting nation. Several kommunes were happy to rely on the national contract. This provided a reliable supply of high quality and affordable food, both organic and conventional – with Danish producers being used whenever possible. Kommunes did have the opportunity to opt out of the national contract in respect of specific foods which they wished to source locally. KOMDK6 had adopted this approach with the intention of buying local fruit and vegetables for the municipal kitchens. However small local suppliers had struggled to handle the logistics of delivery to kitchens scattered around the kommune. KOMDK6 would have liked to source local milk and yogurt but this was very difficult due to the increasing concentration of the dairy industry, dominated by Arla. KOMDK1 and KOMDK4 decided to stay out of the national contract altogether due to aspirations to source food locally. KOMDK1 was successful

in sourcing a food locally for its modest kitchen requirements, with logistics provided by a social services project using disabled people. KOMDK4 directed each kitchen to make its own purchasing arrangements in the hope that they would source food locally. However this hope had been frustrated by the difficulty in organising the distribution of small quantities of food by small food producers to local kitchens. Many of these kitchens were now purchasing through the national contract. However there were hopes that in the future the new local food platform, Råhandel, would help municipal kitchens buy from small local food producers.

6.2.4e Dynamic Food Procurement

The introduction of dynamic food procurement has potential to promote greater local purchasing. In Sweden it has been tried by a few small kommuner. In the UK however it is intended to run a regional pilot and then to roll it out nationally. This technology is hardly used in Denmark but Råhandel has potential to perform a similar role.

6.2.5 Scale of food procurement (Findings 5.5)

6.2.5a Sweden

In Sweden public food procurement is relatively decentralised. This can be seen from the relatively small scale of organisations tendering for food supply. Even small local authorities may break down procurement still further through lotting.

6.2.5b Denmark

In Denmark four of the kommuner interviewed had signed up to the national food contract awarded in November 2016. One of these took advantage to a limited extent of the provision that it could opt out of the national contract to buy local fruit and vegetables. The other two kommuner interviewed had opted out of the national contract. KOMDK1 carried out procurement for all kitchens together. KOMDK4 instructed each nursery to make its own procurement arrangements in the hope that

they would be able to source food locally. In practice however many eventually decided to buy through the national contract.

6.2.5c UK

In the UK, most English local authorities interviewed were involved in relatively large scale food contracts – population sizes ranged between 200,000 for an individual local authority and 2.2m for a regional consortium. Where lotting was practised, the size of lots was generally too large for most local suppliers – individual councils with populations between 200,000 and 400,000. On the other hand two English local authorities had dissolved their catering organisations, leaving each school to make their own food arrangements (NGOUK1b; COUNUK9). In Scotland councils can buy food through a national contract covering 5.4m people but also have discretion to buy locally. COUNUK11 in Scotland breaks procurement from local suppliers into small lots – a different meat supplier for each island.

6.2.5d Implications of Dynamic Food Procurement

Dynamic food procurement projects in the UK and Sweden have the potential to break down procurement so as to open up opportunities to small suppliers (see 5.4 above).

6.2.6 Logistical arrangements for local food (Findings 5.6)

6.2.6a Sweden

In Sweden coordinated goods distribution projects have been set up in 45 Swedish kommuner. These handle distribution of food for schools, nurseries and elderly care. As such they diminish the role and corresponding market power of the large wholesalers (See above 3.2.20). These projects have produced environmental and cost benefits by reducing the number of vehicle movements required to supply the public kitchens. Such projects are also intended to support small local suppliers by

enabling them to deliver their food to the distribution centre rather than to every public kitchen in a kommune. However success in this respect has been limited (5.6.1c).

6.2.6b Denmark

In Denmark the public sector market is dominated by Hørkram, the large wholesaler which has been awarded the national public sector food contract. Kommunes which are outside the national contract in most cases buy either from Hørkram or Dansk Kater. One start up business, Råhandel, has developed a software platform which enables small food producers to sell their produce to restaurants and public kitchens. Producers transport the food to Råhandel collection points, from where it be transported to the end user. This new business presently operates on a small scale but has aspirations for rapid growth and provision of a service throughout Denmark

6.2.6c United Kingdom

In the UK local authorities studied were very largely dependent on purchasing from large wholesalers. Two local authorities – COUNUK1 and COUNUK5 – were parties to a large sub-regional contract which permitted local authorities to nominate specific products which wholesalers were required to transport for a fixed fee. COUNUK11 in a remote rural area had enabled a small cheese producer to supply local schools by encouraging the fruit and vegetables wholesaler to assist with deliveries. The proposed dynamic food procurement arrangement could transform the situation – opening up opportunities to small local suppliers. It is envisaged that food traded through the software platform will be distributed to end users by a logistics contractor, bypassing wholesalers.

6.2.7 Free Range & Organic Eggs (Findings 5.7)

Organic eggs were widely purchased in both Swedish and Danish public procurement. In both Denmark and Sweden there were also kommunes which bought non-organic free range eggs from local producers. One Swedish interview expressed concerns

about whether chickens producing organic eggs were receiving adequate nutrition. In the UK the majority of councils purchased free range eggs – this was one of the basic Food for Life requirements. Two interviews referred to purchasing of caged eggs

6.2.8 Sustainable Fish (Findings 5.8)

Research showed that in all three countries municipalities sought to buy fish bearing the MSC logo. This is perhaps to be expected since MSC-labelled fisheries have an abundant fish population and thereby one might expect their fish to be more affordable for public kitchens. Support for local fisheries was mentioned in respect of specific areas in the UK (South West England) Sweden and the Danish coast (Sjælland). Interviews referred to the need for staff to be properly skilled to be able to cook the fish. Landbased recirculating fish farming was mentioned only in Sweden – where it was hoped that Swedish public kitchens would buy the fish once production had commenced.

6.2.9 Palm oil, Thai Food, Brazilian beef (Findings 5.9)

6.2.9a Palm oil

Three Swedish kommuner avoid sourcing products containing palm oil. Martin & Servera buys products containing sustainable palm oil and encourages suppliers to use other oils. In Denmark the national contract requires purchase of sustainable palm oil. KOMDK3 tries to minimise palm oil usage and to buy sustainable palm oil. In the UK three councils only purchased sustainable palm oil.

6.2.9b Thai food & Brazilian beef

A small amount of Thai chicken was imported into Sweden. Three Swedish kommuner did not buy Thai chicken due to concerns about working conditions. Martin & Servera and Menigo support an initiative to improve working conditions in Thailand A small

amount of Thai chicken was also imported into Denmark and mainly sold into the private sector. Very little Brazilian beef was imported into Denmark or Sweden and there was little or no usage in public kitchens. By contrast in the UK substantial amounts of Thai chicken and Brazilian beef were used in UK food service, including schools.

6.2.10 Innovative Products (Findings 5.11)

The link between public procurement and innovative products was greatest in Sweden, where five innovative products were being supported through public purchasing: wild boar; coastal fish; land-based fish, climate friendly rolls and organic legumes (5.10.1) In Denmark there was a national project promoting plant-based protein in large kitchens. In the UK there was a single speculative reference to trying out insect-based food in a school kitchen. It would appear that the Swedish public meal system is willing and able to work with innovative food suppliers. The much smaller and less well funded Danish public meals also have some capability in this respect. It would by contrast appear that the English school caterers are too preoccupied with day to day survival to have much time to spare on trying out new products

Table 32 Transforming the public kitchens – Country Comparison

Dimension	Sweden	Denmark	UK
Seasonal & scratch cooking (6.2.12)	Increasingly practiced	Increasingly practiced	Increasingly practiced
Reducing meat (6.2.13)	Widespread practice	Widespread practice. But not everywhere (6.2.13b)	Widespread practice-
Vegetarian alternative every day (6.2.13b)	Practiced in all kommunes interviewed	Many kommunes only offer a meat-based meal.Lawsuit under way.	Practiced in all councils interviewed
Meat reduction – govt guidance (6.2.13c)	Since 2013 guidance recommends meat reduction	Early 2021 – guidance recommends meat reduction	England – no guidance. Scotland – guidance to reduce meat, early 2021.
Reducing food waste (6.2.14)	Widespread practice	Significant level of work.	Less interest overall. Some activity but others deny problem
Reducing carbon footprint(CF) (6.2.15)	Measurement of CF widespread practice (8/14) Two use software to measure CF of each recipe	Measurement of CF not widespread. One interviewee has done this based on annual spend. Aspirations.	Measurement of CF not widespread. One interviewee has done this based on annual spend. Aspirations.
Centralised and decentralised kitchens (6.2.16)	Trend to decentralise kitchens. Exceptions (KOMSE14 5.16.1).	Trend to decentralise kitchens	Trend to decentralise kitchens. Exceptions (GOVTUK1B; COUNUK11)

6.2.11 Transforming the public kitchen

There are marked similarities between the approach adopted in all three countries over the previous fifteen years. In all three countries there has been a move to seasonal and scratch cooking (6.2.10) reducing meat (6.2.11) and reducing food waste (6.2.12).

6.2.12 Seasonal and scratch cooking (Findings 5.12)

In all three countries there has been a movement within public kitchens towards increased scratch cooking and seasonal menus. This has entailed increased training and responsibility for catering staff. UK caterers with Food for Life accreditation are inspected annually by the Soil Association to confirm that they have seasonal menus, at least 75% of dishes prepared from fresh ingredients and that they have invested in staff training (5.11.3). In Denmark and Sweden interviews confirmed adoption of seasonal menus, cooking from fresh ingredients and retraining of staff – or hiring of new staff with the necessary skills. In Denmark and Sweden there appeared to be a somewhat greater emphasis than in the UK on cooking with local root vegetables during the winter and early spring (5.11.1; 5.11.2).

6.2.13 Reducing Meat (Findings 5.13)

In all three countries there has been a move to reduce the quantity of meat served in public catering. Resulting financial savings have helped finance increases in organic food. The phrase “less meat, better meat” can be applied to public catering in all three countries. In all three countries there is awareness that reducing meat is an important way to reduce the overall carbon footprint of public meals. The extent to which public caterers are able to measure this reduction is discussed in 6.2.12 below.

6.2.13a Meatfree days and/or reformulating recipes

Meatfree days have been a widespread practice in Sweden and certain communes in Denmark and have become increasingly frequent in the UK. Catering managers frequently avoided public declarations of meatfree days because this could stir up opposition from parents. They focussed on providing tasty, nutritious food which was meatfree or contained a small proportion of meat. Catering managers in all three countries have also reformulated meatbased recipes so as to replace at least some of the meat with plantbased ingredients – legumes, soya or quorn.

6.2.13b Vegetarian alternatives

In the UK it was normal practice whenever a meatbased meal is on the menu that a vegetarian alternative would also be offered. This appeared to be the case also in Sweden. In Denmark by contrast there were an appreciable number of public kitchens which only offered meatbased meals. The Danish government has left this to the discretion of individual communes. There were ongoing preparations for legal action to resolve whether Danish citizens should have the right to a plantbased meal in the public kitchens.

6.2.13c Government guidance

In Sweden there has been longstanding government guidance advising public caterers to reduce the amount of meat (Livsmedelsverket, 2013). In Denmark new guidance on food was issued at the beginning of 2021 which called for a reduction in meat consumption on health and climate grounds - a big departure from current consumption patterns. Also in early 2021 the Scottish government issued new school meal standards obliging school caterers to reduce meat and increase vegetables. The move by public sector caterers in England to reduce meat usage has been justified on grounds of health and climate – as well as producing financial savings. There has

not however been any government move to revise the English School Food Standards in this respect.

6.2.14 Reducing food waste (Findings 5.14).

In all three countries there have been moves to reduce food waste. The research showed that Swedish *kommunes* were engaged in a great deal of activity aimed at reducing food waste. In Denmark there was a significant level of work on food waste reduction. In the UK there have been some waste reduction projects. FFL Silver and Gold require the caterer to show they are reducing waste, but not FFL Bronze. However in the UK the overall level of interest in waste reduction was less. And several UK interviews said that food waste was not a major problem. An individual with experience of both countries believed that the level of food waste was much higher in Swedish schools compared to UK schools (5.13.1b).

6.2.15 Reducing carbon footprint (Findings 5.15)

In Sweden one regional authority and seven *kommunes* (out of fourteen) were engaged with quantifying the climate impact of public kitchens. Two *kommunes* have purchased an expensive software module which enables them to calculate the carbon footprint of every recipe and to assess how it changes if the ingredients are varied. The others have continued with the simpler method of calculating carbon footprint based on looking at their overall food purchases over a time period such as a year and assigning a carbon value to every product purchased. The Swedish Procurement Agency has collected statistics from 164 *kommunes* which shows the declining climate impact of public sector food purchases (5.14.1d). The Ekomatcentrum has introduced a league table giving the top ten *kommunes* ranked by organic food and climate performance (5.14.1e).

In Denmark calculation of carbon footprint was not yet a widespread practice. The one consultant who said they were able to do this made these calculations based on annual spend (CONSDK3a). KOMDK3 has had aspirations to start measuring its carbon

footprint since May 2019. However in August 2021 the kommune was still looking at the right software to measure the climate impact in the kitchens. “In Denmark there is not really an agreement on how to measure it” (KOMDK3d).

In the UK one council said that they had worked with a local university to calculate the carbon emissions of their existing menu and developed a new menu with more plantbased recipes. The new menu had 36% lower greenhouse gas emissions. The catering software widely used in UK school kitchens - Nutmeg and Saffron – does not have the capability to generate the carbon footprint for specific recipes. COUNUK11 said they chaired a group of Scottish councils who were working with a university to develop software to calculate the carbon footprint of menus.

6.2.16 Centralised and de-centralised kitchens (Findings 5.16)

In all three countries most interviewees said that the direction of travel was away from large centralised kitchens towards smaller kitchens located close to where the food would be eaten. The criticisms of centralised kitchens were that they were more costly and promoted higher levels of food waste. Decentralised kitchens meant that cooks had a closer relationship with adults or children who eat the food. In both Sweden and the UK there were however catering managers saw considerable operational advantages in establishing new central kitchens

6.2.17 Summary of conclusions - Meeting Research Aims & Objectives

As regards public food procurement, the main conclusions are:

- In Sweden and Denmark municipal catering was relatively stable in terms of public spending and user volume. The increase in the percentage of organic food signified improving food quality (6.2.2b).
- In England local authority catering organisations have shrunk as schools defected to cheaper, lower quality private caterers (6.2.2d)

- In Scotland school catering remained under local authority control and government has taken steps to improve quality and inject cash by introducing universal free school meals (6.2.3c).
- In Sweden the percentage of organic food rose from around 4% in 2004 to 39% in 2019. During 2020 the percentage fell to 38% - reflecting an increased preference for buying Swedish food (6.2.3a).
- In Denmark consumption of organic food rose from 20.8% in 2019 to 22.8% in 2020 (6.2.3b).
- Organic food in Danish public kitchens was sometimes measured by weight and sometimes by value. Where it was measured by weight, this could not readily be compared with other countries where it was measured by value (6.2.3b).
- In the UK organic food in public catering has fallen steeply from a level already much lower than in Denmark or Sweden (6.2.3c).
- In both Sweden and the UK agriculture was threatened by growing imports (6.2.4a).
- In Sweden there was strong support for buying Swedish food , while also aspiring to source organic whenever possible.. The decentralisation of public procurement meant that many local authorities were able to pursue a variety of buy local policies – working with local suppliers both organic and conventional (6.2.4b)
- In the UK there were also local authorities which sourced locally but the large scale of most procurement reduced contacts with local producers (6.2.4c; 6.2.6c).
- Denmark is a major food exporter. There is a national food contract run by a large wholesaler, Horkram, which provides a reliable supply of high quality and affordable food – both organic and conventional, The food is sourced from Denmark whenever possible.. Most kommuner buy through the national contract. There are some however which have buy locally (6.2.4d; 6.2.5b).
- In Sweden public food procurement is decentralised (6.2.5a;)
- In Denmark most kommuner have signed up to the national contract but a minority buy locally (6.2.5b).
- In Sweden coordinated distribution projects have been set up in 45 municipalities. These projects have produced environmental benefits by reducing

vehicle movements. These projects are also intended to support small local suppliers but success has been limited (6.2.6a).

- Other Swedish municipalities depended on large wholesalers for food distribution as did almost all Danish and UK municipalities (6.2.6a; 6.2.6b; 6.2.6c).
- Dynamic food procurement has been proposed in the UK as a means of opening up opportunities to small, local suppliers – combining a procurement portal with a logistics provider. (6.2.4e; 6.2.5d; 6.2.6c) .
- Dynamic food procurement has been tried in Sweden by a few small communes (6.2.4e).
- In Denmark several communes were hopeful that the new local food platform, Rahandel, would help municipal kitchens buy from small local producers. It combined a procurement portal with a logistics provider (6.2.4d; 6.2.6b).
- Organic and free range eggs were widely purchased in Denmark and Sweden. In the UK a majority of councils bought free range eggs (6.2.7).
- In all three countries municipalities sought to buy MSC fish and there was some procurement of local fish (6.2.8).
- Municipalities – particularly in Sweden – avoid palm oil and others require certified sustainable palm oil (6.2.9a).
- Small amounts of Thai chicken are imported into Sweden and Denmark. Sweden supports initiatives to improve working conditions in Thailand. Very little Brazilian beef was imported into Denmark or Sweden and there was little or no usage in public kitchens. By contrast in the UK substantial amounts of Thai chicken and Brazilian beef were used in UK food service, including schools (6.2.9).
- Swedish municipalities were most inclined to purchase innovative products. There was a Danish project promoting plant-based foods. UK school caterers showed least interest in innovative products (6.2.10)

As regards transformation of public kitchens, the main conclusions are:

- Seasonal and scratch cooking are increasingly practised in all three countries (6.2.12)
- Reducing meat is a widespread practice in all three countries

- It is normal practice in both the UK and Sweden to offer a vegetarian alternative whenever a meat-based meal is on the menu. However this is not the case with many Danish local authorities and there is pending litigation which will challenge this (6.2.13b)
- Since 2013 there has been government guidance in Sweden recommending that school kitchens should reduce the amount of meat served. Similar guidance was published in Denmark and Scotland early in 2021. No such guidance has been published in England (6.2.13c).
- Reducing food waste is a widespread practice in Swedish public kitchens, promoted by national government. There has been a significant level of work on reducing food waste in Danish public kitchens. There has been less interest in reducing food waste in the UK. There has been some activity but others deny that food waste in public kitchens is a significant problem (6.2.14).

Tables 31 and 32 sum up the research conclusions. Table 31 sets out a country comparison of public food procurement. Table 32 summarises the country comparison of the transformation of the public kitchens.

6.3 Conclusions - Originality and contribution to knowledge

The research is the first three way comparison of Denmark, Sweden and the UK. It has provided many insights which are not to be seen in previous academic literature.

Table 33 Originality & Contribution to Knowledge - Overview

6.3.1	Scale and quality of public catering
6.3.2	Organic food in public sector
6.3.3	Organic food – is Denmark or Sweden the leader?
6.3.4	Local/regional and national food
6.3.5	Scale of food procurement
6.3.6	Logistical arrangements for local food supply
6.3.7	Eggs
6.3.8	Sustainable Fish,
6.3.9	Palm Oil, Thai food, Brazilian beef
6.3.10	Supporting innovative suppliers
6.3.11	Scratch & seasonal cooking
6.3.12	Reducing Meat
6.3.13	Reducing food waste
6.3.14	Reduction in carbon footprint
6.3.15	Centralised or de-centralised kitchens
6.3.16	Summary of Conclusions - Originality & Contribution to Knowledge
6.3.17	A framework for analysing sustainable food procurement

6.3.1 Scale and quality of public catering

6.3.1a Denmark & Sweden

This section is very largely original. The discussion of levels of public spending in Sweden and Denmark in recent years and the conclusion that food standards have rarely been compromised by outsourcing is not mentioned in academic literature. The small scale of public catering in Denmark compared to neighbouring Sweden has been referred to by Husby, Sorensen, & Eis, (2011, p.4) but not more recently.

6.3.1b United Kingdom

Morgan & Morley (2014) presents the case study of Kent-based Whole School Meals, a community-based social enterprise mostly owned by local schools and a possible model which other localities should imitate. The PhD research identified a similar case study in a different part of England. The city school catering organisation had been handed over to an independent company which was jointly owned by the council and the schools it served (NGOUK5 – see 5.2.3g).

The PhD research provides a detailed update on increasing problems for local authority caterers in England during the years 2017 to 2021. This development was anticipated by Morgan & Morley (2014). These problems have been further discussed by Morley & Morgan (2021) which is a case study of a single local authority, Oldham Council, praising its success in maintaining high standards of school food, notwithstanding an increasingly difficult environment. Morgan & Morley refer to council budget cuts and the government granting greater budgetary autonomy to schools, enabling lower cost commercial providers to poach schools from municipal catering, causing further financial pressures. There is a very similar discussion of Oldham Council in Morgan (2020). For further discussion of Morgan & Morley (2021) in the context of Oldham's decision to abandon Food for Life Gold see 6.3.2 below.

The PhD research showed that the defection of schools from municipal catering organisations to cheaper – albeit poorer quality - alternative providers was a very widespread trend affecting almost all the English municipal catering organisations discussed in interviews. It threatened their continued survival.

In Scotland a different public policy environment has been promoted by the Scottish Government which had potential to improve school food standards. Key developments during 2021 are described in the research - revised school nutrition rules, universal free school meals (UFSM), growth of Food for Life and organic food policy (para 5.2.3g). The proposed introduction of UFSM was referred to in Chambers, Boydell,

Ford & Eadie, 2020) discussing introduction of UIFSM in Scottish councils during 2014. Otherwise these changes were too recent to be covered in academic literature.

6.3.2 Organic food in public sector

This section is very largely original. It represents a significant addition to information already available in academic literature about public procurement of organic food in Denmark, Sweden and the UK and other countries.

6.3.2a Sweden

There has until recently been almost no academic literature describing the remarkable growth of organic food in Swedish public kitchens. Rundgren (2016) refers in a single paragraph to the Swedish government policy adopted in 2006 of 25% organic food in public kitchens, that 27 communes and 8 counties had achieved this target and that three communes were above 40%. Lindström et al. (2020) uses statistical datasets to relate municipalities' organic food policies to increases in organic agricultural land (2.23.13).

The PhD research is highly original in that it is the first academic study to involve interviews with decision makers in fourteen communes as well as regional organisations and NGOs. It captures the views of people who were mostly in favour of more organic food in public kitchens but also some who preferred to prioritise local food.

6.3.2b Denmark

The growth of organic food in public kitchens in Denmark has had a higher profile in academic literature than in Sweden. Danish achievements are highlighted by Mikkelsen & Sylvest (2012) and Sørensen, Tetens, Løje & Lassen (2016). The City of Copenhagen declared publicly that it aimed to serve 90% organic food in its public

kitchens by 2015. By mid-2016 it stated that it had virtually achieved this aim with 88% organic (Copenhagen City Council, 2016). The claim has received wide international publicity. It has been repeated in academic articles about food procurement in Copenhagen. Lassen, Nordman, Christensen, Trolle (2021) gives the organic share as a percentage of weight as 87% (2021, p.3). See also European Commission (2014). Swensson & Tartanac (2020, p.215), Walton & Hawkes (2020, P.6) and Parsons & Barling (2021).

The PhD research makes an original contribution in that it examined how public food developed after the 2015 general election, when a right wing coalition came to power which had a more negative attitude to organic food compared to its predecessor. It shows how organic food continued to spread notwithstanding the change in government policies.

6.3.2c United Kingdom

As regards organic food in municipal kitchens, there has been little discussion in academic literature. Morgan & Sonnino (2008) makes brief reference to organic food in two of the four case studies - East Ayrshire and South Gloucestershire. The two university case studies of Food For Life both refer to procurement of organic food (Brindley & Oxborrow, 2013; Stahlbrand, 2016).

The case study of Oldham Council (Morgan & Morley, 2021) emphasises the achievements of Oldham Council in retaining FFL Gold despite difficult circumstances. This paper was however overtaken by events. It was published on 12th March 2021 but by October 2020 Oldham Council had decided to abandon Food for Life accreditation (Email from Oldham Council, 16 Oct 2020). The paper also stated that Oldham was one of only five local authority caterers in England to hold FFL Gold. This may have been a correct figure for the number of FFL Gold councils at the time when the paper was being written. Morgan & Morley however do not consider change over time in FFL Gold accreditation. Nine English local authority caterers were all or most

schools had Food for Life Gold were reported by the Soil Association in January 2018 (Table A4.3). So a figure of five represented a substantial decline.

The PhD research revealed that by October 2021 the number of English local authorities where all or most schools had Food for Life Gold had fallen to one, Leicestershire. The PhD research also quotes Soil Association figures showing a very major decline in organic food spending under the Food for Life scheme took place between April 2019 and June 2021. The collapse of organic food in school catering and the decline over the last three years of Food For Life accreditation - the principal marker of school food quality - are recent developments which have up till now had virtually no coverage in academic literature.

6.3.2d Wider international picture

The PhD research findings can also be seen in the wider international context of public procurement of organic food which is discussed in 2.8.4 above. It can be seen that Denmark and Sweden were leaders within a group of countries with relatively high and increasing usage of organic food in public kitchens. Other countries in this group were Finland (Risku-Norja & Løes, 2017) and Italy (Morgan & Sonnino, 2008) . In Germany there are aspirations in certain cities to achieve a high level of organic food (see above 2.8.4f). The USA and Brazil are similar to the UK in that much lower levels of organic food are being procured by the public sector (Motta & Sharma, 2016; Lyson, 2016; ,Soares et al., 2017).

6.3.3 Organic food – is Denmark or Sweden the leader?

The growth of organic food in public kitchens in Denmark has had a higher profile in academic literature than in Sweden. However the Danish methodology of measuring organic food by weight means that Copenhagen's declared 88% organic percentage cannot be compared with that of any other city which measures the organic percentage by value – as is universally the case in Sweden (See 5.3.2b above). It is likely that the five Swedish communes who have gone above the government target of 60 per

cent organic by value will be close to the same level of organic as Copenhagen (Ekomatcentrum 2021, p.5). These five kommuner are Lund, Malmö, Örebro, Trosa and Södertälje but of these only Malmö's achievements have received recognition in academic literature (Andersson & Nilsson, 2012; Moragues-Faus & Morgan, 2015). A better index of the Danish level of achievement with organic food in public kitchens is to be found in the Ekoweb report which showed that organic food in public kitchens was 38% in Sweden and 26% in Denmark (Ekoweb, 2019a, p.19 ; Ekomatcentrum, 2019b, p. 14) This reflected regional variation in organic food usage in Danish food service, which was concentrated in the Capital and Central regions (Table 11). It can be concluded that in comparison to Denmark, Swedish achievements with organic food are greater, even though they have been less reported in academic literature. Two of the Swedish organisations interviewed referred to the paucity of Swedish academic literature about the country's achievements with organic food (5.18).

6.3.4 Local/regional and national food

This section represents a significant addition to the limited academic literature about public procurement of local/regional food, particularly the significant difficulties which are encountered by public bodies which seek to buy locally. The academic literature about public food procurement in Finland, Germany, Italy, USA and Brazil provides some discussion of these difficulties. On Finland see 2.9.7a above: Korhonen et al 2017; Lehtinen, 2016; Muukka et al, 2008; Risku-Norja & Loes, 2017. On Germany see 2.9.7b above: Doernberg et al. (2016) and Braun et al. (2018). On the USA see 2.9.7c above: Motta & Sharma, 2016; Izumi, Wright & Hamm, 2010a; Lehnerd et al. (2018); Watson, Treadwell, & Bucklin (2018). On Brazil see 2.9.7d above: Soares et al. (2017) and Wittman & Blesh, (2017).

6.3.4a Sweden

As regards Sweden the major piece of academic literature on local food procurement is Granvik (2012) which reports on a survey of 218 Swedish kommuner, 113 of which had implemented one or more measures to encourage local food procurement, such

as a local food policy (12%), revised procurement practices such as division of contracts into lots (38%), communication with local producers (31%), co-ordinated distribution (8%). Nine kommuner (4% of total) had implemented all four of these measures (4%).

Granvik (2012) did not explore public procurement of organic food. The PhD research showed that Swedish municipalities seeking to purchase large quantities of organic food were faced with the dilemma outlined by Smith et al. (2016) that municipalities may have to choose between sourcing imported organic food or conventional food from local suppliers. The PhD research discusses how some kommuner sourced food which was both organic and local, some were sourcing food from conventional local farmers and others were choosing to import organic food. The Ekomatcentrum has encouraged purchasing of food which is both Swedish and organic by ranking kommuner in terms of both purchases of organic food (Ekomatligan) and Swedish organic food (Svekoliga). See 3.2.8 above and Tables 7 and 8. There have been Swedish initiatives to promote local production of organic legumes, with a view to reducing future imports (5.11.1d).

The PhD research provides a more detailed picture of how local authorities reached out to small local food suppliers. Methods included direct procurement, working with the LRF farmers organisation and with wholesalers, who undertook to buy from local farmers. E-commerce might be set up to facilitate purchasing from small farmers. The kommuner might buy a share of the harvest (*andeljordbruk*). The PhD research also explores in some detail a topic very briefly alluded to by Granvik – that a kommuner seeking to source food locally may have difficulty finding suitable suppliers (6.2.3b).

6.3.4b United Kingdom

Academic literature shows that there has been longstanding interest in local food procurement among UK councils (Morgan & Sonnino, 2008; Levidow & Psarikidou, 2011). Morley & Morgan (2021) made reference to Food For Life awarding points for regional food sourcing and to Oldham Council sourcing food through a Greater

Manchester consortium along with five other Councils. Morgan & Sonnino (2008, pp.126-127, 130-133) refers to some of the obstacles to purchasing from local suppliers – such as higher prices, inadequate volume and the need to modify products to make them suitable for school kitchens. This topic is further discussed by Brindley & Oxborrow, 2013 (2.20.5).

The PhD research confirmed that with UK councils there was widespread interest in purchasing food as locally as possible. It showed that many councils were involved in regional or subregional consortia which bought food from within the region when it was seasonally available. Certain councils were particularly active in local/regional food sourcing: COUNUK3, COUNUK11 and NGOUK5. The PhD research also mentions obstacles to regional sourcing which are not mentioned by Morgan & Sonnino – such as the closure of local suppliers and lack of infrastructure such as abbatoirs and vegetable washing facilities.

6.3.4c Denmark

As regards Denmark the only discussion in academic literature of local food procurement relates to a single Danish school (Ruge & Mikkelsen (2013). There has been no other discussion in academic literature of the considerable efforts of some Danish local authorities to source food locally or of the national food contract in Denmark introduced in November 2016.

6.3.4d Dynamic purchasing (food procurement)

Academic literature referring to dynamic purchasing systems is very limited (Özbilgin & Imamoğlu, 2011; Eyo, 2017). Academic literature so far makes no reference to developments in the UK during 2020 and 2021 developing proposals for a national system of dynamic food procurement in the UK. Nor does it refer to recently established dynamic food procurement projects in Sweden. There has been no published academic literature relating to the newly established Danish local food

platform Råhandel (5.6.2d). The research describes how this platform may be able to assist small local food producers to sell to the public sector.

6.3.5 Scale of food procurement

Knutsson & Thomasson (2014) is a case study of a small Swedish kommune which has encouraged local food sourcing adopting policies which discouraged the larger wholesalers from tendering – particularly by breaking up the food requirement into a large number of separate tenders. Morley & Morgan (2021) refers briefly to the Greater Manchester procurement consortium of six councils which have joined together to secure lower prices and better value from suppliers. Otherwise academic literature hardly seems to refer to the differing scales of public procurement in the three countries - as discussed in 6.2.5 above – and this discussion is an original contribution to knowledge.

6.3.6 Logistical arrangements for local food supply

6.3.6a Sweden

The PhD research adds to previous academic publications relating to Swedish coordinated distribution projects. See above 2.23.10 particularly Moen (2014) Bjorklund & Gustaffson (2015) and Bjorklund, Abrahamsson & Johansson (2017). The PhD research showed that there could be differing views about the reliability of the delivery service offered by these projects (5.6.1b). The research also confirmed that coordinated distribution projects were successful in meeting environmental goals. However these projects were not always successful in encouraging local suppliers (5.6.1c).

The PhD research also brought up to date the small amount of academic research relating to the legal disputes between Swedish local authorities trying to procure Swedish food for their kitchens and wholesalers arguing that this was contrary to EU

procurement law (Hettne, 2013; Pedersen, 2011). It showed that the incidence of legal disputes had fallen very substantially and wholesalers were much more inclined than previously to accommodate local authority requests for food complying with Swedish environmental and animal welfare rules. See above 2.23.6 and 3.2.19.

6.3.6b Denmark

The new Danish local food platform Råhandel provides a logistics service to deliver food to customers. See discussion under 6.4.3b.

6.3.6c United Kingdom

In UK academic literature there have been two brief references to separation of distribution and supply. See above 2.20.1 particularly Morgan & Sonnino (2008) and Levidow & Psarikidou, 2011. The research adds to the picture by describing how local authorities could arrange for larger suppliers to provide a distribution service for smaller companies (5.6.3a). However none of the councils interviewed had put in place a separate distribution contractor to provide a transportation service for foods supplied by other suppliers – an approach which had been pioneered by Lancashire County Council. See 3.4.7 above.

6.3.7 Eggs

The research makes a small contribution to academic literature relating to eggs in public kitchens – a topic which has been practically unmentioned up till now except for very brief references, for example in Goggins & Rau (2015) and Morley & Morgan (2021).

6.3.8 Sustainable Fish,

The research provides a modest addition to the very limited academic literature on public procurement of fish. Morley & Morgan (2021) and Brindley & Oxborrow (2013) make brief reference to purchasing of MSC Fish, which is one of the requirements of Food for Life accreditation. The PhD research showed that several municipalities bought MSC fish and none reported buying fish which was not MSC-approved. There were three regions where municipalities were able to buy local fish. The fish marketing project described by REGNSE1 appears to be an example of the localised public procurement policies proposed by Urquhart & Acott (2013) which aim to give fishermen an increased return on their catch. Bianchini, Muzzini & Pagliarino (2010) describes an Italian pilot project which experimented with serving rainbow trout produced through aquaculture in a public canteen. In Sweden there was an interview with a startup landbased recirculating fish farming project which had aspirations to sell into public procurement.

6.3.9 Palm Oil, Thai food, Brazilian beef

There has hitherto been no academic literature on public procurement of any of these products in Sweden, Denmark or the UK. The research indicates that some municipalities – particularly in Sweden – avoid buying palm oil and others require certified sustainable palm oil (6.2.7a). There are also concerns about imports of Thai food and Brazilian beef (6.2.7b).

6.3.10 Supporting innovative suppliers

This section represents a significant addition to information already available in the very limited academic literature about public procurement of innovative food products – a single study from the UK discussing purchase of sausages for school kitchens (Morley, 2020 – see above 2.20.6). The research indicated that Swedish municipalities were most inclined to purchase innovative products such as wild boar,

coastal and landbased fish and Swedish organic legumes (6.2.10). There was a Danish project promoting plant-based foods. UK school caterers showed least interest in innovative products (6.2.8

6.3.11 Scratch & seasonal cooking

The survey of Swedish catering managers reported in Post et al (2008) found that during the 1980s rationalisation of public catering in Sweden had promoted the use of processed and semi-manufactured foods such as deep-frozen potato products. In Denmark Mikkelsen & Sylvest (2012) and Sørensen, Tetens, Lassen & Løje, (2016, p.27) showed that the organic conversion process involved a growth in preparing food from scratch and using seasonal ingredients. Kimberlee et al. (2013) refers to a comparable development in the UK with the introduction of Food for Life in school kitchens. In the UK kitchens with Food for Life accreditation are required to prepare 75% of food from fresh ingredients. The case study of Oldham Council by Morley & Morgan (2021) says that the Council prepared 83% from fresh ingredients. The PhD research indicated that the move to scratch cooking and seasonal ingredients had happened in all three countries. This approach required staff to develop additional skills. In Sweden this represented a drastic departure from the practices described in Post et al. (2008).

6.3.12 Reducing Meat

There is very limited academic literature relating to meat reduction initiatives in public catering – such the case studies of Finland (Lombardini & Lankosti, 2013), Ghent (Leenaert, 2012) and Gothenburg University (Kurtz, 2017). The PhD research revealed widespread practice of meat reduction in public kitchens in all three countries. Denmark however – unlike the UK or Sweden – has an appreciable number of public kitchens which only offered meatbased meals and this is going to be challenged through litigation.

6.3.13 Reducing food waste

There is a particularly large amount of academic literature discussing food waste in public kitchens in Sweden – such as Steen et al. (2018) and Eriksson et al. (2017). There are some quite recent papers relating to Danish food service (Jensen & Teuber, 2018; Borum & Kidmose (2020)). In the UK the Waste Resource Action Programme (WRAP) last did a survey of food waste in schools in 2010 (WRAP, 2011, p.3). The PhD research described much waste reduction activity in Swedish *kommunes* and considerable activity in Danish public kitchens. In the UK responses ranged from several interviewees who thought that food waste was not a significant problem to others who thought it was an important issue and were actively engaged with waste reduction. It was suggested that food waste might become a more pressing issue in Scotland after the planned introduction of Universal Primary School Meals.

6.3.14 Reduction in carbon footprint

The academic literature showed that Sweden was far ahead of Denmark and the UK in terms of developing systems whereby managers of public kitchens could measure the climate impact of their meals with a view to reducing it. The new database integrated with meal planning software systems was already being used in a small number of *kommunes* by 2017 (Florén, Amani & Davis, 2017). The research provided updated information about the actual usage of this software. Interviews identified two *kommunes* who were using the relevant software module which could calculate the actual carbon footprint of every recipe and another who had decided not to buy this software module because of cost. It also showed that the software provider had collected food purchasing data from 184 *kommunes* to show an overall decline in climate impact of food purchases (5.15.1).

The very recent paper by Lassen et al. (2021) showed that the Technical University of Denmark had analysed purchasing data from Copenhagen City Council and calculated new menus to reduce food GHG emissions by 25% for nurseries while providing

nutritious, affordable and tasty menus. The PhD research interviews threw further light on this matter by showing that calculation of carbon footprint of meals was still infrequent in Denmark. In KOMDK3 the ambition to reduce carbon footprint was about to become policy in May 2019 but by August 2021 there was still some way to go before this police could actually be implemented. There was not yet agreement on how to measure carbon footprint – although there were hopes that government would announce a standard methodology (5.15.2b).

Laurentiis, Hunt & Rogers (2017) reported on UK research which quantified the carbon footprint of school meals. However software was not yet generally available in the UK to enable caterers to calculate the carbon footprint of public meals. One council had hired a university consultant to develop a new, more climate-friendly menu. A group of Scottish councils were working with a university to develop software which would enable caterers to carry out climate impact calculations for school meals (5.15.3c).

6.3.15 Centralised or de-centralised kitchens

There has hitherto been little academic literature discussing the pros and cons of centralised kitchens for provision of public meals. An Indian study concluded that pupil satisfaction with school meals was greater with decentralised kitchens (Ali & Akhbar, 2015). There has been no academic literature discussing centralised and decentralised public kitchens in Denmark or the UK. There are two academic papers relating to Sweden. (See 2.18 above.). Eriksson et al., 2017 showed that centralised kitchens were associated with more food waste. Josefsson et al.(2017) showed that central kitchens for elderly care homes meant poorer nutrition and meal satisfaction. The PhD research found that in all three countries most interviewees said that the direction of travel was away from large centralised kitchens (6.2.14). However the research also showed that in both Sweden and the UK there were catering managers who saw advantages in establishing new central kitchens (5.15).

6.3.16 Summary of Conclusions - Originality & Contribution to Knowledge

The PhD research examines a large number of topics which have had little or no coverage in previous academic literature:

- Quality of public catering in Denmark and Sweden not compromised by outsourcing (6.3.1a).
- increasing problems for English local authority caterers, with schools defecting to cheaper lower-quality private competitors (6.3.1b)
- Scottish government pursuing policies aimed at improving the standard of school food provision by local authorities (6.3.1b)
- Growth of organic food in Swedish public kitchens (6.3.2a)
- Continued growth of organic food in Danish public kitchens after the 2015 government change (6.3.2b)
- Collapse of organic food in UK school catering, 2019-2021 (6.3.2c)
- Danish methodology of measuring organic food by weight makes comparisons with other countries difficult (6.3.3)
- Sweden has more organic food in public kitchens than Denmark (6.3.3)
- Sweden – new league encourages kommunes to buy organic and Swedish (6.3.4a)
- Different ways Swedish kommunes have engaged with their local food producers to encourage them to sell to the public sector (6.3.4a)
- Difficulties Swedish kommunes have had with finding local suppliers (6.3.4a)
- UK Councils active in local food sourcing and difficulties with finding suitable suppliers (6.3.4b)
- Local food procurement in Denmark (6.3.4c)
- Dynamic Food Procurement (6.3.4d)
- The new Danish local food platform Råhandel (6.3.4d; 6.3.6d).

- Differing scales of public procurement in Denmark, Sweden and the UK (6.3.5)
- Swedish co-ordinated distribution projects – differing views as to success and difficulty with finding local suppliers (6.3.6a; 5.6.1c).
- Public procurement of eggs and sustainable fish (6.3.7; 6.3.8).
- Municipalities – particularly in Sweden – avoid buying palm oil and others require certified sustainable palm oil (6.2.7a) Also concerns about imports of Thai food and Brazilian beef (6.2.7b).
- Swedish municipalities were most inclined to purchase innovative products There was a Danish project promoting plant-based foods. UK school caterers showed least interest in innovative products (6.2.10).
- The move to scratch and seasonal cooking in Sweden (6.3.11)
- Meat reduction in public kitchens (6.3.12)
- Food waste reduction initiatives in the UK (6.3.13).
- Reduction in carbon footprint - updated country comparison (6.3.14)
- Centralised kitchens: debates among kitchen managers (6.3.15).

6.3.17 A framework for analysing sustainable food procurement

This research can be used to support a proposed framework for studies of sustainable procurement for public kitchens in other countries. This is set out in Table 34.

Table 34 A framework for analysing sustainable public food procurement

	Issues	Points to consider	Para
1	Scale & Quality	Scale and quality standards of public catering	6.2.2
2	Organic food	Support for organic agriculture and food in public kitchens	6.2.3
3	Local/regional /national food procurement	Does government promote purchasing of local/regional/ national food in public kitchens? How is this affected by procurement law/ arrangements (scale, frequency, tenders). Use of e-commerce & dynamic procurement?	6.2.4 6.2.5
4	Logistics	Logistics arrangements to assist local producers?	6.2.6
5	Eggs	Do kitchens buy free range and/or organic eggs?	6.2.7
6	Sustainable fish	Do kitchens have policies with regard to fish purchasing?	6.2.8
7	Fairtrade	Is Fairtrade significant in any way?	6.4.4
8	Palm oil, Thai & Brazilian food	Do kitchens have policies with regard to purchasing these?	6.2.9
9	Innovation	Do kitchens support innovative suppliers?	6.2.10
10	Cooking from scratch	Is this something which the kitchens already practice? Or do they buy in pre-prepared meals?	6.2.12
11	Seasonal menus	Is this something which the kitchens practice?	6.2.12
12	Reducing meat	Are kitchens measuring and reducing meat usage?	6.2.13
13	Reducing waste	Are kitchens measuring and reducing food waste	6.2.14
14	Carbon footprint	Are kitchens measuring and reducing carbon footprint?	6.2.15
15	Central kitchens?	Are kitchens centralised or de-centralised?	6.2.16

The framework for analysing public sector food procurement policies set out in Table 34 is a significant contribution of this thesis. It comprises 15 issues which potentially form the basis for analysis of these policies in any country. The framework in Table

34 has nine issues in common with the FOODSCALE framework proposed by Goggins & Rau (2015) summarised in Table 3. These are

- Issue 2 – Organic Food
- Issue 3 – Local/regional/national food procurement
- Issue 5 – Eggs
- Issue 6 – Sustainable fish
- Issue 7 - Fairtrade
- Issue 10 – Cooking from scratch
- Issue 11 – Seasonal menus
- Issue 12 - Reducing meat
- Issue 13 – Reducing waste

There are however six aspects of this framework which are original. These are:

- Issue 1 – Scale & Quality
- Issue 4 – Logistics
- Issue 8 – Palm Oil, Thai and Brazilian Food
- Issue 9 – Innovation
- Issue 14 – Carbon Footprint
- Issue 15 – Central Kitchen

6.4 Limitations of the study

6.4.1 Focus on local authorities

The research is focussed on local authorities – referred to in the UK as councils and called kommuner in Denmark and Sweden. These have responsibility for food in municipal organisations – which may include schools, nurseries and elderly care as well as smaller activities such as staff canteens and leisure catering. The research was not aimed at examining hospital food – which would have required targeting a

different set of organisations in all three countries. In Denmark and Sweden hospitals are administered by elected regional councils. In the UK the National Health Service is a national government organisation – although hospital managers have some discretion over local food arrangements. Brief references were made to hospital food in two interviews. REGNSE2b referred to organic food in a Swedish region's hospital kitchens. CONSDK3 referred to her work promoting organic food in a Danish hospital as well as in communes.

6.4.2 Language issues

If the researcher had been able to speak and write Danish and Swedish it is likely that there would have been a better response to requests for interviews.

6.4.3 Lack of interview time

An hour was scarcely sufficient time to cover all subject matter in the interview schedule. It would have desirable to ask each interviewee if they could permit a second interview, perhaps after a year. Several second interviews did take place but if these had been requested at the time of the first interview, there would probably have been more. Some questions in the interview schedule were over-ambitious and should have been shortened – see for example Question 18.

6.4.4 Some questions received greater attention

The findings chapter shows that certain questions received detailed responses from a large number of interviewees. See particularly the following sections 5.2, 5.3, 5.4, 5.5, 5.6, 5.11, 5.12, 5.13, 5.14, 5.15. These responses took up almost all the time available for the interviews. Less information was collected in relation to 5.7, 5.8, 5.9, 5.10. It is likely that these were issues of less pressing importance for the interviewees. Such a pattern is to be expected with semi-structured interviews. If more interview time had been available more information might have been collected.

6.4.5 Buying Fairtrade

Only a single response was obtained about Fairtrade. During interview preparation web-based information about prospective interviewees showed that buying Fairtrade products had little or no significance for catering and procurement officers. The most broadly distributed Fairtrade products are tea, coffee, chocolate, sugar and bananas. Only modest quantities were bought for public kitchens. Local authority websites showed that where local authorities engaged in pro-Fairtrade campaigning it was typically targeted at the whole population and was carried out by officers other than procurement and catering officers who were interviewed for this research. The researcher decided that limited interview time would be better used to ask questions about other food practices where interviewees appeared well informed and willing to answer questions (See sections 5.2, 5.3, 5.4, 5.5, 5.6, 5.11, 5.12, 5.13, 5.14, 5.15.)

6.4.6 Nordic Nutritional Recommendations

In the first and third Swedish interviews questions were asked about the Nordic Nutritional Recommendations. See Question 18, para 4.14 above and academic literature review para 2.22 The response from both interviews was that interviewees followed the Nordic Nutritional Recommendations (KOMSE1; KOMSE3). Thereafter the researcher decided that limited interview time would be better used to ask specific questions about food practices rather than asking about very general concepts such as the Nordic Nutritional Recommendations.

6.4.7 Impact of the COVID pandemic

This did not significantly obstruct the research. Two face to face meetings with UK school catering managers were cancelled in March 2021. A further thirty telephone or online interviews were done between April 2020 and August 2021.

6.5 Recommendations for further research

6.5.1 History of public kitchens in the three countries

In all three countries this history largely remains to be written. In each of the three countries it would be possible to examine how public food has developed – looking at the whole country or perhaps focussing on a selected group of local authorities - perhaps drawn from one or more regions. In each country there have been local, regional and national initiatives. There have been times when efforts have been made to improve standards, widen provision and source from local producers. In the UK particularly there has been a history of abrupt changes of national policy with periods of financial stringency and falling standards interspersed with moves to improve standards – accompanied by substantial new government funding (see 3.4 above).

6.5.2 Regional variations in Swedish public food policies

There is a very large volume of data available relating to public food policies in each Swedish kommune (See 4.7.2. Appendix 5 is just one example of the detailed information about public meals available for each Swedish kommune.) This data has up till now scarcely received any academic attention – with the exception of Lindström et al. (2020). See 2.23.13 above. There are considerable possibilities for analysis of this data to try to understand differences between regions and between different kommuner in the same region. In carrying out this analysis a researcher may draw some inspiration from the examination of the regional distribution of Farm to School initiatives in the USA carried out by Lyson (2016) and Botkins, & Roe (2018). See 2.9.8 above.

A similar analysis of the regional distribution of organic food in Danish public kitchens could also be possible – working from the datasets described in 6.5.3 and 6.5.4 below. Such analyses could throw light on the extent to which support for organic food is a large city phenomenon – which is suggested by some academic literature – see 2.8.6

above, such as Pekala (2020) and Filippini et al. (2018). It would clarify the extent to which support for organic food can also be found in rural areas.

6.5.3 Danish local elections, November 2017

The quality of food in public kitchens – particularly organic and plant-based food – was a significant theme during the 2017 Danish local elections. The Organic Food Association and Diet & Nutrition Association – which organises catering managers - sent a questionnaire to every election candidate asking for their views on organic food in public kitchens (Zafirakos, 2017). The responses were published on a set of web pages – one for every kommune and regional council – headed ØkoValg 2017 - organic election 2017. A total of 90 out of the 94 Danish kommunes had at least some candidates who responded to this questionnaire. At the time of the election, candidates' responses were downloaded from the website <https://okologi.dk/>. The Danish Vegetarian Association carried out a similar survey of candidates' views about plant-based food in public kitchens and published responses by individual candidates on its website (For more about this survey see Dansk Vegetarisk Forening, 2017b). A detailed examination of the responses to these questionnaires could be used to explore different political parties' views with regard to organic and vegetarian food and give some insight into regional differences within Denmark.

6.5.4 Denmark – regional variations in Spisemærk accreditation

Table 11 above shows the uneven regional distribution of Spisemærk Awards. It is derived from an official list of all awards to public and private kitchens, broken down by kommune (Foedevarestyrelsen, 2020). It would be possible to carry out an analysis of the distribution of 3000+ awards among each of the 98 kommunes. See Fig 37 – searchable Denmark map linked to database showing location of awards. It should be borne in mind however that not all public kitchens using organic food have applied for the award (KOMDK5). And that where the number of public institutions using organic food in a kommune has declined from one year to another, this may be due to institutions being amalgamated into larger units rather than to a decline in organic food.

usage (KOMDK2). It would also be possible to investigate whether there was any relationship between Spisemærk distribution by kommune and levels of organic agriculture (Landbrugsstyrelsen, 2018, pp.29-38 – see Fig 17).



The map of Denmark

Fig 16 Denmark - Searchable database and map showing distribution of kitchens with Speisemærk (Foedevarestyrelsen, 2021)

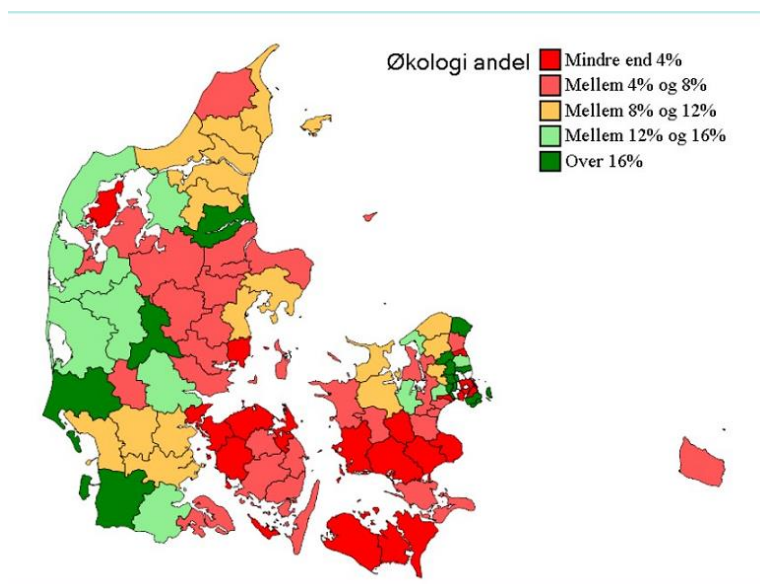


Fig 17 Denmark –organic cultivated area as percentage of total farmland area per kommune (Landbrugsstyrelsen, 2018, p. 35).

6.5.5 National survey of school food in the UK

There is clearly a need for a national survey of school food provision and procurement in the UK – particularly as regards England, Wales and Northern Ireland. This could fill the gap left when the School Food Trust was defunded (para 2.20.2). It should be borne in mind however that the culture in UK councils beleaguered by outsourcing to private sector providers is very different from the open and transparent culture of Swedish local authorities (See Kuhlmann, 2010, quoted in para 2.6.4). Many UK councils may be reluctant to respond to a school food survey.

6.5.6 Tenders & Freedom of Information Act

With regard to food tenders, information about these could be accessed through publicly available databases such as the Official Journal of the European Union. This would supply information about the scale of public procurement, the tender criteria and contract award notices would name the supplier to whom the contract was awarded. Freedom of Information legislation in all three countries could be used to access information about public kitchens and food procurement. This source of data might be particularly helpful in respect of the UK given the very limited amount of publicly available data on public kitchens compared to Sweden or Denmark.

6.5.7 Food waste

The Swedish national survey of food waste in public kitchens (3.2.22b) has already disclosed much information about individual kommuner which warrants analysis and it will be possible to assess change over time given that this survey will be repeated. It may also be possible to compare Swedish data with whatever information will become available about food waste in public kitchens in Denmark and the UK.

6.5.8 E-commerce

With all three countries there could be further study of the use of e-commerce in public food procurement including dynamic food procurement and how it has affected efforts to source food locally. See above 5.4.1i; 5.4.3 ; 5.6.1a. It should be noted that there appears to be a diversity of e-commerce packages in use. KOMSE13 said that of the five other kommuner in its coordinated distribution arrangement, only one had the same software. Two other forms of e-commerce software were used by the others.

6.5.9 Researching Food Suppliers & Infrastructure

Research could examine the large and small companies who supply public kitchens or could potentially do so in future. The research should examine considerations which encourage or discourage food suppliers from selling to public kitchens. This point has been raised in the academic literature. See 2.9.7 for studies of local producers in Finland, Germany, USA and Brazil. Further research could – for example – examine distribution of local abattoirs which are important for public kitchens seeking local meat (3.3.28; 5.4.1g; 5.4.3a; 6.2.4c). The presence of vegetable washing facilities is also worth examining because this can facilitate local vegetable supply to public kitchens (3.4.21; 5.4.3b; 6.2.4c).

6.5.10 Award Schemes

In all three countries award schemes existed for public sector caterers. In the UK these included those given by Public Sector Catering, LACA and APSE (Public Sector Catering, 2021; APSE, 2021; LACA, 2021). In Sweden Berkvist Publishing ran the White Guide award for public sector cooks of the year – taking a holistic view of the meal experience, taste, nutrition, meal environment, education and sustainability (Berkvist Publishing, 2021). The Swedish Ekomatcentrum gave awards to kommuner with the highest levels of organic food and also individual kitchens (Ekomatcentrum, 2019c). In Denmark a principal award for public kitchens was the Kitchen Prize [*Køkkenprisen* – Kost og Ernæringsforbundet, 2021). Further research could explore

the history of award schemes – looking into the numbers and characteristics of public kitchens which won awards and their apparent effectiveness in promoting behaviour change. This would increase our understanding of an under-researched topic – the role of award schemes in promoting sustainable behaviours. See 2.7.4 above.

7 References

7.1 Academic Literature – In English

A TO C

Adamson, A., Spence, S., Reed, L., Conway, R., Palmer, A., Stewart, E., ... & Nelson, M. (2013). School food standards in the UK: implementation and evaluation. *Public health nutrition*, 16(6), 968-981 <https://doi.org/10.1017/S1368980013000621>

Aggestam, V., Fleiß, E., & Posch, A. (2017). Scaling-up short food supply chains? A survey study on the drivers behind the intention of food producers. *Journal of rural studies*, 51, 64-72. <http://dx.doi.org/10.1016/j.jrurstud.2017.02.003>

Ali, J., & Akbar, M. (2015). Pupils' satisfaction with school mid-day meal program: A comparative study of centralized versus decentralized kitchens. *British Food Journal*, 117(7), 1933-1948. <https://doi.org/10.1108/BFJ-01-2015-0002>

Alpenberg, J., Wnuk-Pel, T., & Henebäck, A. (2018). Environmental Orientation in Swedish Local Governments. *Sustainability*, 10(2), 459. <https://doi.org/10.3390/su10020459>

Amann, M., K. Roehrich, J., Eßig, M., & Harland, C. (2014). Driving sustainable supply chain management in the public sector: The importance of public procurement in the European Union. *Supply Chain Management: An International Journal*, 19(3), 351-366. doi.org/10.1108/SCM-12-2013-0447

Andersen, R., Biloft-Jensen, A., Christensen, T., Andersen, E. W., Ege, M., Thorsen, A. V. & Tetens, I. (2014). Dietary effects of introducing school meals based on the New Nordic Diet—a randomised controlled trial in Danish children. The OPUS School Meal Study. *British Journal of Nutrition*, 111(11), 1967-1976. <https://doi.org/10.1017/S0007114514000634>

Andersen, S. S., Vassard, D., Havn, L. N., Damsgaard, C. T., Biloft-Jensen, A., & Holm, L. (2016). Measuring the impact of classmates on children's liking of school meals. *Food Quality and Preference*, 52, 87-95. <https://doi.org/10.1016/j.foodqual.2016.03.018>

Andersson, G. & Nilsson, H. (2012) Policy for sustainable development and food for the city of Malmö. In AViljoen & J.S. Wiskerke (Eds.), *Sustainable food planning: evolving theory and practice*, pp. 181-187, Wageningen: Wageningen Academic Publishers.

Apaolaza, V., Hartmann, P., D'Souza, C., & López, C. M. (2018). Eat organic—Feel good? The relationship between organic food consumption, health concern and subjective wellbeing. *Food Quality and Preference*, 63, 51-62.
doi.org/10.1016/j.foodqual.2017.07.011

Appolloni, A., Sun, H., Jia, F., & Li, X. (2014). Green Procurement in the private sector: a state of the art review between 1996 and 2013. *Journal of Cleaner Production*, 85, 122-133. <https://doi.org/10.1016/j.jclepro.2014.08.106>

Austdal, H. (2018). Common Legal Issues for Traditional and Ethnic Food. In Andersen, V. Bar, E & Wirtanen, G. (Eds.), *Nutritional and Health Aspects of Food in Nordic Countries* (pp. 227-244). Academic Press. <https://doi.org/10.1016/B978-0-12-809416-7.00010-X>

Barnes, J., Durrant, R., Kern, F., & MacKerron, G. (2018). The institutionalisation of sustainable practices in cities: how sustainability initiatives shape local selection environments. *Environmental Innovation and Societal Transitions*.
<https://doi.org/10.1016/j.eist.2018.04.003>

Basha, M. B., & Lal, D. (2019). Indian consumers' attitudes towards purchasing organically produced foods: An empirical study. *Journal of cleaner production*, 215, 99-111 <https://doi.org/10.1016/j.jclepro.2018.12.098>

Bazeley, P., & Jackson, K. (Eds.) (2013). *Qualitative data analysis with NVivo*. London: Sage Publications.

Bere, E., & Brug, J. (2009). Towards health-promoting and environmentally friendly regional diets—a Nordic example. *Public health nutrition*, 12(1), 91-96.
doi.org/10.1017/S1368980008001985

Bere, E., & Stea, T. H. (2017). School food provided for free. *Scandinavian Journal of Public Health*, 45, 1-2 <https://doi.org/10.1177/1403494816683297>

Berg, A., & Hukkinen, J. I. (2011). Beyond effectiveness: the uses of Finland's national programme to promote sustainable consumption and production. *Journal of Cleaner Production*, 19(16), 1788-1797. <https://doi.org/10.1016/j.jclepro.2010.12.020>

Bergström, K., Solér, C., & Shanahan, H. (2005). Professional food purchasers' practice in using environmental information. *British Food Journal*, 107(5), 306-319. DOI 10.1108/00070700510596893

Berti, G., & Mulligan, C. (2016). Competitiveness of small farms and innovative food supply chains: The role of food hubs in creating sustainable regional and local food systems. *Sustainability*, 8(7), 616. ; <https://doi.org/10.3390/su8070616>

Bianchini, M. L., Muzzini, V., & Pagliarino, E. (2010). Trout hamburgers: a sustainable pipeline from aquaculture to community catering. *International Aquatic Research*, 2(3), 193-198.
https://www.researchgate.net/publication/230583214_Trout_hamburgers_a_sustainable_pipeline_from_aquaculture_to_community_catering

Blay-Palmer, A., Landman, K., Knezevic, I., & Hayhurst, R. (2013). Constructing resilient, transformative communities through sustainable “food hubs”. *Local Environment* 18:5, 521-528 <https://doi.org/10.1080/13549839.2013.797156>

Bock, B. B., & Van Huik, M. M. (2007). Animal welfare: the attitudes and behaviour of European pig farmers. *British Food Journal*, 109(11), 931-944.
<https://doi.org/10.1108/00070700710835732>

Björklund, M., & Gustafsson, S. (2015). Toward sustainability with the coordinated freight distribution of municipal goods. *Journal of Cleaner Production*, 98, 194-204
<https://doi.org/10.1016/j.jclepro.2014.10.043>

Björklund, M., Abrahamsson, M. and Johansson, H., (2017). Critical factors for viable business models for urban consolidation centres. *Research in Transportation Economics*. <https://doi.org/10.1016/j.retrec.2017.09.009>

Björklund, M., & Johansson, H. (2018). Urban consolidation centre—a literature review, categorisation, and a future research agenda. *International Journal of Physical Distribution & Logistics Management*. <https://doi.org/10.1108/IJPDLM-01-2017-0050>

Borum, A & Kidmose, U (2020) *Food Waste in the Danish Food Service Sector*, Aarhus University, Available at
https://pure.au.dk/ws/files/179547571/Madspild_servicesektor.pdf (Accessed 28 July 2020)

Bosona, T. G. & Gebresenbet, G. (2011). Cluster building and logistics network integration of local food supply chain. *Biosystems engineering* 108(4), 293–302. DOI: 10.1016/j.biosystemseng.2011.01.001.

Bosona, T., Nordmark, I., Gebresenbet, G., & Ljungberg, D. (2013). GIS-Based Analysis of Integrated Food Distribution Network in Local Food Supply Chain. *International Journal of Business and Management*, 8(17), pp13-34. doi:10.4236/jssm.2011.4202.

Botkins, E. R., & Roe, B. E. (2018). Understanding participation in farm to school programs: Results integrating school and supply-side factors. *Food Policy*, 74, 126-137. <https://doi.org/10.1016/j.foodpol.2017.12.006>

Braun, C. L., Rombach, M., Bitsch, V., & Häring, A. M. (2018). Structures and Actors of the Organic Vegetable Value Chain for School Catering: a Case Study of the Berlin-Brandenburg Metropolitan Region. *Proceedings in Food System Dynamics*, 133-142. DOI: <https://doi.org/10.18461/pfsd.2018.1810>

Brindley, C., & Oxborrow, L. (2014). Aligning the sustainable supply chain to green marketing needs: A case study. *Industrial Marketing Management*, 43(1), 45-55. <https://doi.org/10.1016/j.indmarman.2013.08.003>

Brunori, G., Galli, F., Barjolle, D., Van Broekhuizen, R., Colombo, L., Giampietro, M., Kirwan, J., Lang, T., Mathijs, E., Maye, D. and de Roest, K., (2016). Are local food chains more sustainable than global food chains? considerations for assessment. *Sustainability*, 8(5), p.449. doi:10.3390/su8050449

Birt, C., Buzeti, T., Grosso, G., Justesen, L., Lachat, C., Lafranconi, A., Mertanen, E., Rangelov, N. and Sarlio-Lähteenkorva, S., (2017). *Healthy and Sustainable Diets for European Countries*. European Public Health Association, Available at <https://biblio.ugent.be/publication/8521128>

Blanc, J., & Kledal, P. R. (2012). The Brazilian organic food sector: Prospects and constraints of facilitating the inclusion of smallholders. *Journal of Rural Studies*, 28(1), 142-154. doi:10.1016/j.jrurstud.2011.10.005

Brunius, C., Moula, P. and Sandin, P., 2016. The ethical matrix as a potential tool in public procurement of food. In I. A. S Olsson, S. M Araújo & M. F. Vieira (Eds.), *Food futures: ethics, science and culture* (pp. 395-398). Wageningen: Wageningen Academic Publishers.

Bui, S., Cardona, A., Lamine, C., & Cerf, M. (2016). Sustainability transitions: Insights on processes of niche-regime interaction and regime reconfiguration in agri-food systems. *Journal of rural studies*, 48, 92-103. <https://doi.org/10.1016/j.jrurstud.2016.10.003>

Caldeira, S Stefan, Bonsmann, S., Bakogianni,I, Gauci, C; Calleja, A; DG; Furtado, A. (2017) *Public Procurement of Food for Health technical report on the*

school setting Available at <https://ec.europa.eu/jrc/sites/jrcsh/files/public-procurement-food-health-technical-report.pdf>

Calleja, A. (2015). *Unleashing Social Justice Through EU Public Procurement* (Vol. 3). Abingdon: Routledge.

Caputo, P., Ducoli, C., & Clementi, M. (2014). Strategies and tools for eco-efficient local food supply scenarios. *Sustainability*, 6(2), 631-651. <https://doi.org/10.3390/su6020631>

Caputo, P., Clementi, M., Ducoli, C., Corsi, S., & Scudo, G. (2017). Food Chain Evaluator, a tool for analyzing the impacts and designing scenarios for the institutional catering in Lombardy (Italy). *Journal of Cleaner Production*, 140, 1014-1026. <https://doi.org/10.1016/j.jclepro.2016.06.084>

Carey, J. (2013). Urban and community food strategies. The case of Bristol. *International Planning Studies*, 18(1), 111-128. <https://doi.org/10.1080/13563475.2013.750938>

Carlsson-Kanyama, A., & González, A. D. (2009). Potential contributions of food consumption patterns to climate change. *The American journal of clinical nutrition*, 89(5), 1704S-1709S. doi.org/10.3945/ajcn.2009.26736AA

Cerutti, A. K., Contu, S., Ardente, F., Donno, D., & Beccaro, G. L. (2016). Carbon footprint in green public procurement: Policy evaluation from a case study in the food sector. *Food Policy*, 58, 82-93. <https://doi.org/10.1016/j.foodpol.2015.12.001>

Cernat, L. and Kutlina-Dimitrova, Z., (2015). International public procurement: From scant facts to hard data. *Trade Chief Economist Note Issue 1 April 2015* http://trade.ec.europa.eu/doclib/docs/2015/april/tradoc_153347.pdf

Chambers, S., Boydell, N., Ford, A., & Eadie, D. (2020). Learning from the implementation of Universal Free School Meals in Scotland using Normalisation Process Theory: Lessons for policymakers to engage multiple stakeholders. *Food Policy*, 95, 101936. <https://doi.org/10.1016/j.foodpol.2020.101936>

Chantavanich, S., Laodumrongchai, S., & Stringer, C. (2016). Under the shadow: Forced labour among sea fishers in Thailand. *Marine Policy*, 68, 1-7. <https://doi.org/10.1016/j.marpol.2015.12.015>

Cheng, W., Appolloni, A., D'Amato, A., & Zhu, Q. (2018). Green Public Procurement, missing concepts and future trends—A critical review. *Journal of Cleaner Production*, 176, 770-784. <https://doi.org/10.1016/j.jclepro.2017.12.027>

Christian, C., Ainley, D., Bailey, M., Dayton, P., Hocevar, J., LeVine, M., ... & Jacquet, J. (2013). A review of formal objections to Marine Stewardship Council fisheries certifications. *Biological Conservation*, 161, 10-17. <http://dx.doi.org/10.1016/j.biocon.2013.01.002>

Cohen, B., Moss, P., & Petrie, P. (2004). *A new deal for children?: re-forming education and care in England, Scotland and Sweden*. Bristol: Policy Press.

Cohen, J. F., Richardson, S., Parker, E., Catalano, P. J., & Rimm, E. B. (2014). Impact of the new US Department of Agriculture school meal standards on food selection, consumption, and waste. *American journal of preventive medicine*, 46(4), 388-394. doi:10.1016/j.amepre.2013.11.013.

Cohen, N., & Ilieva, R. T. (2015). Transitioning the food system: A strategic practice management approach for cities. *Environmental Innovation and Societal Transitions*, 17, 199-217. <http://dx.doi.org/10.1016/j.eist.2015.01.003> 2210-4224

Colasanti, K. J., Matts, C., & Hamm, M. W. (2012). Results from the 2009 Michigan Farm to School Survey: participation grows from 2004. *Journal of nutrition education and behavior*, 44(4), 343-349. <http://dx.doi.org/10.1016/j.jneb.2011.12.003>.

Connor, D. J. (2018). Organic agriculture and food security: a decade of unreason finally implodes. *Field Crops Research*, 225, 128-129. <https://doi.org/10.1016/j.fcr.2018.06.008>

Cook, N. B. (2018). Assessment of cattle welfare: Common animal-based measures (pp. 27-53 In Tucker, C (Ed) *Advances in Cattle Welfare*. Woodhead Publishing: Sawston. <https://doi.org/10.1016/B978-0-08-100938-3.00002-4>

Coulson, H., & Sonnino, R. (2018). Re-scaling the politics of food: Place-based urban food governance in the UK. *Geoforum*. <https://doi.org/10.1016/j.geoforum.2018.11.010>

D TO F

Dangour, A., Aikenhead, A., Hayter, A., Allen, E., Lock, K. and Uauy, R., 2009. *Comparison of putative health effects of organically and conventionally produced foodstuffs: a systematic review*. London: Nutrition and Public Health Intervention research Unit, London School of Hygiene & Tropical Medicine. Report to Food Standards Agency Available at <https://www.nutriwatch.org/04Foods/fsa/health.pdf> (Retrieved 3 June 2017)

Da Silva, J. G., Ruviaro, C. F., & de Souza Ferreira Filho, J. B. (2017). Livestock intensification as a climate policy: Lessons from the Brazilian case. *Land Use Policy*, 62, 232-245. <https://doi.org/10.1016/j.landusepol.2016.12.025>

Decataldo, A., & Fiore, B. (2018). Is eating in the school canteen better to fight overweight? A sociological observational study on nutrition in Italian children. *Children and Youth Services Review*, 94, 246-256.
<https://doi.org/10.1016/j.childyouth.2018.10.002>

De Laurentiis, V., Hunt, D.V. and Rogers, C.D. (2017). Contribution of school meals to climate change and water use in England. *Energy Procedia*, 123, pp.204-211 .
<https://doi.org/10.1016/j.egypro.2017.07.241>

De Ponti, T., Rijk, B., & Van Ittersum, M. K. (2012). The crop yield gap between organic and conventional agriculture. *Agricultural systems*, 108, 1-9.
doi:10.1016/j.agsy.2011.12.004

Doernberg, A., Zasada, I., Bruszewska, K., Skoczowski, B., & Piorr, A. (2016). Potentials and limitations of regional organic food supply: A qualitative analysis of two food chain types in the Berlin metropolitan region. *Sustainability*, 8(11), 1125.
<http://www.mdpi.com/2071-1050/8/11/1125>

Dragusanu, R., Giovannucci, D. and Nunn, N., 2014. The economics of fair trade. *The Journal of Economic Perspectives*, 28(3), pp.217-236.
<http://dx.doi.org/10.1257/jep.28.3.217>

D'Silva J & Webster, J (Eds) (2010). *The Meat Crisis: Developing More Sustainable Production and Consumption*. London: Earthscan,

Edler, J., & Georghiou, L. (2007). Public procurement and innovation—Resurrecting the demand side. *Research policy*, 36(7), 949-963.
<https://doi.org/10.1016/j.respol.2007.03.003>

Elinder, L. S., Patterson, E., Nyberg, G., & Norman, Å. (2018). A Healthy School Start Plus for prevention of childhood overweight and obesity in disadvantaged areas through parental support in the school setting-study protocol for a parallel group cluster randomised trial. *BMC public health*, 18(1), 459.
<https://doi.org/10.1186/s12889-018-5354-4>

Eriksson, M., Lindgren, S., & Osowski, C. P. (2018). Mapping of food waste quantification methodologies in the food services of Swedish municipalities. *Resources, Conservation and Recycling*, 137, 191-199.
<https://doi.org/10.1016/j.resconrec.2018.06.013>

Eriksson, M., Osowski, C.P., Malefors, C., Björkman, J. and Eriksson, E., (2017). Quantification of food waste in public catering services—A case study from a Swedish

municipality. *Waste Management*, 61, pp.415-422.
DOI:10.1016/j.wasman.2017.01.035

Eriksson, M., Osowski, C. P., Björkman, J., Hansson, E., Malefors, C., Eriksson, E., & Ghosh, R. (2018). The tree structure—A general framework for food waste quantification in food services. *Resources, Conservation and Recycling*, 130, 140-151. <https://doi.org/10.1016/j.resconrec.2017.11.030>

Eyo, A. (2017). Evidence on use of Dynamic Purchasing Systems in the United Kingdom (UK). *Public Procurement Law Review*, 6, 237-248.
[https://research.bangor.ac.uk/portal/en/researchoutputs/evidence-on-use-of-dynamic-purchasing-systems-in-the-united-kingdom-uk\(2439e8d0-6ae0-4b5a-9965-10f1018a7235\).html](https://research.bangor.ac.uk/portal/en/researchoutputs/evidence-on-use-of-dynamic-purchasing-systems-in-the-united-kingdom-uk(2439e8d0-6ae0-4b5a-9965-10f1018a7235).html)

Fearnside, P. (2017). Business as usual: a resurgence of deforestation in the Brazilian Amazon. *Yale Environ*, 360. <https://e360.yale.edu/features/business-as-usual-a-resurgence-of-deforestation-in-the-brazilian-amazon>

Fesenfeld, L. P. (2016). Governing Urban Food Systems in the Long Run: Comparing Best Practices in Sustainable Food Procurement Regulations. *GAIA-Ecological Perspectives for Science and Society*, 25(4), 260-270.
<https://doi.org/10.3929/ethz-a-010810909>

Filippini, R., De Noni, I., Corsi, S., Spigarolo, R., & Bocchi, S. (2018). Sustainable school food procurement: What factors do affect the introduction and the increase of organic food?. *Food Policy*, 76, 109-119. doi.org/10.1016/j.foodpol.2018.03.011

Fisher, E., & Corbalán, S. (2013). Fair trade and European public procurement: legal principles and governance dynamics. *Social Enterprise Journal*, 9(1), 11-27.
<https://doi.org/10.1108/17508611311329985>

Flynn, A., & Davis, P. (2016a). The policy–practice divide and SME-friendly public procurement. *Environment and Planning C: Government and Policy*, 34(3), 559-578. doi:10.1177/0263774X15614667

Flynn, A., & Davis, P. (2016b) "Firms' experience of SME-friendly policy and their participation and success in public procurement", *Journal of Small Business and Enterprise Development*, Vol. 23 Issue: 3, pp.616-635,
<https://doi.org/10.1108/JSBED-10-2015-0140>

Flynn, A., & Davis, P. (2017). Investigating the effect of tendering capabilities on SME activity and performance in public contract competitions. *International Small Business Journal*, 35(4), 449-469. <https://doi.org/10.1177/0266242616630035>

Fygare, I & Isacson, M (2011) "The tension between modernity and reality, 1945-2010" in J. Myrdal & M. Morell (Eds.), *The Agrarian History of Sweden: 4000 BC to AD 2000*. Lund: Nordic Academic Press..

Florén, B., Amani, P., & Davis, J. (2017). Climate Database Facilitating Climate Smart Meal Planning for the Public Sector in Sweden. *International Journal on Food System Dynamics*, 8(1), 72-80. <https://doi.org/10.18461/ijfsd.v8i1.816>

Nicholas, C., & Fruhmann, M. (2014). Small and medium-sized enterprises policies in public procurement: time for a rethink?. *Journal of Public Procurement*, 14(3), 328-360. <https://www.emeraldinsight.com/doi/pdfplus/10.1108/JOPP-14-03-2014-B002>

Fuchs, D., Di Giulio, A., Glaab, K., Lorek, S., Maniates, M., Princen, T., & Røpke, I. (2016). Power: the missing element in sustainable consumption and absolute reductions research and action. *Journal of cleaner production*, 132, 298-307. <https://doi.org/10.1016/j.jclepro.2015.02.006>

G to J

Gaddis, J.E (2014) Mobilizing to Re-value and Re-skill Foodservice Labor in U.S. School Lunchrooms: A Pathway to Community-level Food Sovereignty, *Radical Teacher* 98, pp 15-20 doi: 10.5195/rt.2014.67.

Galbete, C., Kröger, J., Jannasch, F., Iqbal, K., Schwingshackl, L., Schwedhelm, C., ... & Schulze, M. B. (2018). Nordic diet, Mediterranean diet, and the risk of chronic diseases: the EPIC-Potsdam study. *BMC medicine*, 16(1), 99. <https://doi.org/10.1186/s12916-018-1082-y>

Galli, F., Brunori, G., Di Iacovo, F., & Innocenti, S. (2014). Co-producing sustainability: Involving parents and civil society in the governance of school meal services. A case Study from Pisa, Italy. *Sustainability*, 6(4), 1643-1666. <https://doi.org/10.3390/su6041643>

Gammelgaard, B. (2015). The emergence of city logistics: the case of Copenhagen's Citylogistik-kbh. *International Journal of Physical Distribution & Logistics Management*, 45(4), 333-351. <https://doi.org/10.1108/IJPDLM-12-2014-0291>

Gassler, B., & Spiller, A. (2018). Is it all in the MIX? Consumer preferences for segregated and mass balance certified sustainable palm oil. *Journal of Cleaner Production*, 195, 21-31. <https://doi.org/10.1016/j.jclepro.2018.05.039>

Glas, A. H., & Eßig, M. (2018). Factors that influence the success of small and medium-sized suppliers in public procurement: evidence from a centralized agency

in Germany. *Supply Chain Management: An International Journal*, 23(1), 65-78.
doi/full/10.1108/SCM-09-2016-0334

Giuliani, E. (2018). Regulating global capitalism amid rampant corporate wrongdoing—Reply to “Three frames for innovation policy”. *Research Policy*.
<https://doi.org/10.1016/j.respol.2018.08.013>

Goded, S., Ekroos, J., Domínguez, J., Guitián, J. A., & Smith, H. G. (2018). Effects of organic farming on bird diversity in North-West Spain. *Agriculture, Ecosystems & Environment*, 257, 60-67. <https://doi.org/10.1016/j.agee.2018.01.020>

Goggins, G., & Rau, H. (2016). Beyond calorie counting: Assessing the sustainability of food provided for public consumption. *Journal of Cleaner Production*, 112, 257-266. <https://doi.org/10.1016/j.jclepro.2015.06.035>

Goggins, G.(2018) Developing a sustainable food strategy for large organizations: The importance of context in shaping procurement and consumption practices. *Business Strategy and the Environment*. <https://doi.org/10.1002/bse.2035>

Gonzalez, R. A. (2017). Going back to go forwards? From multi-stakeholder cooperatives to Open Cooperatives in food and farming. *Journal of rural studies*, 53, 278-290. doi.org/10.1016/j.jrurstud.2017.02.018

Graber, A., & Junge, R. (2009). Aquaponic Systems: Nutrient recycling from fish wastewater by vegetable production. *Desalination*, 246(1-3), 147-156
doi:10.1016/j.desal.2008.03.048

Grandia, J. (2016). Finding the missing link: examining the mediating role of sustainable public procurement behaviour. *Journal of Cleaner Production*, 124, 183-190. <https://doi.org/10.1016/j.jclepro.2016.02.102>.

Grandia, J., and Meehan, J. (2017). Public procurement as a policy tool: using procurement to reach desired outcomes in society. *International Journal of Public Sector Management*, 30(4), pp.302-309. <https://doi.org/10.1108/IJPSM-03-2017-0066>

Grankvist, G., & Biel, A. (2007). The impact of environmental information on professional purchasers' choice of products. *Business Strategy and the Environment*, 16(6), 421-429. DOI: 10.1002/bse.565

Granvik, M., (2012). The Localization of Food Systems—An Emerging Issue for Swedish Municipal Authorities. *International Planning Studies*, 17(2), pp.113-124.
<https://doi.org/10.1080/13563475.2012.672796>

Granvik, M., Jacobsson, T., Blix-Germundsson, L., & Larsson, A. (2015). The approach of Swedish municipalities to the preservation of agricultural land in a planning context. *International Journal of Agricultural Resources, Governance and Ecology*, 11(2), 190-204. https://www.balticuniv.uu.se/digitalAssets/669/c_669634-l_1-k_granvik-et-al-2015-1.pdf

Granvik, M., Joosse, S., Hunt, A., & Hallberg, I. (2017). Confusion and Misunderstanding—Interpretations and Definitions of Local Food. *Sustainability*, 9(11), 1981. ; <https://doi.org/10.3390/su9111981>

Gray, S., Means, R., Orme, J., Pitt, H., Jones, M. and Salmon, D. (2015) Improving hospital food: Evaluating the impact of the UK Food for Life Partnership. *European Journal of Public Health*, 25 (Suppl3). p. 380. ISSN 1101-1262 <https://doi.org/10.1093/eurpub/ckv176.018>

Gray, S., Orme, J., Pitt, H. and Jones, M., (2017). Food for Life: evaluation of the impact of the Hospital Food Programme in England using a case study approach. *JRSM Open*, 8(10), p.2054270417712703. <https://doi.org/10.1177/2054270417712703>

Gray, S., Jones, M., Means, R., Orme, J., Pitt, H., and Salmon, D. (2017) Inter-sectoral Transfer of the Food for Life Settings Framework in England. *Health Promotion International*, pp.1-10. <https://doi.org/10.1093/heapro/dax017>

Grimvall, A., Sundblad, E. L., & Wallin, A. (2018). Systematic exploration of actors in society who influence the input of nutrients into the sea. *Marine Policy*, 96, 65-71. <https://doi.org/10.1016/j.marpol.2018.07.014>

Groves, M., & Mundt, K. (2015). Friend or foe? Google Translate in language for academic purposes. *English for Specific Purposes*, 37, 112-121. <https://doi.org/10.1016/j.esp.2014.09.001>

Gullberg, E., (2006). Food for future citizens: school meal culture in Sweden. *Food, Culture & Society*, 9(3), pp.337-343. <https://doi.org/10.2752/155280106778813279>

Gustafsson, U. (2002). School meals policy: the problem with governing children. *Social Policy & Administration*, 36(6), 685-697. <https://doi.org/10.1111/1467-9515.00311>

- Hall, P., Löfgren, K., & Peters, G. (2016). Greening the street-level procurer: challenges in the strongly decentralized Swedish system. *Journal of Consumer Policy*, 39(4), 467-483. <https://doi.org/10.1007/s10603-015-9282-8>
- Hallström, E., Carlsson-Kanyama, A., & Börjesson, P. (2015). Environmental impact of dietary change: a systematic review. *Journal of Cleaner Production*, 91, 1-11. doi.org/10.1016/j.jclepro.2014.12.008
- Hallström, E., Rööf, E., & Börjesson, P. (2014). Sustainable meat consumption: A quantitative analysis of nutritional intake, greenhouse gas emissions and land use from a Swedish perspective. *Food Policy*, 47, 81-90. doi.org/10.1016/j.foodpol.2014.04.002
- Hansen, M. W., Hansen, S. R., Dal, J. K., & Kristensen, N. H. (2020). Taste, education, and commensality in Copenhagen food schools. *Food and Foodways*, 28(3), 174-194. <https://doi.org/10.1080/07409710.2020.1783817>
- Harland, C., Telgen, J., Callender, G., Grimm, R., & Patrucco, A. (2019). Implementing government policy in supply chains: an international coproduction study of public procurement. *Journal of Supply Chain Management*. doi: 10.1111/jscm.12197
- Hansen, S. R., Schmidt, H. W., Nielsen, T., & Kristensen, N. H. (2008). Organic and conventional public food procurement for youth in Denmark. Bioforsk Report Vol. 3 No. 40 2008iPOPY discussion paper 1/2008 Available at <http://orgprints.org/13349/1/13349.pdf> (Accessed 8 April 2019)
- Harwatt, H., Sabaté, J., Eshel, G., Soret, S., & Ripple, W. (2017). Substituting beans for beef as a contribution toward US climate change targets. *Climatic Change*, 143(1-2), 261-270. doi.org/10.1007/s10584-017-1969-1
- He, C & Mikkelsen, BE (2009) Organic school meals in three Danish municipalities. Bioforsk Report Vol. 4 No. 66 2009; iPOPY discussion paper 2/2009. <https://vbn.aau.dk/en/publications/organic-school-meals-in-three-danish-municipalities>
- He, C., Breiting, S., & Perez-Cueto, F. J. (2012). Effect of organic school meals to promote healthy diet in 11–13 year old children. A mixed methods study in four Danish public schools. *Appetite*, 59(3), 866-876. <https://doi.org/10.1016/j.appet.2012.09.001>
- He, C., Perez-Cueto, F. J., & Mikkelsen, B. E. (2014). Do attitudes, intentions and actions of school food coordinators regarding public organic food procurement policy improve the eating environment at school? Results from the iPOPY study. *Public health nutrition*, 17(6), 1299-1307. <https://doi.org/10.1017/S1368980013001511>

He, C., & Mikkelsen, B. E. (2014). The association between organic school food policy and school food environment: results from an observational study in Danish schools. *Perspectives in public health*, 134(2), 110-116. ISSN 1757-9139 DOI: 10.1177/1757913913517976

Hettne, J. (2013). Strategic Use of Public Procurement—Limits and Opportunities. *Swedish Institute of European Studies, European Policy Analysis*, (7). http://www.sieps.hemsida.eu/sites/default/files/2013_7epa.pdf

Hildebrand, D. A., Blevins, P., Carl, L., Brown, B., Betts, N. M., & Poe, T. (2018). Use of Community Readiness Model to Develop and Evaluate a Pilot Culinary Training Program for School Nutrition Staff. *Journal of nutrition education and behavior*, 50(2), 118-124. doi.org/10.1016/j.jneb.2017.07.014

Hockerts, K., & Wüstenhagen, R. (2010). Greening Goliaths versus emerging Davids—Theorizing about the role of incumbents and new entrants in sustainable entrepreneurship. *Journal of Business Venturing*, 25(5), 481-492. <https://doi.org/10.1016/j.jbusvent.2009.07.005>

Holmen, I. M., Utne, I. B., & Haugen, S. (2018). Risk assessments in the Norwegian aquaculture industry: Status and improved practice. *Aquacultural Engineering*, 83, 65-75. <https://doi.org/10.1016/j.aquaeng.2018.09.002>

Holt, P. S. (2021). Centennial Review: A Revisiting of Hen Welfare and Egg Safety Consequences of Mandatory Outdoor Access for Organic Egg Production. *Poultry Science*, 101436. <https://doi.org/10.1016/j.psj.2021.101436>

Hughes, A., Morrison, E., & Ruwanpura, K. N. (2018). Public sector procurement and ethical trade: Governance and social responsibility in some hidden global supply chains. *Transactions of the Institute of British Geographers*. <https://doi.org/10.1111/tran.12274>

Husby, S., Sorensen, J. M., & Eis, J. (2011) Background Paper for Public Foodscapes – A section of the New Nordic Food Conference, Helsinki 11-12 October 2011 Available at http://arkiv.nynordiskmad.org/fileadmin/webmasterfiles/Billeder/31480_background-paper_combined-111010_vers2.pdf

Izumi, B. T., Wright, D. W., & Hamm, M. W. (2010a). Market diversification and social benefits: Motivations of farmers participating in farm to school programs. *Journal of rural studies*, 26(4), 374-382. <https://doi.org/10.1016/j.jrurstud.2010.02.002>

Izumi, B. T., Wright, D. W., & Hamm, M. W. (2010b). Farm to school programs: exploring the role of regionally-based food distributors in alternative agrifood networks. *Agriculture and human values*, 27(3), 335-350. DOI: 10.1007/s10460-009-9221-x.

Jackson, P., & Viehoff, V. (2016). Reframing convenience food. *Appetite*, 98, 1-11. <https://doi.org/10.1016/j.appet.2015.11.032>

Jensen, J. D., Thorsen, A. V., Damsgaard, C. T., & Biloft-Jensen, A. (2015). Cost of New Nordic Diet school meals. *British Food Journal*, 117(9), 2372-2386. <https://doi.org/10.1108/BFJ-01-2015-0032>

Jensen, J. D., & Teuber, R. (2018). *Food waste prevention: State of the art in impact assessment and empirical evidence for Denmark*. Department of Food and Resource Economics, University of Copenhagen. IFRO Report, No. 279 Available at https://curis.ku.dk/portal/files/209141039/IFRO_Report_279.pdf

Jones, M., Dailami, N., Weitkamp, E., Salmon, D., Kimberlee, R., Morley, A., & Orme, J. (2012). Food sustainability education as a route to healthier eating: evaluation of a multi-component school programme in English primary schools. *Health education research*, 27(3), 448-458. doi: 10.1093/her/cys016.

Johnsen, T. E., Miemczyk, J., & Howard, M. (2017). A systematic literature review of sustainable purchasing and supply research: Theoretical perspectives and opportunities for IMP-based research. *Industrial Marketing Management*, 61, 130-143.

Johnson, N.(2014). Food hubs: Sustainable Agriculture's missing link Retrieved from <http://grist.org/food/food-hubs-sustainable-agricultures-missing-link/>

Josefsson, M. S., Nydahl, M., Persson, I., & Sydner, Y. M. (2017). Quality indicators of nutritional care practice in elderly care. *The journal of nutrition, health & aging*, 21(9), 1057-1064. doi.org/10.1007/s12603-017-0970-8

Jørgensen, M. S. (2017). Transition towards sustainable consumption and production? The case of organic food in Denmark. In U Tischner, E Stø, U Kjærnes & A. Tukker (Eds.), *System Innovation for Sustainability 3* (pp. 82-102). Abingdon: Routledge . <https://doi.org/10.4324/9781351279369>

K TO M

Kara, S. (2017). *Modern Slavery: A Global Perspective*. New York: Columbia University Press.

Kimberlee, R., Jones, M., Morley, A., Orme, J., & Salmon, D. (2013). Whole school food programmes and the kitchen environment. *British Food Journal*, 115(5), 756-768 . <https://doi.org/10.1108/00070701311331535>

King, N. (2012). Doing template analysis. in G. Symon & C. Cassell (Eds.), *Qualitative organizational research: core methods and current challenges*. Sage Publications, London..

Kotiswaran, P. (Ed.). (2017). *Revisiting the Law and Governance of Trafficking, Forced Labor and Modern Slavery*. Cambridge: Cambridge University Press.

Krivašonoka, I. (2017). Regulations of public food procurement: opportunities and challenges. *Research for Rural Development*, 2. DOI:10.22616/rrd.23.2017.068

Kristensen, M. D., Bendsen, N. T., Christensen, S. M., Astrup, A., & Raben, A. (2016). Meals based on vegetable protein sources (beans and peas) are more satiating than meals based on animal protein sources (veal and pork)—a randomized cross-over meal test study. *Food & nutrition research*, 60(1), 32634. doi.org/10.3402/fnr.v60.32634

Kristensen, N. H., Netterstrøm, S., He, C., Mikkelsen, B. E., & Nielsen, T. (2009). Making the organic food service chain work and survive. *Agronomy Research*, 7(II), 618-624. https://vbn.aau.dk/ws/files/19153886/Making_the_organic.pdf

Korhonen, K., Muilu, T., Hiltunen, L., Vorne, V., Virtanen, E., Degefu, Y., & Tausta-Ojala, M. L. (2017a, June). Demand for organic potato in professional kitchens and new production potential in Northern Ostrobothnia, Finland. In *NJF Seminar 495-4th organic Conference: Organics for tomorrow's food systems, 19-21 June 2017, Mikkeli, Finland* (Vol. 13, No. 1, pp. 120-121). Available at <http://orgprints.org/31245/> (accessed 23 March 2019)

Korhonen, K., Kotavaara, O., Muilu, T., & Rusanen, J. (2017). Accessibility of Local Food Production to Regional Markets—Case of Berry Production in Northern Ostrobothnia, Finland. *European Countryside*, 9(4), 709-728. DOI: 10.1515/euco-2017-0040

Knutsson, H., & Thomasson, A. (2014). Innovation in the Public Procurement Process: A study of the creation of innovation-friendly public procurement. *Public Management Review*, 16(2), 242-255. DOI:10.1080/14719037.2013.806574

Kuhlmann, S. (2010). Performance Measurement in European local governments: a comparative analysis of reform experiences in Great Britain, France, Sweden and Germany. *International Review of Administrative Sciences*, 76(2), 331-345.
<https://doi.org/10.1177/0020852310372050>

Kuhmonen, T. (2017). Exposing the attractors of evolving complex adaptive systems by utilising futures images: Milestones of the food sustainability journey. *Technological Forecasting and Social Change*, 114, 214-225.
<https://doi.org/10.1016/j.techfore.2016.08.015>

Kurz, V. (2018). Nudging to reduce meat consumption: Immediate and persistent effects of an intervention at a university restaurant. *Journal of Environmental Economics and management*, 90, 317-341.
<https://doi.org/10.1016/j.foodqual.2016.03.018>

Lagerkvist, C. J., & Hess, S. (2010). A meta-analysis of consumer willingness to pay for farm animal welfare. *European Review of Agricultural Economics*, 38(1), 55-78.
<https://doi.org/10.1093/erae/jbq043>

Larsson, M. (2017). Towards a Sustainable Food System in the Baltic Sea Region. In Bali Swain R. (eds) *Environmental Challenges in the Baltic Region* (pp. 15-52). London: Palgrave Macmillan.

Lassen, A.D.; Nordman, M.; Christensen, L.M.; Trolle, E. (2021) Scenario Analysis of a Municipality's Food Purchase to Simultaneously Improve Nutritional Quality and Lower Carbon Emission for Child-Care Centers. *Sustainability* 13, 5551.
<https://doi.org/10.3390/su13105551>

Laurance, W. F., Koh, L. P., Butler, R., Sodhi, N. S., Bradshaw, C. J., Neidel, J. D., ... & Mateo Vega, J. (2010). Improving the performance of the roundtable on sustainable palm oil for nature conservation. *Conservation Biology*, 24(2), 377-381.
<https://doi.org/10.1111/j.1523-1739.2010.01448.x>

Leenaert, T. (2012) Meat Moderation as a challenge for government and civil society. In A. Viljoen & J. Wiskerke (Eds.), *Sustainable Food Planning: evolving theory and practice*. Wageningen: Wageningen Academic Publishers.

Levidow, L. (2015). European transitions towards a corporate-environmental food regime: Agroecological incorporation or contestation?. *Journal of Rural Studies*, 40, 76-89. <https://doi.org/10.1016/j.jrurstud.2015.06.001>

- Lehnerd, M. E., Sacheck, J. M., Griffin, T. S., Goldberg, J. P., & Cash, S. B. (2018). Farmers' Perspectives on the Adoption and Impacts of Nutrition Incentive and Farm to School Programs. *Journal of Agriculture, Food Systems, and Community Development*, 8(1), 147-165. <https://doi.org/10.5304/jafscd.2018.081.012>
- Lindberg, H. (2007). The role of economists in liberalizing Swedish agriculture. *Econ Journal Watch*, 4(2), 213. https://econjwatch.org/file_download/153/2007-05-lindberg-char_issue.pdf?mimetype=pdf
- Lindström, H., Lundberg, S., & Marklund, P. O. (2020). How Green Public Procurement can drive conversion of farmland: An empirical analysis of an organic food policy. *Ecological Economics*, 172, 106622. <https://doi.org/10.1016/j.ecolecon.2020.106622>
- Løes, A. K., & Nölting, B. (2009). Organic school meal systems—towards a more sustainable nutrition. *Agronomy Research*, 7(Special issue II), 647-653. <https://orgprints.org/id/eprint/16335/>
- Løes, A. K., & Nölting, B. (2011). Increasing organic consumption through school meals—lessons learned in the iPOPY project. *Organic Agriculture*, 1(2), 91-110. <https://doi.org/10.1007/s13165-011-0009-0>
- Lohr, L., & Salomonsson, L. (2000). Conversion subsidies for organic production: results from Sweden and lessons for the United States. *Agricultural Economics*, 22(2), 133-146. <https://doi.org/10.1111/j.1574-0862.2000.tb00013.x>
- Lombardini, C., & Lankoski, L. (2013). Forced choice restriction in promoting sustainable food consumption: intended and unintended effects of the mandatory vegetarian day in Helsinki schools. *Journal of Consumer Policy*, 36(2), 159-178. doi: 10.1007/s10603-013-9221-5.
- Lehtinen, U. (2012). Sustainability and local food procurement: a case study of Finnish public catering. *British Food Journal*, 114(8), 1053-1071. <https://doi.org/10.1108/00070701211252048>
- Lehtinen, U. (2016) A Study On Operational Challenges In Public Catering. In *NOFOMA 2016-Proceedings of the 28th annual nordic logistics research network conference 8th -10th June 2016* (p. 341). Available at https://helda.helsinki.fi/dhanken/bitstream/handle/123456789/167784/NOFOMA_2016_Conference_proceedings_4.pdf?sequence=1&isAllowed=y (Accessed 10 October 2017)
- Lindström, N., & Röcklinsberg, H. (2013). School meals: bridging the gap between citizen expectations, procurement skills and legislation. In Röcklinsberg, H. &

Sandin, P. *The ethics of consumption* (pp. 423-428). Wageningen Academic Publishers, Wageningen.

Loader, K. (2013). Is public procurement a successful small business support policy? A review of the evidence. *Environment and Planning C: Government and Policy*, 31(1), 39-55. doi:10.1068/c1213b

Løes, A.K. and Nölting, B., (2011). Increasing organic consumption through school meals—lessons learned in the iPOPY project. *Organic Agriculture*, 1(2), pp.91-110. DOI 10.1007/s13165-011-0009-0

Lucas, P.J., Patterson, E., Sacks, G., Billich, N. and Evans, C.E.L (2017). Preschool and School Meal Policies: An Overview of What We Know about Regulation, Implementation, and Impact on Diet in the UK, Sweden, and Australia. *Nutrients*, 9(7), p.736. doi:[10.3390/nu9070736](https://doi.org/10.3390/nu9070736)

Lundberg, S., Marklund, P. O., & Strömbäck, E. (2016). Is environmental policy by public procurement effective?. *Public Finance Review*, 44(4), 478-499. DOI: 10.1177/1091142115588977

Lundberg, S., & Marklund, P. O. (2018). Green public procurement and multiple environmental objectives. *Economia e Politica Industriale*, 45(1), 37-53. doi.org/10.1007/s40812-017-0085-6

Lülfes-Baden, F., & Spiller, A. (2009). Students' perceptions of school meals: a challenge for schools, school-meal providers, and policymakers. *Journal of foodservice*, 20(1), 31-46. <https://doi.org/10.1111/j.1748-0159.2008.00121.x>

Lyson, H. C. (2016). National policy and state dynamics: A state-level analysis of the factors influencing the prevalence of farm to school programs in the United States. *Food Policy*, 63, 23-35. <https://doi.org/10.1016/j.foodpol.2016.06.008>

Maietta, O. W., & Gorgitano, M. T. (2016). School meals and pupil satisfaction. Evidence from Italian primary schools. *Food Policy*, 62, 41-55. <https://doi.org/10.1016/j.foodpol.2016.04.006>

Marron, D. (2004). Greener public purchasing as an environmental policy instrument. *OECD Journal on Budgeting*, 3(4), 71-105. <https://doi.org/10.1787/budget-v3-art23-en>

Marsden, T., & Sonnino, R. (2012). Human health and wellbeing and the sustainability of urban–regional food systems. *Current Opinion in Environmental Sustainability*, 4(4), 427-430. <https://doi.org/10.1016/j.cosust.2012.09.004>

Martin, M., & Brandão, M. (2017). Evaluating the Environmental Consequences of Swedish Food Consumption and Dietary Choices. *Sustainability*, 9(12), 2227. doi.org/10.3390/su9122227

Matei, A.P., Swagemakers, P., Dominguez Garcia, M.D., da Silva, L.X., Ventura, F. and Milone, P., 2017. State Support in Brazil for a Local Turn to Food. *Agriculture*, 7(1), p.5.

Martins, C. I. M., Eding, E. H., Verdegem, M. C., Heinsbroek, L. T., Schneider, O., Blancheton, J. P., ... & Verreth, J. A. J. (2010). New developments in recirculating aquaculture systems in Europe: A perspective on environmental sustainability. *Aquacultural Engineering*, 43(3), 83-93. <https://doi.org/10.1016/j.aquaeng.2010.09.002>

McCrudden, C. (2007). *Buying social justice: Equality, government procurement, & legal change*. Oxford: Oxford University Press

McKevitt, D., & Davis, P. (2015). How to interact, when and with whom? SMEs and public procurement. *Public Money & Management*, 35(1), 79-86. <https://doi.org/10.1080/09540962.2015.986897>

McKevitt, D., & Davis, P. (2014). Supplier development and public procurement: allies, coaches and bedfellows. *International Journal of Public Sector Management*, 27(7), 550-563. <https://doi.org/10.1108/IJPSM-03-2014-0041>

Mench, J. A., & Rodenburg, T. B. (2018). Sustainability of laying hen housing systems. In J.A. Mench (Ed) *Advances in Poultry Welfare* (pp. 199-225). Sawston: Woodhead Publishing. <https://doi.org/10.1016/B978-0-08-100915-4.00010-5>

Mercado, G., Hjortsø, C. N., & Kledal, P. R. (2016). Public procurement for school breakfasts in the Bolivian Altiplan: Governance structures enabling smallholder inclusion. *Journal of Rural Studies*, 44, 63-76. <http://dx.doi.org/10.1016/j.jrurstud.2016.01.004> 0743-0167

Mie, A., Andersen, H. R., Gunnarsson, S., Kahl, J., Kesse-Guyot, E., Rembiałkowska, E., ... & Grandjean, P. (2017). Human health implications of organic food and organic agriculture: a comprehensive review. *Environmental Health*, 16(1), 111. doi.org/10.1186/s12940-017-0315-4

Miers, S. (2003). *Slavery in the twentieth century: The evolution of a global problem*. Lanham: Rowman & Littlefield.

Mikkelsen, B.E., Kristensen, N.H. and Nielsen, T. (2006). Innovation Processes in Large-Scale Public Foodservice—Case Findings from the Implementation of Organic

Foods in a Danish County. *Journal of Foodservice Business Research*, 8(2), pp.87-105.

Mikkelsen, B.E. and Sylvest, J.(2012). Organic foods on the public plate: technical challenge or organizational change?. *Journal of Foodservice Business Research*, 15(1), pp.64-83. <http://dx.doi.org/10.1080/15378020.2011.650541>

Mikkola, M (2008) *Organic and conventional public food procurement for youth in Finland* Bioforsk Report Vol. 3 No. 41 2008 iPOPY discussion paper 2/2008. Available at http://orgprints.org/13348/1/PDF_NATIONAL_REPORT_FINLAND.pdf

Mikkola, M. (2009). Shaping professional identity for sustainability. Evidence in Finnish public catering. *Appetite*, 53(1), 56-65.
<https://doi.org/10.1016/j.appet.2009.05.007>

Mikkola, M., & Post, A. (2014). Children and school meals: the new party to negotiations for sustainability. *Proceedings in Food System Dynamics*, 275-282.
<https://ageconsearch.umn.edu/record/199369/>

Mithril, C., Dragsted, L. O., Meyer, C., Blauert, E., Holt, M. K., & Astrup, A. (2012). Guidelines for the new Nordic diet. *Public health nutrition*, 15(10), 1941-1947
doi.org/10.1017/S136898001100351X

Moen, O. (2014). Co-distribution of Municipal Goods in Sweden—Procurement from a New Standpoint. *Procedia-Social and Behavioral Sciences*, 125, 484-495. doi: 10.1016/j.sbspro.2014.01.1490

Moffat, T., & Thrasher, D. (2016). School meal programs and their potential to operate as school-based obesity prevention and nutrition interventions: case studies from France and Japan. *Critical Public Health*, 26(2), 133-146.
<https://doi.org/10.1080/09581596.2014.957654>

Moragues-Faus, A. (2017). Urban Food Policy Alliances as Paths to Food Sovereignty? Insights from Sustainable Food Cities in the UK. In AA Desmarais, P. Claeys & A. Trauger (Eds.), *Public Policies For Food Sovereignty: Social Movements And The State*. New York: Routledge.

Moragues-Faus, A., & Morgan, K. (2015). Reframing the foodscape: the emergent world of urban food policy. *Environment and Planning A*, 47(7), 1558-1573.
<https://doi.org/10.1177/0308518X15595754>

Morgan, K. (2006). School food and the public domain: the politics of the public plate. *The Political Quarterly*, 77(3), 379-387. DOI: 10.1111/j.1467-923X.2006.00809.x.

Morgan, K. (2007). *Greening the realm: Sustainable food chains and the public plate*. ESRC Centre for Business Relationships, Accountability, Sustainability and Society (BRASS). Working Paper No 43.

Morgan, K. [2008] *Greening the Realm: Sustainable Food chains and the public plate* *Regional Studies* 42:9 1237-1250 : <http://dx.doi.org/10.1080/00343400802195154>.

Morgan, K. (2010). Local and green, global and fair: the ethical foodscape and the politics of care. *Environment and planning. A*, 42(8), 1852. <https://doi.org/10.1068/a42364>

Morgan, K. (2014). The politics of the public plate: school food and sustainability. *International Journal of Sociology of Agriculture & Food*, 21(3), 253-260 <https://doi.org/10.48416/ijisaf.v21i3.139>

Morgan, K. (2020). Foodscapes of hope: The foundational economy of food. In F. Barbera & I. Jones (Eds.), *The Foundational Economy and Citizenship: Comparative Perspectives on Civil Repair*, pp. 229-248. Bristol: Policy Press.

Morgan, K. & Sonnino, R. (2008). *The school food revolution: public food and the challenge of sustainable development*, London: Earthscan.

Morgan, K., & Morley, A. (2014). The public plate: Harnessing the power of purchase. In T. Marsden & A. Morley (Eds.), *Sustainable Food Systems* (pp. 84-102). London: Routledge.

Mørk, T., Bech-Larsen, T., Grunert, K.G. and Tsalis, G., (2017). Determinants of citizen acceptance of environmental policy regulating consumption in public settings: Organic food in public institutions. *Journal of Cleaner Production*, 148, pp.407-414. <https://doi.org/10.1016/j.jclepro.2017.01.139>

Morley, A. (2020). Procuring for change: An exploration of the innovation potential of sustainable food procurement. *Journal of Cleaner Production*, 279, 123410. <https://doi.org/10.1016/j.jclepro.2020.123410>

Morley, A., & Morgan, K. (2021). Municipal foodscapes: Urban food policy and the new municipalism. *Food Policy*, 102069. <https://doi.org/10.1016/j.foodpol.2021.102069>

Motta, V., & Sharma, A. (2016). Benefits and transaction costs of purchasing local foods in school districts. *International Journal of Hospitality Management*, 55, 81-87. doi.org/10.1016/j.ijhm.2016.02.011

Mount, P. (2012). Growing local food: scale and local food systems governance. *Agriculture and Human Values*, 29(1), 107-121. DOI, 10.1007/s10460-011-9331-0.

Muller, A., Schader, C., Scialabba, N. E. H., Brüggemann, J., Isensee, A., Erb, K. H., ... & Niggli, U. (2017). Strategies for feeding the world more sustainably with organic agriculture. *Nature communications*, 8(1), 1290. DOI: 10.1038/s41467-017-01410-w

Muukka, E., Kuosmanen, L., Ylinampa, M., Blomquist, U., Kärkkäinen, I., Malaska, K., & Soininen, J. (2008). *Local food in municipal catering-a survey of local food purchasing in Finnish municipalities*. EkoCentria: Savo Vocational College Retrieved from <http://orgprints.org/15953/1/Local.pdf> .

N to O

Nelson, M. (2011). The school food trust: transforming school lunches in England. *Nutrition Bulletin*, 36(3), 381-389. <https://doi.org/10.1111/j.1467-3010.2011.01914.x>

Nelson, M. (2013). School food cost–benefits: England. *Public health nutrition*, 16(6), 1006-1011. DOI: <https://doi.org/10.1017/S136898001200420X>

Nelson, M., Gibson, K., & Nicholas, J. (2015). school lunch take up and attainment in primary and secondary schools in england. *Frontiers in public health*, 3, 230. <https://doi.org/10.3389/fpubh.2015.00230>

Nesterenko, N., & Shagalkina, M. (2019). Comparative characteristics of the organic food market in Russia and Germany. In *IOP Conference Series: Earth and Environmental Science* (Vol. 274, No. 1, p. 012059). <https://iopscience.iop.org/article/10.1088/1755-1315/274/1/012059/meta>

Neto, B., & Caldas, M. G. (2017). The use of green criteria in the public procurement of food products and catering services: a review of EU schemes. *Environment, Development and Sustainability*, 1-29. DOI 10.1007/s10668-017-9992-y

Newberry, R. C. (2017). Commercial free-range egg production practices. In P/ Hester (Ed). *Egg Innovations and Strategies for Improvements* (pp. 89-102). Cambridge, Massachusetts: Academic Press. <https://doi.org/10.1016/B978-0-12-800879-9.00009-3>

Nicholas, C., & Fruhmann, M. (2014). Small and medium-sized enterprises policies in public procurement: time for a rethink?. *Journal of Public Procurement*, 14(3), 328-360. <https://www.emeraldinsight.com/doi/pdfplus/10.1108/JOPP-14-03-2014-B002>

Nielsen, T., Nölting, B., Kristensen, N. H., & Løes, A. K. (2009). A comparative study of the implementation of organic food in school meal systems in four European countries. *Bioforsk Report Vol. 4 No. 145 2009 iPOP discussion paper 3/2009*. Available at <http://orgprints.org/16670/1/16670.pdf> (accessed 19 October 2017)

Nuutila, J., Risku-Norja, H., & Arolaakso, A. (2018). Public kitchen menu substitutions increase organic share and school meal sustainability at equal cost. *Organic Agriculture*, 1-10. <https://doi.org/10.1007/s13165-018-0215-0>

Nyberg, M. (2019). Children's Pictures of a Good and Desirable Meal in Kindergarten—A Participatory Visual Approach. *Children & Society*, 33(5), 471-487. <https://doi.org/10.1111/chso.12327>

Nyberg, M., & Sylow, M. (2021). Exploring food choice and flexibility practices among staff and residents at care homes in Denmark. *Ageing & Society*, 41(4), 854-874. <https://doi.org/10.1017/S0144686X19001491>

Obwegeser, N., & Müller, S. D. (2018). Innovation and public procurement: Terminology, concepts, and applications. *Technovation*. <https://doi.org/10.1016/j.technovation.2018.02.015>

O'Hara, J. K., & McClenachan, L. (2018). Factors influencing 'Sea to School' purchases of local seafood products. *Marine Policy* <https://doi.org/10.1016/j.marpol.2018.11.023>

Olsson, C., & Waling, M. (2016). School meals do not have a given place in Swedish school's quality management. *Health Education Journal*, 75(8), 961-971. <https://doi.org/10.1177/0017896916644000>

O'Neill, K. J. (2014). Situating the 'alternative' within the 'conventional'—local food experiences from the East Riding of Yorkshire, UK. *Journal of Rural Studies*, 35, 112-122. <https://doi.org/10.1016/j.jrurstud.2014.04.008>

Oncini, F. (2017). The Holy Gram: Strategy and Tactics in the Primary School Canteen. *Journal of Contemporary Ethnography* <https://doi.org/10.1177/0891241617726577>

Olson, E. L. (2017). The rationalization and persistence of organic food beliefs in the face of contrary evidence. *Journal of cleaner production*, 140, 1007-1013. doi.org/10.1016/j.jclepro.2016.06.005

Oostindjer, M., Aschemann-Witzel, J., Wang, Q., Skuland, S.E., Egelanddal, B., Amdam, G.V., Schjøll, A., Pachucki, M.C., Rozin, P., Stein, J. and Lengard Almli, V.,

(2017). Are School Meals a Viable and Sustainable Tool to Improve the Healthiness and Sustainability of Children's Diet and Food Consumption? A Cross-national Comparative Perspective. *Critical Reviews in Food Science and Nutrition*, pp.3942-3958. <http://dx.doi.org/10.1080/10408398.2016.1197180>

Osowski, C. P., Lindroos, A. K., Barbieri, H. E., & Becker, W. (2015). The contribution of school meals to energy and nutrient intake of Swedish children in relation to dietary guidelines. *Food & nutrition research*, 59(1), 27563. <https://doi.org/10.3402/fnr.v59.27563>

Ostfeld, R., Howarth, D., Reiner, D., Krasny, P. (2019) Peeling back the label—exploring sustainable palm oil ecolabelling and consumption in the United Kingdom. *Environmental Research Letters*. 14 <https://doi.org/10.1088/1748-9326/aaf0e4>

Otsuki, K. (2011a). Sustainable partnerships for a green economy: A case study of public procurement for home-grown school feeding. *Natural Resources Forum* (Vol. 35, No. 3, pp. 213-222). Blackwell Publishing Ltd. DOI: 10.1111/j.1477-8947.2011.01392.x.

Otsuki, K. (2011b). Emerging Governance in the Transition to a Green Economy: A Case Study of Public Sector Food Procurement in Brazil. United Nations Research Institute for Social development Available at [http://www.unrisd.org/unrisd/website/newsview.nsf/\(httpNews\)/5FE39DD0008CDBBDC125793B0044E218?OpenDocument&cntxt=24B19&cookieLang=fr#top](http://www.unrisd.org/unrisd/website/newsview.nsf/(httpNews)/5FE39DD0008CDBBDC125793B0044E218?OpenDocument&cntxt=24B19&cookieLang=fr#top) (Accessed 2 December 2018)

Oya, C., Schaefer, F., & Skolidou, D. (2018). The effectiveness of agricultural certification in developing countries: A systematic review. *World Development*, 112, 282-312. <https://doi.org/10.1016/j.worlddev.2018.08.001>

Özbilgin, İ. G., & Imamoğlu, M. Y. (2011). The impact of dynamic purchasing systems in the electronic public procurement processes. *Procedia Computer Science*, 3, 1571-1575. <https://doi.org/10.1016/j.procs.2011.01.051>

P to R

Parsons, K & Barling, D (2021) *What would a transformational approach to Food Public Procurement look like?*
<https://www.foodsecurity.ac.uk/research/foodsystems-spf/outputs/>

Patterson, E., & Elinder, L. S. (2014). Improvements in school meal quality in Sweden after the introduction of new legislation—a 2-year follow-up. *The European Journal of Public Health*, 25(4), 655-660. doi.org/10.1093/eurpub/cku184

Pepper, A. W., & Milson, A. (1984). The use and acceptability of convenience and fast-foods in the food service industry in Scotland. *International Journal of Hospitality Management*, 3(2), 63-69. [https://doi.org/10.1016/0278-4319\(84\)90051-3](https://doi.org/10.1016/0278-4319(84)90051-3)

Persson Osowski, C., Becker, W., Enghardt Barbieri, H., & Lindroos, A. K. (2017). Energy and nutrient intakes of Swedish children in relation to consumption of and habits associated with school lunch. *Scandinavian journal of public health*, 45(1), 3-9. <https://doi.org/10.1177/1403494816680796>

Persson Osowski, C., & Fjellström, C. (2018). Understanding the ideology of the Swedish tax-paid school meal. *Health Education Journal*, <https://doi.org/10.1177/0017896918798421>

Persson, U. M., Henders, S., & Cederberg, C. (2014). A method for calculating a land-use change carbon footprint (LUC-CFP) for agricultural commodities—applications to Brazilian beef and soy, Indonesian palm oil. *Global change biology*, 20(11), 3482-3491. <https://doi.org/10.1111/gcb.12635>

Piga, G., & Tatrai, T. (Eds.). (2015). *Public procurement policy* (Vol. 23). London: Routledge.

Pitt, H., & Jones, M. (2016). Scaling up and out as a Pathway for Food System Transitions. *Sustainability*, 8(10), 1025. <https://doi.org/10.3390/su8101025>

Poppendieck, J. (2010). *Free for all: fixing school food in America* (California Studies in Food And Culture Vol. 28). Berkeley: University of California Press.

Precup-Stiegelbauer, L. R. (2013). Automatic translations versus human translations in nowadays world. *Procedia-Social and Behavioral Sciences*, 70, 1768-1777. <https://doi.org/10.1016/j.sbspro.2013.01.252>

Popa, M., Mitelut, A., Popa, E., Stan, A., & Popa, V. (2018). Organic foods contribution to nutritional quality and value. *Trends in Food Science & Technology*. doi.org/10.1016/j.tifs.2018.01.003

Post, A., & Mikkola, M. (2012). Nordic stakeholders in catering for sustainability: Chasm between ideology and practice?. *British Food Journal*, 114(5), 743-761 . doi.org/10.1108/00070701211230015

Post, A, Shanahan, H & Jonsson, L. (2008). Food processing: barriers to, or opportunities for, organic foods in the catering sector?. *British Food Journal*, 110(2), 160-173. doi.org/10.1108/00070700810849880

Rasmussen, O. H. (2008). *The Global Organic Food Market and Transformation Deductive Definition of Empiric Indicators The Demand Explanation The Institutional Explanation & Comparative Country Report: Denmark versus Sweden*. Research Danish Research Center for Organic Farming Report No.2.
<http://orgprints.org/14866/1/14866.pdf>

Reed, M., & Keech, D. (2017). Making the city smart from the grassroots up: The sustainable food networks of Bristol. *City, Culture and Society*.
<http://dx.doi.org/10.1016/j.ccs.2017.07.001>

Richards, M. S., Rittman, M., Gilbert, T. T., Opal, S. M., DeBUONO, B. A., Neill, R. J., & Gemski, P. (1993). Investigation of a staphylococcal food poisoning outbreak in a centralized school lunch program. *Public Health Reports*, 108(6), 765.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1403460/pdf/pubhealthrep00064-0111.pdf/>

Rimmington, M., Carlton Smith, J., & Hawkins, R. (2006). Corporate social responsibility and sustainable food procurement. *British Food Journal*, 108(10), 824-837.
<https://doi.org/10.1108/00070700610702082>

Risku-Norja, H., & Muukka, E. (2013). Food and sustainability: local and organic food in Finnish food policy and in institutional kitchens. *Acta Agriculturae Scandinavica, Section B–Soil & Plant Science*, 63(sup1), 8-18.
<https://doi.org/10.1080/09064710.2013.771701>

Risku-Norja, H., & Løes, A. K. (2017). Organic food in food policy and in public catering: lessons learned from Finland. *Organic Agriculture*, 7(2), 111-124.
DOI 10.1007/s13165-016-0148-4

Röcklinsberg, H., Lindström, N., Osowski, C.P. and Röö, E., (2016). Facilitating decision making in public procurement of food through digital tools. In I.A.S Olsson, S. M. Araújo & M. F. Vieira (Eds.), *Food futures: Ethics, science and culture*. Wageningen: Wageningen Academic Publishers. (pp. 285-299).

Rolf, A., & Strassner, C. (2010). School food supply in Lower Saxony-Analysis of the current situation. Poster at: Novel Strategies for Climate Mitigation, Sustainability and Healthy Eating in Public Foodscapes, Copenhagen, Denmark, 25-26th November 2009. Available at <http://orgprints.org/17454/> (Accessed 24 July 2018)

Röö, E., Ekelund, L., & Tjærnemo, H. (2014). Communicating the environmental impact of meat production: challenges in the development of a Swedish meat guide. *Journal of cleaner production*, 73, 154-164. doi.org/10.1016/j.jclepro.2013.10.037

Röös, E., & Karlsson, H. (2013). Effect of eating seasonal on the carbon footprint of Swedish vegetable consumption. *Journal of cleaner production*, 59, 63-72.
<https://doi.org/10.1016/j.jclepro.2013.06.035>

Roos, G., Lean, M., & Anderson, A. (2002). Dietary interventions in Finland, Norway and Sweden: nutrition policies and strategies. *Journal of Human Nutrition and Dietetics*, 15(2), 99-110. <https://doi.org/10.1046/j.1365-277X.2002.00340.x>

Röös, E., Bajželj, B., Smith, P., Patel, M., Little, D., & Garnett, T. (2017). Greedy or needy? Land use and climate impacts of food in 2050 under different livestock futures. *Global Environmental Change*, 47, 1-12.
doi.org/10.1016/j.gloenvcha.2017.09.001

Rundgren, G. (2016). Food: From commodity to commons. *Journal of Agricultural and Environmental Ethics*, 29(1), 103-121. <https://doi.org/10.1007/s10806-015-9590-7>

Ruge, D., & Mikkelsen, B. E. (2013). Local public food strategies as a social innovation: early insights from the LOMA-Nymarkskolen case study. *Acta Agriculturae Scandinavica, Section B—Soil & Plant Science*, 63(sup1), 56-65.

Ruparathna, R., & Hewage, K. (2015). Sustainable procurement in the Canadian construction industry: current practices, drivers and opportunities. *Journal of Cleaner Production*, 109, 305-314 <https://doi.org/10.1016/j.jclepro.2015.07.007>

Ruysschaert, D., & Salles, D. (2014). Towards global voluntary standards: Questioning the effectiveness in attaining conservation goals: The case of the Roundtable on Sustainable Palm Oil (RSPO). *Ecological Economics*, 107, 438-446.
<https://doi.org/10.1016/j.ecolecon.2014.09.016>

S T O T

Saifi, B., & Drake, L. (2008). Swedish agriculture during the twentieth century in relation to sustainability. *Ecological Economics*, 68(1-2), 370-380.
<https://doi.org/10.1016/j.ecolecon.2008.04.003>

Salonen, A. O., Siirilä, J., & Valtonen, M. (2018). Sustainable Living in Finland: Combating Climate Change in Everyday Life. *Sustainability*, 10(1), 104.
[doi:10.3390/su10010104](https://doi.org/10.3390/su10010104)

Sandström, V., Lehtikainen, E., & Peltonen-Sainio, P. (2018). Replacing imports of crop based commodities by domestic production in Finland: potential to reduce

virtual water imports. *Frontiers in Sustainable Food Systems*, 2, 67. doi: 10.3389/fsufs.2018.00067

Saunders, M., Lewis, P., & Thornhill, A. *Research Methods for Business Students*. Sixth Edition, Pearson, London, 2012.

Saxe, H., Jensen, J. D., Laugesen, S. M. B., & Bredie, W. L. (2018). Environmental impact of meal service catering for dependent senior citizens in Danish municipalities. *The International Journal of Life Cycle Assessment*, 1-13. doi.org/10.1007/s11367-018-1487-z

Schmitt, E., Galli, F., Menozzi, D., Maye, D., Touzard, J.M., Marescotti, A., Six, J. and Brunori, G., (2017). Comparing the sustainability of local and global food products in Europe. *Journal of Cleaner Production*, 165, pp.346-359. <https://doi.org/10.1016/j.jclepro.2017.07.039>

Schwartz, B. (2018). The animal welfare battle: the production of affected ignorance in the Swedish meat industry debate. *Culture and Organization*, 1-21. <https://doi.org/10.1080/14759551.2018.1513937>

Scott, A. B., Singh, M., Groves, P., Hernandez-Jover, M., Barnes, B., Glass, K., ... & Toribio, J. A. (2018). Biosecurity practices on Australian commercial layer and meat chicken farms: Performance and perceptions of farmers. *PloS one*, 13(4), <https://doi.org/10.1371/journal.pone.0195582>

Seufert, V., Mehrabi, Z., Gabriel, D., & Benton, T. G. (2019). Current and Potential Contributions of Organic Agriculture to Diversification of the Food Production System. In Lemaire, G. Carvalho, P. Kronberg, S.Recous, S (Editors) *Agroecosystem Diversity: Reconciling Contemporary Agriculture and Environmental Quality* (pp. 435-452). Cambridge, Massachusetts: Academic Press. <https://doi.org/10.1016/B978-0-12-811050-8.00028-5>

Sisnowski, J., Handsley, E., & Street, J. M. (2015). Regulatory approaches to obesity prevention: A systematic overview of current laws addressing diet-related risk factors in the European Union and the United States. *Health Policy*, 119(6), 720-731. <https://doi.org/10.1016/j.healthpol.2015.04.013>

Sjåfjell, B., & Wiesbrock, A. (Eds.). (2016). *Sustainable Public Procurement Under EU Law: New Perspectives on the State as Stakeholder*. Cambridge: Cambridge University Press.

Smith, J., Andersson, G., Gourlay, R., Karner, S., Mikkelsen, B. E., Sonnino, R., & Barling, D. (2016). Balancing competing policy demands: the case of sustainable public sector food procurement. *Journal of Cleaner Production*, 112, 249-256. <https://doi.org/10.1016/j.jclepro.2015.07.065>

Soares, P., Davó-Blanes, M. C., Martinelli, S. S., Melgarejo, L., & Cavalli, S. B. (2017). The effect of new purchase criteria on food procurement for the Brazilian school feeding program. *Appetite*, 108, 288-294.
<http://dx.doi.org/10.1016/j.appet.2016.10.016> 0195-6663/

Sonnino, R. (2009). Quality food, public procurement, and sustainable development: the school meal revolution in Rome. *Environment and Planning A*, 41(2), 425-440.
<https://doi.org/10.1068/a40112>

Sonnino, R. (2010). Escaping the local trap: insights on re-localization from school food reform. *Journal of Environmental Policy & Planning* 12(1), pp. 23-40.
<https://doi.org/10.1080/15239080903220120>

Sonnino, R. (2017). The cultural dynamics of urban food governance. *City, Culture and Society* doi.org/10.1016/j.ccs.2017.11.001

Sonnino, R., & McWilliam, S. (2011). Food waste, catering practices and public procurement: A case study of hospital food systems in Wales. *Food Policy*, 36(6), 823-829. <https://doi.org/10.1016/j.foodpol.2011.09.003>

Sonnino, R., Tegoni, C. L., & De Cunto, A. (2018). The challenge of systemic food change: Insights from cities. *Cities*. <https://doi.org/10.1016/j.cities.2018.08.008>

Sonnino, R., Torres, C. L., & Schneider, S. (2014). Reflexive governance for food security: The example of school feeding in Brazil. *Journal of Rural Studies*, 36, 1-12.
<https://doi.org/10.1016/j.jrurstud.2014.06.003>

Sørensen, L. B., Dyssegaard, C. B., Damsgaard, C. T., Petersen, R. A., Dalskov, S. M., Hjorth, M. F., ... & Lauritzen, L. (2015). The effects of Nordic school meals on concentration and school performance in 8-to 11-year-old children in the OPUS School Meal Study: a cluster-randomised, controlled, cross-over trial. *British Journal of Nutrition*, 113(8), 1280-1291. <https://doi.org/10.1017/S0007114515000033>

Sørensen, N.N., Lassen, A.D., Løje, H. and Tetens, I., (2015). The Danish Organic Action Plan 2020: assessment method and baseline status of organic procurement in public kitchens. *Public health nutrition*, 18(13), pp.2350-2357
<https://doi.org/10.1017/S1368980015001421>

Sørensen, N.N., Løje, H., Tetens, I., Wu, J.H., Neal, B. and Lassen, A.D., (2016). Wellbeing at work among kitchen workers during organic food conversion in Danish public kitchens: a longitudinal survey. *The European Journal of Public Health*, 26(2), pp.323-328. <https://doi.org/10.1093/eurpub/ckv229>

Sørensen, N.N., Tetens, I., Lassen, A. D., & Løje, H. (2016). *Organic food conversion in Danish public kitchens: The effects of the Danish Organic Action Plan 2020 on organic public procurement and wellbeing at work*. Søborg: National Food Institute, Technical University of Denmark . Published PhD thesis Available at. http://orbit.dtu.dk/files/124231485/PhD_Thesis_Nina_N_rgaard_S_rensen_print_final.pdf

Sørensen, N.N., Tetens, I., Løje, H. and Lassen, A.D., (2016). The effectiveness of the Danish Organic Action Plan 2020 to increase the level of organic public procurement in Danish public kitchens. *Public Health Nutrition*, pp.1-8
<https://doi.org/10.1017/S1368980016001737>

Spaargaren, G. (2011). Theories of practices: Agency, technology, and culture: Exploring the relevance of practice theories for the governance of sustainable consumption practices in the new world-order. *Global Environmental Change*, 21(3), 813-822. <https://doi.org/10.1016/j.gloenvcha.2011.03.010>

Springmann, M., Godfray, H. C. J., Rayner, M., & Scarborough, P. (2016). Analysis and valuation of the health and climate change cobenefits of dietary change. *Proceedings of the National Academy of Sciences*, 113(15), 4146-4151.
doi.org/10.1073/pnas.1523119113

Stahlbrand, L. (2016). The food for life catering mark: Implementing the sustainability transition in university food procurement. *Agriculture*, 6(3), 46.
[doi:10.3390/agriculture6030046](https://doi.org/10.3390/agriculture6030046)

Steen, H., Malefors, C., Röös, E., & Eriksson, M. (2018). Identification and modelling of risk factors for food waste generation in school and pre-school catering units. *Waste Management*, 77, 172-184.
<https://doi.org/10.1016/j.wasman.2018.05.024>

Stefani, G., Tiberti, M., Lombardi, G. V., Cei, L., & Sacchi, G. (2017). Public Food Procurement: A Systematic Literature Review. *International Journal on Food System Dynamics*, 8(4), 270-283. <http://dx.doi.org/10.18461/ijfsd.v8i4.842>

Strassner, C., Noeltig, B., & Reimann, S. (2009). School food provision in Germany. A first analysis of the role of organic produce. CORE Organic Project Series Report, 66-68. Available at http://orgprints.org/17418/1/Paper_submission_-_Strassner.pdf (Accessed 24 July 2018)

Stringer, C., & Michailova, S. (2018). Why modern slavery thrives in multinational corporations' global value chains. *Multinational Business Review*, 26(3), 194-206.
<https://doi.org/10.1108/MBR-04-2018-0032>

Swensson, L. F., & Tartanac, F. (2020). Diversifying public food procurement and school feeding. In D. Hunter, T. Borelli & E. Gee (Eds.), *Biodiversity, Food and Nutrition* (pp. 206-220). Abingdon:Routledge.

Tälle, M., Wiréhn, L., Ellström, D., Hjerpe, M., Hüge-Brodin, M., Jensen, P., Lindström, T., Neset, T.S., Wennergren, U. and Metson, G., (2019). Synergies and Trade-Offs for Sustainable Food Production in Sweden: An Integrated Approach. *Sustainability*, 11(3), p.601. doi:10.3390/su11030601

Thorsen, A. V., Lassen, A. D., Andersen, E. W., Christensen, L. M., Biloft-Jensen, A., Andersen, R., ... & Tetens, I. (2015). Plate waste and intake of school lunch based on the new Nordic diet and on packed lunches: a randomised controlled trial in 8-to 11-year-old Danish children. *Journal of nutritional science*, 4. doi:10.1017/jns.2015.3

Tikkanen, I., & Kaleva, H. (2011). Contract award procedures and award criteria in the catering services in Finland. *British Food Journal*, 113(8), 952-964. <https://doi.org/10.1108/00070701111153805>

Tonini, D., Albizzati, P. F., & Astrup, T. F. (2018). Environmental impacts of food waste: Learnings and challenges from a case study on UK. *Waste Management*, 76, 744-766. <https://doi.org/10.1016/j.wasman.2018.03.032>

Treu, H., Nordborg, M., Cederberg, C., Heuer, T., Claupein, E., Hoffmann, H., & Berndes, G. (2017). Carbon footprints and land use of conventional and organic diets in Germany. *Journal of Cleaner Production*, 161, 127-142. <https://doi.org/10.1016/j.jclepro.2017.05.041>

Trochim, W. M. (1989). Outcome pattern matching and program theory. *Evaluation and program planning*, 12(4), 355-366. [https://doi.org/10.1016/0149-7189\(89\)90052-9](https://doi.org/10.1016/0149-7189(89)90052-9)

U to Z

Urquhart, J., & Acott, T. G. (2013). Re-connecting and embedding food in place: Rural development and inshore fisheries in Cornwall, UK. *Journal of Rural Studies*, 32, 357-364. <https://doi.org/10.1016/j.jrurstud.2013.09.004>

Uyarra, E., Edler, J., Garcia-Estevez, J., Georghiou, L., & Yeow, J. (2014). Barriers to innovation through public procurement: A supplier perspective. *Technovation*, 34(10), 631-645. <https://doi.org/10.1016/j.technovation.2014.04.003>

Vail, D., Hasund, K. P., & Drake, L. (1994). *The greening of agricultural policy in industrial societies: Swedish reforms in comparative perspective*. Ithaca NY: Cornell University Press.

Van der Heijden, J. (2016). Experimental governance for low-carbon buildings and cities: Value and limits of local action networks. *Cities*, 53, 1-7.
<https://doi.org/10.1016/j.cities.2015.12.008>

Vecchiato, R., & Roveda, C. (2014). Foresight for public procurement and regional innovation policy: The case of Lombardy. *Research Policy*, 43(2), 438-450. .
<http://dx.doi.org/10.1016/j.respol.2013.11.003>

Vittersø, G., & Tangeland, T. (2015). The role of consumers in transitions towards sustainable food consumption. The case of organic food in Norway. *Journal of Cleaner Production*, 92, 91-99. doi.org/10.1016/j.jclepro.2014.12.055

Wahlen, S., Heiskanen, E., & Aalto, K. (2012). Endorsing sustainable food consumption: Prospects from public catering. *Journal of Consumer Policy*, 35(1), 7-21.

Waling, M and Olsson, C., 2017. School lunch as a break or an educational activity: a quantitative study of Swedish teacher perspectives. *Health Education*, 117(6), pp.540-550.

Wang, Y., Li, Y., Zhang, J., & Su, X. (2019). How impacting factors affect Chinese green purchasing behavior based on Fuzzy Cognitive Maps. *Journal of Cleaner Production*, 240, 118199. <https://doi.org/10.1016/j.jclepro.2019.1181990959-6526/>

Watson, J. A., Treadwell, D., & Bucklin, R. (2018). Economic Analysis of Local Food Procurement in Southwest Florida's Farm to School Programs. *Journal of Agriculture, Food Systems, and Community Development*, 8(3), 1-24.
<https://doi.org/10.5304/jafscd.2018.083.011>

Weichselbaum, E., & Buttriss, J. (2011). Nutrition, health and schoolchildren. *Nutrition Bulletin*, 36(3), 295-355. <https://doi.org/10.1111/j.1467-3010.2011.01910.x>

Weitkamp, E., Jones, M., Salmon, D., Kimberlee, R., & Orme, J. (2013). Creating a learning environment to promote food sustainability issues in primary schools? Staff perceptions of implementing the Food for Life Partnership programme. *Sustainability*, 5(3), 1128-1140. doi:10.3390/su5031128.

Wiborg, S. (2015). Privatizing education: Free school policy in Sweden and England. *Comparative Education Review*, 59(3), 473-497.
<https://doi.org/10.1086/681928>

Wilhelmsson, F. (2006). Market power and European competition in the Swedish food industry. *Journal of Agricultural & Food Industrial Organization*, 4(1).
<https://ideas.repec.org/a/bpj/bjafio/v4y2006i1n7.html>

UNEP (United Nations Environment Programme), (2017) 2017 *Global Review of Sustainable Public Procurement*. Available at
http://wedocs.unep.org/bitstream/handle/20.500.11822/20919/GlobalReview_Sust_Procurement.pdf?sequence=1&isAllowed=y (Accessed 9 July 2017)

Wickramasinghe, K., Rayner, M., Goldacre, M., Townsend, N., & Scarborough, P. (2017). Environmental and nutrition impact of achieving new School Food Plan recommendations in the primary school meals sector in England. *BMJ open*, 7(4), .
<http://dx.doi.org/10.1136/bmjopen-2016-013840>

Willer, H and Lernoud, J (Eds.) (2014) *The World of Organic Agriculture. Statistics and Emerging Trends 2014.* Frick and Bonn: FiBL and IFOAM,. Available at
<https://orgprints.org/25172/1/willer-lernoud-2014-world-of-organic.pdf>

Willer, H. and Lernoud, J. (2017). *The World of Organic Agriculture. Statistics and Emerging Trends*. FIBL-IFOAM Report, Research Institute of Organic Agriculture (FiBL), Frick, and IFOAM–Organics International, Bonn. Available at
<https://shop.fibl.org/CHen/mwdownloads/download/link/id/785/?ref=1>

Willer, H. and Lernoud, J., (2019) *The World of Organic Agriculture. Statistics and Emerging Trends*. FIBL-IFOAM Report, Research Institute of Organic Agriculture (FiBL), Frick, and IFOAM–Organics International, Bonn Available at
<https://shop.fibl.org/CHen/mwdownloads/download/link/id/1202/?ref=1>

Windhorst, H. W. (2017). *Dynamics and Patterns in EU and USA Egg and Poultry Meat Production and Trade*. Wissenschafts-und Informationszentrum Nachhaltige Geflügelwirtschaft (WING), Universität Vechta. Available at
https://www.researchgate.net/profile/Hans_Windhorst/publication/321376778_Dynamics_and_patterns_in_EU_and_USA_egg_and_poultry_meat_production_and_trade/links/5a1fb978458515a4c3d4c651/Dynamics-and-patterns-in-EU-and-USA-egg-and-poultry-meat-production-and-trade.pdf (Accessed 2 January 2019)

Witjes, S., & Lozano, R. (2016). Towards a more Circular Economy: Proposing a framework linking sustainable public procurement and sustainable business models. *Resources, Conservation and Recycling*, 112, 37-44.
<https://doi.org/10.1016/j.resconrec.2016.04.015>

Wittman, H., & Blesh, J. (2017). Food Sovereignty and Fome Zero: Connecting Public Food Procurement Programmes to Sustainable Rural Development in Brazil. *Journal of Agrarian Change*, 17(1), 81-105. <https://doi.org/10.1111/joac.12131>

Woldesenbet, K., & Worthington, I. (2018). Public procurement and small businesses: estranged or engaged?. *Journal of Small Business Management*. <https://doi.org/10.1111/jsbm.12442>

Zasada, I., Schmutz, U., Wascher, D., Kneafsey, M., Corsi, S., Mazzocchi, C., ... & Piorr, A. (2017). Food beyond the city—Analysing foodsheds and self-sufficiency for different food system scenarios in European metropolitan regions. *City, Culture and Society*. <https://doi.org/10.1016/j.ccs.2017.06.002>

Note - references in other languages

A document where there is an English summary and Danish, French, German or Swedish text will have the note “EN summary”.

7.2 Academic Literature – German

Arens-Azevedo, U., Schillmöller, Z., Hesse, I., Paetzelt, G., & Roos-Bugiel, J. (2015). *Qualität der Schulverpflegung–Bundesweite Erhebung. Abschlussbericht* [Quality of school catering – nationwide survey. Final report]. https://www.inform.de/fileadmin/Dokumente/Materialien/20150625INFORM_StudieQualitaetSchulverpflegung.pdf (Accessed 22 July 2018)

7.3 Academic Literature – Swedish

Pedersen, K. (2011)., *Upphandlingskrönika – Livsmedelshänsyn vid livsmedelsupphandlingar*. [Procurement chronicle - animal welfare in food procurement] *Europarättslig tidskrift* (European Union of Journalism) 2011. pp 787-792 Available at <https://www.delphi.se/uploads/2018/08/upphandlingskronika42011-kristian-pedersen.pdf> (Accessed 4th July 2018)

Petrovic, N. (2018). *Vegotrendens drivkrafter och utmaningar: En intervjustudie om vegetarianismens utveckling i Sverige - En intervjustudie om vegetarianismens utveckling i Sverige* [Driving Forces and Challenges of the Vego Trend - An Interview Study on the Development of Vegetarianism in Sweden] Available at <https://www.diva-portal.org/smash/record.jsf?pid=diva2%3A1482364&dswid=197> (Accessed 2 Oct 2021)

Sandin, P., Brunius, C., Moula, P., Röö, E., Ekelund Axelson, L., & Rydhmer, L. (2017). *Etiska hänsyn vid offentlig upphandling av mat*. [Ethical considerations in public procurement of food] Available at https://pub.epsilon.slu.se/14593/7/sandin_I_etal_170929.pdf (accessed 9 August 2018)

7.4 European Union Publications

European Commission (2014) *Procurement of 100% organic, seasonal food Municipality of Copenhagen, Denmark GPP Issue no. 47* Dec. Available at https://ec.europa.eu/environment/gpp/pdf/news_alert/Issue47_Case_Study97_Copenhagen.pdf (Accessed 1 Apr 2020).

European Commission (2017) *Cities for Food Systems. Innovation and Green Jobs Steps towards food systems approaches for 2030*. Available at http://ec.europa.eu/research/bioeconomy/pdf/publications/food2030_workshop%20outcomes%20report_final_web.pdf (Accessed 29 Nov 2020)

European Commission (2018) *Public Procurement :Legal rules and implementation*. Available at http://ec.europa.eu/growth/single-market/public-procurement/rules-implementation_en (accessed 29 July 2018)

European Commission (2020) *Farm to Fork Strategy For a fair, healthy and environmentally-friendly food system*. Available at https://ec.europa.eu/food/sites/food/files/safety/docs/f2f_action-plan_2020_strategy-info_en.pdf (Accessed 8 Sept 2020)

Maciejewski, M (2018) *Public procurement contracts*. Available at <http://www.europarl.europa.eu/factsheets/en/sheet/34/public-procurement-contracts> (Accessed 11 Apr 2019)

Soldi, R (2018) *Sustainable public procurement of food*. European Committee of the Regions. Available at <https://cor.europa.eu/en/engage/studies/Documents/sustainable-public-procurement-food.pdf> (Accessed 2 Feb 2019)

7.5 European Union Project Reports

C Di Bartolo (2014) *The food distribution model of Borlänge. Sweden* 29 Aug 2014 <https://www.eltis.org/discover/case-studies/food-distribution-model-borlange-sweden> (Accessed 22 Nov 2019)

BERAS (2013) *Newsletter No. 6* April 2013. Available at <http://www.beras.eu/implementation/index.php/en/component/phocadownload/category/17-newsletters?download=185:beras-news-april-2013> (Accessed 22 Nov 2019)

BERAS (2011) *Newsletter September 2011* EN Available at <http://www.beras.eu/implementation/index.php/en/news-and-events/newsletters> (Accessed 2 November 2019)

BERAS (2013) *Newsletter April 2013* EN Available at <http://www.beras.eu/implementation/index.php/en/news-and-events/newsletters> (Accessed 2 November 2019).

Dogme Project (2007) *Dogme 2000 A manual on a municipal environmental cooperation in progress*, 25 Oct 2007. Available at http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=file&fil=DOGME_manual_EN.pdf (accessed 1 August 2017).

Foodlinks (2013) *Revaluing Public Sector Food Procurement . "An Action Plan for Sustainability. Report of Food links Project. Seventh Framework Programme project ENV.2010.4.2.3-3 FOODLINK.* Available at http://orgprints.org/28859/1/Foodlinks_report_low_action_plan.pdf (accessed 9 August 2017)

Diet for a Green Planet (2014), May, 2014. *Baseline Report, URBACT II Programme*, Available at http://urbact.eu/sites/default/files/media/baseline_report_dietforagreenplanet_urbactii_final_140529.pdf (downloaded 18 December 2018)

Grantstedt, A & Hertwig, J (2015) *Diet for a Clean Baltic in Practice*. Available at https://urbact.eu/sites/default/files/import/Projects/Diet_for_Green_Planet/documents_media/DCB-cookbook_eng-webversion.pdf (Accessed 1st July 2019)

Granstedt, A., & Seuri, P. (2013). *Conversion to ecological recycling agriculture and society: Environmental, economic and sociological assessments and scenarios.*: COMREC, Södertörns Högskola, Huddinge Available at <http://beras.eu/wp-content/uploads/2013/09/Conversion-to-Ecological-Recycling-Agriculture-and-Society-reviderad-utg%C3%A5va.pdf> (Accessed 18th December 2018).

Martinez, L (2015) *Towards a sustainable Public Food Service in Copenhagen using the lever of education and training*. Available at http://www.citego.org/bdf_fiche-document-1327_fr.html (Accessed 22 Nov 2019)

Morgan,D, Ochoa,A.,Grana,E., Semple, A (2016) *Engaging the market in public procurement A collection of good practice cases* ICLEI – Local Governments for Sustainability, Freiburg. Available at https://sustainable-catering.eu/fileadmin/user_upload/INNOCATEngagementReportInteractive.pdf (Accessed 28 Nov 2020)

Persson, A (2010) *Case Study: Borlänge, Sweden. Consolidation of deliveries to four Swedish municipalities*, TRAILBLAZER [Transport And Innovation Logistics by Local Authorities with a Zest for Efficiency and Realization] Dec 2010. Available at https://www.eltis.org/sites/default/files/case-studies/documents/borlange_11.pdf (Accessed 22 Nov 2011)

Södertälje (2015) *The Diet Unit: Food – the key to a better future* Available at https://urbact.eu/sites/default/files/media/the_key_to_a_better_future_eng_final_web_b.pdf (Accessed 1st July 2019)

SPP Regions Consortium (2017), *SPP regions tender model – Food and Catering: provision of school food in Bath*, Available at https://sppregions.eu/fileadmin/user_upload/Tenders/SPP_Regions_Tender_model_food_contract_final.pdf (Accessed 12 Sept 2020)

7.6 International Organisations

FAO (2018) *World Food and Agricultural Statistical Pocketbook, 2018* Available at <http://www.fao.org/policy-support/resources/resources-details/en/c/1160800/>

World Food Programme (2013) *State of School Feeding Worldwide 2013* Available at <https://www.wfp.org/content/state-school-feeding-worldwide-2013> (Accessed 11 November 2018)

United Nations (2002) *Report of the World Summit on Sustainable Development Johannesburg, South Africa, 26 August- 4 September 2002* Available at <http://www.un-documents.net/aconf199-20.pdf>

7.7 Unpublished Theses, Seminar & Working Papers– in English

Breban, M (2018) *Food Service and Sustainable Products: The Role of Restaurants in Sustainable Food System Development* Masters Thesis IESEG Business School, Paris, November 2018.

Groth-Michelsen, L & Schenk, I (2017) “*Bornholm - regional transition through food production*” Abstract for Sustain Conference, Danish Technical University, 6 Dec 2017, p.183. Available at <https://orbit.dtu.dk/ws/files/140585861/SustainAbstracts2017a.pdf>

Gube, M (2016) *The (un)sustainability of hotel breakfast buffets. Food and its potential to mitigate greenhouse gas emissions in the context of tourism* Masters Thesis Linnaeus University, Uppsala Available at <http://www.diva-portal.org/smash/record.jsf?pid=diva2%3A943644&dswid=8549> (Accessed 12 Apr 2019)

Halberg, N., Alrøe, H., Meldgaard, M., & Michelsen, J. (2008). *Development, growth and integrity in the Danish organic sector, a white paper*. Available at https://pure.au.dk/ws/files/3182538/2008_Halberg_Alroe_et_al_-_Development_growth_and_integrity_in_the_Danish_organic_sector._A_white_paper.pdf

Olsson, EL (2015) *Implementera mera. En studie om att implementera det nationella målet 25% ekologisk mat i kommunal verksamhet* [Implement more. A study on implementing the national target 25% organic food in municipal activities] Masters dissertation. EN abstract. Available at <https://lup.lub.lu.se/student-papers/record/4924390/file/4924438.pdf> (Accessed 27 Sept 2020)

Stein, M. (2014) *Sustainable Food Procurement for State Schools in Northern England and North Wales*, M Phil Thesis, Salford University.

Walton, S. and Hawkes, C. (2020). *What We Can Learn: A Review of Food Policy Innovations in Six Countries*. UK: National Food Strategy. <https://openaccess.city.ac.uk/id/eprint/24918/>

7.8 Government publications – Denmark

Mostly in Danish, EN denotes text in English.

Aarhus (2019a) *Indstilling på baggrund af forslag fra S, RV og ALT om klimapolitisk fødevarestrategi – Referat Økonomiudvalget 19-06-2019* [Recommendation based on proposals from S, RV and ALT on climate policy food strategy. Finance Committee Minutes 19-06-2019] Available at <https://www.aarhus.dk/demokrati/politik/dagsordner-og-referater/vis-dagsorden/v/16009/okonomiudvalget/referat/2019-06-19/?agendaid=402066#1> (Accessed 25 Nov 2019)

Aarhus (2019b) *Danmark-Aarhus: Tjenester i forbindelse med hotel, restaurant og detailhandel 2019/S 020-043380 Udbudsbekendtgørelse – Tjenesteydelser* [Denmark-Aarhus: Services in connection with hotel, restaurant and retail 2019 / S 020-043380 Tender notice - Services] 29 Jan 2019. Available at <https://ted.europa.eu/udl?uri=TED:NOTICE:043380-2019:TEXT:DA:HTML> (Accessed 1 November 2020)

Copenhagen City Council (2016) *Copenhagen's organic food revolution*. EN. 23 May. Available at <https://international.kk.dk/nyheder/copenhagens-organic-food-revolution> (Accessed 22 Nov 2019)

Copenhagen City Council (2019) *City of Copenhagen Food Strategy 2019* EN. Available at https://www.kk.dk/sites/default/files/uploaded-files/the_city_of_copenhagen_food_strategy_2019.pdf

Danmarks Statistik (2019) *Stor stigning i økologisalg til storkøkkener – Danmarks Statistik* [Large increase in organic sales to large kitchens – Statistics Denmark] 18 Sept 2019. No. 343 Available at <https://www.dst.dk/da/Statistik/nyt/NytHtml?cid=29291> (Accessed 2 Nov 2019).

Danmarks Statistik (2020) *Mest økologi i den offentlige sektors køkkener* [Most organic in public sector kitchens]. 14 Sept 2020. Available at <https://www.dst.dk/da/Statistik/nyt/NytHtml?cid=31962> (Accessed 1 Apr 2021)

Danmarks Statistik (2021) *COVID-19 gav dyk i salg til økologisk foodservice* [COVID-19 caused fall in sales to organic food service] 10 Sept 2021. Available at <https://www.dst.dk/da/Statistik/nyt/NytHtml?cid=31963> (Accessed 1 Oct 2021)

Foedevarestyrelsen (2020) *Det Økologiske Spisemærke* [The Organic Food Label] 12 Nov Available at <https://www.foedevarestyrelsen.dk/Leksikon/Sider/Det-oekologiske-spisemaerke.aspx> (Accessed 5 Feb 2021)

Foedevarestyrelsen (2021) *Om spisemaerket - danmarkskort* [About Taste Mark – the Denmark Map] Available at <https://www.oekologisk-spisemaerke.dk/om-spisemaerket/danmarkskort/> (Accessed 10 Sept 2021).

Havndrup, T. (2019) *Køkkenleder til EAT Skolemad* [Kitchen Manager for EAT School Food] Available at <https://www.ofir.dk/resultat/annonce.aspx?jobId=329863749> (Accessed 2 March 2019).

Københavns Kommun (2001a) *Uddannelses- og Ungdomsudvalget, Ansøgning til Sundhedsministeriet vedrørende Københavns Økologiske Skolemadsprojekt* [Education and Youth Committee. Application to the Ministry of Health regarding the Copenhagen Organic School Food Project] Sept 12 Available at http://www.kk.dk/sites/default/files/edoc_old_format/Uddannelses-%20og%20Ungdomsudvalget/12-09-2001%2009.00/Dagsorden/10-09-2001%2013.51.30/DA88CE7F841B2F7FC1256AC3004077BB.htm

(Accessed 2 Aug 2017).

Københavns Kommun (2001b) *Sundheds- og Omsorgsudvalget Redegørelse om indførelse af økologiske fødevarer som forsøg på 2 af Sundhedsforvaltningens institutioner* [Health and Care Committee, Tuesday, April 17, 2001, Report on the introduction of organic food as an attempt by two of the Health Administration's institutions] Available at https://www.kk.dk/sites/default/files/edoc_old_format/Sundheds-%20og%20Omsorgsudvalget/17-04-2001%2014.30/Dagsorden/23-05-2003%2013.59.34/F0902757FA4FD555C1256D2F0041E0E4.htm (accessed 1 August 2017).

Københavns Kommun (2014) *Status på økologiomlægning i BUF* [Status of organic conversion in BUF] 30 Nov. pp.12-13 Available at <https://www.kk.dk/sites/default/files/edoc/17b8edf0-fcb4-4a91-a056-57aae1b3f112/7b74f60b-c6c0-4d30-9710-4aef34c6b56d/Attachments-12212852907-1.PDF>

Københavns Kommun (2021) *Skal vi registrere i kilo eller kroner?* [Should we measure in kilos or kroner?] Available at <https://maaltider.kk.dk/artikel/spoergsmaal-og-svar> (Accessed 6 Feb 2021)

Landbrug & Fødevarer (2017) *Markedsanalyse: Færre madpakker - men fortsat populært* [Market analysis: Fewer lunches - but still popular] August 2, 2017 Available at <https://lf.dk/tal-and-analyser/consumers-and-trends/population-adfaerd-and-samfund/2017/faerre-madpakker-men-fortsat-populaert> (Accessed 20 July 2019)

Landbrugsstyrelsen (2018) *Statistics on Organic Agricultural Holdings in 2017* Apr 2018. Available at https://lbst.dk/fileadmin/user_upload/NaturErhverv/Nyheder/2018/Statistik_oekologiske_jordbrugsbedrifter_2017_billedebagside_eng_pics_med_engelske_figurer_faerdig_002_.pdf (Accessed 2 Mar 2021)

Ministeriet for Fødevarer, Landbrug og Fiskeri (2012) *The delicious and healthy New Nordic Diet* EN Available at http://mfvm.dk/fileadmin/user_upload/FVM.dk/Dokumenter/Ministeriet/EU_og_Internationalt/EUsamarbejdet/Formandskab/1903_Faktaark_FVM_Formandssk_New_Nordic_Diet_v3_4korr.pdf (accessed 1 October 2017)

Ministeriet for Fødevarer, Landbrug og Fiskeri (2013) . *Opfordring til kommuner: Køb lokalt* [Invitation to municipalities: Buy locally] June 14, 2013. Available at <https://mfvm.dk/nyheder/nyhed/nyhed/opfordring-til-kommuner-koeb-lokalt-2/> (Accessed 30 June 2019).

Ministeriet for Fødevarer, Landbrug og Fiskeri (2015), *Organic Action Plan for Denmark - Working together for more organics*. EN. Available at https://en.mfvm.dk/fileadmin/user_upload/FVM.dk/Dokumenter/Landbrug/Indsatser/Oekologi/7348_FVM_OEkologiplanDanmark_A5_PIXI_English_Web.pdf (Accessed 1 Nov 2019).

Odense (2019) *Nye fødevaremål i Partnerskab for Offentlige Grønne Indkøb* [New Food Goals in the Public Procurement Partnership] Nov 8, 2017. Available at http://78.46.150.91/agenda_item/sbsys_278_4183 (Accessed 25 Nov 2019).

Oekologisk spisemaerke, (2019). *Om Det Økologiske Spisemærke* [About The Organic Food Label] Available at <https://www.oekologisk-spisemaerke.dk/om-spisemaerket/> (Accessed 8 July 2019).

Pedersen, AM & Ovesen, L (2015) *Anbefalinger for den danske institutionskost* Fødevarestyrelsen, Sundhedsstyrelsen og DTU Fødevareinstituttet [Recommendations for Danish institutional food. The Danish Food Agency, the National Board of Health and the DTU Food Institute] Available at <https://altomkost.dk/publikationer/publikation/pub/hent-fil/publication/anbefalinger-for-den-danske-institutionskost/> (Accessed 23 Dec 2019).

SKI (2015) *50.90 Fødevarer. Tager hensyn til din kommunes strategi på området* [50.90 Food: Takes into account your municipality's strategy in this area] 21 October 2015. Available at <https://www.ski.dk/nyheder/Sider/50-90-Foedevarer-Tager-hensyn-til-din-kommunes-strategi-paa-omraadet.aspx> (Accessed 15 May 2020).

SKI (2021) *Dynamiske indkøbssystemer i SKI* [Dynamic purchasing systems in SKI] Available at <https://www.ski.dk/videnssider/dynamiske-indkobssystemer-i-ski/> (Accessed 10 June 2021).

Sønderborg Kommune (2018) *Lokale fødevareproducenter går sammen i netværk* [Local food producers join networks] 25 Apr Available at <https://sonderborgkommune.dk/aktuelt/arkiv/lokale-foedevareproducenter-gaar-sammen-i-netvaerk> (Accessed 15 May 2020).

Sønderborg (2019) *Handleplan for Fødevarer 2019-2021 Sønderborg Kommune som klimavenligt fødevareområde* [Food Action Plan 2019-2021 Sønderborg Municipality as a climate-friendly food area] August 2019. Available at https://sonderborgkommune.dk/sites/all/files/Forvaltninger/Intern%20Stab/Beredskab/Dokumenter/handleplan_for_foedevarer_2019-2021.pdf (Accessed 10 July 2020).

StatBank Denmark (2019) Population and elections Selection from table FOLK1B Available at <https://www.statbank.dk/BEV22> (Accessed 8 July 2019).

Danmarks Statistik (2019) *Stor stigning i økologisalg til storkøkkener – Danmarks Statistik* [Large increase in organic sales to large kitchens – Statistics Denmark] 18 Sept 2019 - No. 343 Available at <https://www.dst.dk/da/Statistik/nyt/NytHtml?cid=29291> (Accessed 2 Nov 2019);

Danmarks Statistik (2020) *Mest økologi i den offentlige sektors køkkener* [Most organic in public sector kitchens] 14 Sept 2020. Available at <https://www.dst.dk/da/Statistik/nyt/NytHtml?cid=31962> (Accessed 1 Apr 2021)

Danmarks Statistik (2021) *COVID-19 gav dyk i salg til økologisk foodservice* [COVID-19 caused fall in sales to organic food service] 10 Sept 2021. Available at <https://www.dst.dk/da/Statistik/nyt/NytHtml?cid=31963> (Accessed 1 Oct 2021)

7.9 Government Publications – Nordic

Nordic Council of Ministers (2014), *Nordic Nutrition Recommendations 2012 Integrating nutrition and physical activity* <http://dx.doi.org/10.6027/Nord2014-002>

Nordic Council of Ministers (2018a) *Solutions Menu – A Nordic guide to sustainable food policy, Full version*. 9 June Available at <http://dx.doi.org/10.6027/ANP2018-786>

Nordic Council of Ministers (2018b) *Policy Brief: Future Nordic Diets. A summary for decision makers* Johan Karlsson, Elin Rööf, Tove Sjunnestrand, Kajsa Pira, Malin Larsson, Bente Hessellund Andersen, Jacob Sørensen, Tapani Veistola, Jaana Rantakokko, Sirkku Manninen and Stein Brubæk. Edited by Kajsa Pira. Available at <http://norden.diva-portal.org/smash/get/diva2:1265891/FULLTEXT01.pdf> (Accessed 30th Nov 2018)

Pekala, A (2020) *Market analysis of organic foods in the Nordic and Baltic countries* Available at <http://norden.diva-portal.org/smash/get/diva2:1386343/FULLTEXT01.pdf> (Accessed 23 Jan 2021)

7.10 Government Publications - Sweden

Mostly in Swedish, EN denotes text in English.

Backlund, U (2020) *Ett vildsvinsnätverk har sett dagens ljus* [A wild boar network has seen the light of day] 22 Sept, Available at <http://maltidsbloggen.se/2020/09/vildsvinsnatverk/> (Accessed 22 Sept 2020).

Braic, D (2013) *Interview: The strategic importance of green procurement at Växjö GPP Issue no. 32 News-Alert June 2013* Available at https://ec.europa.eu/environment/gpp/pdf/news_alert/Issue32_NewsAlert_Interview.pdf.

County Administrative Board of Västra Götaland County (2019) *Tema svenskodlade baljväxter. Nyhetsbrev från Länsstyrelsen Västra Götalands län* [Theme Swedish-grown legumes] Newsletter from County Administrative Board of Västra Götaland County] Dec 2019 Available at https://www.idrelay.com/v4_idrarchive.asp?q=896-8935-3C (Accessed 12 Jan 2020).

Edman, S (2005) *Bilen, Biffen, Bostaden: Hållbara laster – smartare consumption* [Car, Baby, House: Sustainable burdens - smarter consumption] SOU 2005:51 Available at <https://www.regeringen.se/contentassets/b45b24cd21144e3193749b9b278d661c/bilen-biffen-bostaden---hallbara-laster-smartare-konsumtion> (Accessed 27 December 2018).

Fritz, K (2019) *Nyfikna på resultatet från matsvinnskartläggningen?* [Curious about the results of the food waste survey?] Nov 14, 2019 <http://maltidsbloggen.se/2019/11/nyfikna-pa-resultatet-fran-matsvinnskartlaggningen/> (Accessed 22 Nov 2019).

Fritz, K (2020a) *Kartläggningen av matsvinn är äntligen här!* [The mapping of food waste is finally here!] 16 Jan 2020. Available at <http://maltidsbloggen.se/2020/01/kartlaggningen-av-matsvinn-ar-antligen-har/> (Accessed 8 March 2021).

Fritz, K (2020b) *L 2020 nr 01 - Fakta om offentliga måltider 2019 – Kartläggning av matsvinn i kommunalt drivna förskolor, skolor och äldreboenden* [L 2020 no 01 - Facts about public meals 2019 - Survey of food waste in municipal-run preschools, schools and senior housing]. Available at <https://www.livsmedelsverket.se/bestall-ladda-ner-material/sok-publikationer/artiklar/2020/l-2020-nr-01---fakta-om-offentliga-maltider-2019?AspxAutoDetectCookieSupport=1> (Accessed 1 Feb 2020).

Fritz (2020c) *L 2020 nr 01 - Fakta om offentliga måltider 2019 - bilaga Kommunsiffror.xlsx* [L 2020 no. 01 - Facts about public meals 2019 - appendix Municipal figures.xlsx] Available at <https://www.livsmedelsverket.se/bestall-ladda->

[ner-material/sok-publikationer/artiklar/2020/l-2020-nr-01---fakta-om-offentliga-maltider-2019?AspxAutoDetectCookieSupport=1%20](#) (Accessed 1 Feb 2020).

Grausne, J & Quetel, A-K (2018) *Fakta om offentliga måltider 2018. Kartläggning av måltider i kommunalt drivna förskolor, skolor och omsorgsverksamheter* [Facts about official Meals, 2018. Survey of meals in kommunal pre-schools, schools and care establishments). Available at <https://www.livsmedelsverket.se/globalassets/publikationsdatabas/rapporter/2018/2018-fakta-om-offentliga-maltider-2018.pdf> (Accessed 13 December 2018)

Halmstad (2016) *Samordnad varudistribution - effektivare, säkrare och miljövänligare* [Coordinated distribution of goods - more efficient, safer and more environmentally friendly] 25 Feb Available at <https://www.halmstad.se/kommunpolitik/kommunensorganisation/forvaltningar/servicekontoret/kommuntransport/varudistribution.1285.html> (Accessed 28 Feb 2021)

Hassleholm (2021) *Skolmåltider* [School meals] Available at <https://www.hassleholm.se/utbildning-och-barnomsorg/mat-i-forskola-och-skola/skolmaltider.html> (16 Mar 2021).

Holm, J (2020) *Kommunal samordnad varudistribution Skriftlig fråga 2020/21:479* [Municipal coordinated distribution of goods Written question 2020/21: 479] 13 Nov. Available at https://www.riksdagen.se/sv/dokument-lagar/dokument/skriftlig-fraga/kommunal-samordnad-varudistribution_H811479 (Accessed 9 Dec 2020)

Jordbruksverket (2017) *Sveriges utrikeshandel med jordbruksvaror och livsmedel [Sweden's foreign trade in agricultural goods and foodstuffs] 2014–2016*. Available at <https://www.jordbruksverket.se/download/18.37a1db581606d4ea7b87a9cb/1513858540402/Sveriges%20utrikeshandel%20jordbruksvaror%20och%20livsmedel%202014-2016.pdf> (Accessed 24 December 2018)

Koch, C Ascard, J., Falkenek, A, Jönsson, A ,André, CB, Fröman, E, Gotting, M. Andresen, N (2018) *Åtgärdsplan för att öka produktion, konsumtion och export av ekologiska livsmedel Rapport från ett regeringsuppdrag om ekologiska livsmedel* [Action plan to increase production, consumption and export of organic food Report from a government commission about organic foods] Available at https://www2.jordbruksverket.se/download/18.6412fcdf162e485c3c1b4ecf/1524546625771/ra18_16.pdf (Accessed 4 July 2019).

Livsmedelsverket (2013) *Good school meals: guidelines for primary schools, secondary schools and youth recreation centres*. Second Edition. EN. Available at <https://www.livsmedelsverket.se> (Accessed 3 July 2019)

Livsmedelsverket (2018a) *Fakta om offentliga måltider* [Facts about public meals] Available at <https://www.livsmedelsverket.se/maltidsfakta> (Accessed 13 December 2018).

Livsmedelsverket (2018b) *Fakta om offentliga måltider 2018 – resultat redovisade per kommun* [Facts about public meals 2018 - Results reported by municipality] Available at <https://www.livsmedelsverket.se/maltidsfakta#Livsmedelsverkets%20kartl%C3%A4ggning%20av%20offentliga%20m%C3%A5ltider%202018> (Accessed 13 December 2018)

Livsmedelsverket (2018c) *Bilaga – Frågeformulär Frågeformulär i kartläggning av måltider i kommunalt drivna förskolor, skolor och omsorgsverksamheter – 2018* (Questionnaire for survey of meals in communally operated pre-schools, schools and care workplaces -2018) Available at <https://www.livsmedelsverket.se/globalassets/matvanor-halsa-miljo/maltider-vard-skola-omsorg/fakta-om-offentliga-maltider/fakta-om-offentliga-maltider-2018-frageformular.pdf> (Accessed 15 December 2018)

Livsmedelsverket (2019a) *Matsvinnsmätning i storkök* [Food waste measurement in the large kitchen] 25 June 2019 Available at <https://www.livsmedelsverket.se/matvanor-halsa--miljo/maltider-i-vard-skola-och-omsorg/matsvinn-i-storkok/matsvinnmatning-i-storkok?AspxAutoDetectCookieSupport=1> (Accessed 11 Dec 2019)

Livsmedelsverket (2020) *Ny nationell kartläggning 2021* [New National Survey 2021] Available at <https://www.livsmedelsverket.se/matvanor-halsa--miljo/maltider-i-vard-skola-och-omsorg/fakta-om-offentliga-maltider> (Accessed 8 March 2021)

Löfven, S., & Lövin, I. (2017). *Policy for global development in the implementation of the 2030 Agenda*. Available at https://www.government.se/4ab8e7/contentassets/338057ee724641cda2e54840688d3e21/pgu_skrivelse_engelska_slutgiltig_181011_nyttomslag-002.pdf (downloaded 17 December 2018)

Lund (2019) *Ekologisk mat i Lunds kommun* [Organic food in the municipality of Lund] May 21, 2019. Available at <https://www.lund.se/bygga-bo--miljo/klimat-miljo-och-hallbarhet/miljoprogram---lundaeko-ii/ekologisk-mat-i-lunds-kommun-emil/> (Accessed 4 July 2019)

Lydahl, E (2017) *Våra goda måltider. Inom Skola Och Förskola I Halmstads Kommun* [Our Good Meals In School And Preschool In Halmstad Municipality] 1 May 2017 Available at https://www.halmstad.se/download/18.1c7df5b916e189074ac365ad/1574418362443/Va%CC%8Ara%20goda%20ma%CC%8Altider_webbanpassad.pdf (Accessed 16 Mar 2021)

Ministry of Enterprise and Innovation (2017) *A long-term food strategy for Sweden Press Release* . EN. 6 Apr. . Available at <https://www.government.se/articles/2017/04/a-long-term-food-strategy-for-sweden/> (Accessed 4 July 2019).

Nykvist, A-C (2006) *Jordbruksdepartementet Aktionsplan för mer ekologisk mat ska tas fram (Ministry of Agriculture Action plan for more organic food) Press release 16 May 2006* Available at <https://www.regeringskansliet.se/contentassets/62014bdc2514487d91b37bc1307ad860/pressmeddelanden-2002-2006---ann-christin-nykvist> (Accessed 27 December 2018)

Orebro (2021) *Måltider i kommunens kök och serveringar* [Meals in the municipality's kitchen and restaurants] February 4, 2021. Available at <https://www.orebro.se/fordjupning/fordjupning/sa-arbetar-vi-med/maltider-i-kommunens-kok-och-serveringar.html> (Accessed 16 Mar 2021)

Persson, K (2013) *Genomförande av samordnad varudistribution. Förslag till beslut. Kommunstyrelsens beslut* [Implementation of coordinated goods distribution . Proposition for resolution. Municipal board decision] 16 Jan. Available at <http://miljobarometern.huddinge.se/content/docs/klimatochluft/samordnadvarudistribution.pdf> (Accessed 28 Feb 2021).

Quetel, A-K (2020) *Vi nystartar med en rivstart!* [We commence with a flying start!] Available at <http://maltidsbloggen.se/2020/01/vi-nystartar-med-en-rivstart/> (Accessed 15 Jan 2020)

Regeringen (2006) *Ekologisk produktion och konsumtion – Mål och inriktning till 2010* [Organic production and consumption - Objectives and focus for 2010] 16 Mar 2006. Available at <https://www.regeringen.se/contentassets/c6196df78e394d59881dc094ad0ac96a/ekologisk-produktion-och-konsumtion---mal-och-inriktning-till-2010> (Accessed 24 December 2018)

Regeringskansliet (2017a) *En livsmedelsstrategi för Sverige- Kortversion* [A food strategy for Sweden – Short version] Available at <https://www.regeringen.se/informationmaterial/2017/01/kortversion-en-livsmedelsstrategi-for-sverige> (accessed 19th December 2018)

Regeringskansliet (2017b) *A National Food Strategy for Sweden – more jobs and sustainable growth throughout the country Short version of Government bill 2016/17:104*. EN. Available at

https://www.government.se/498282/contentassets/16ef73aaa6f74faab86ade5ef239b659/livsmedelsstrategin_kortversion_eng.pdf (accessed 19th December 2018).

Riksdagen (2010) *Rapporter från riksdagens Uppföljning av ekologisk produktion och offentlig konsumtion* [Reports from the Riksdag's follow-up of organic production and public consumption] 1 Nov 2010 Available at http://www.riksdagen.se/sv/dokument-lagar/dokument/rapport-fran-riksdagen/uppfoljning-av-ekologisk-produktion-och-offentlig_GY0WRFR1/html (accessed 24 December 2018)

Skolmatsakademin (2017) *På gång i Skolmatsakademin hösten 2017*. [Under way at the School Food Academy in autumn 2017] Available at <https://www.vgregion.se/contentassets/1591036907bb4b4285eece08d3a6a3eb/pa-gang-i-skolmatsakademin-var-2017.pdf> (downloaded 5 February 2019)

Statistiska centralbyrån (2013) *Befolkningsstatistik Kvartal 3 2013* [Population Statistics Quarter 3 2013] Available at <https://web.archive.org/web/20131223020533/http://www.scb.se/sv/Hitta-statistik/Statistik-efter-amne/Befolkning/Befolkningens-sammansattning/Befolkningsstatistik/25788/25795/Kvartals--och-halvarsstatistik---Kommun-lan-och-riket/Kvartal-3-2013/> (Accessed 1 Dec 2019)

Upphandlingsmyndigheten (2019a) *Halvering av körsträcka med upphandlad distributionscentral* [Halving the mileage with the procured distribution center] Newsletter, 28 February 2019

Available at https://www.upphandlingsmyndigheten.se/hallbarhet/stall-hallbarhetskrav/framgangsfaktorer/halvering-av-korstracka-med-upphandlad-distributionscentral/?utm_campaign=nyhetsbrev_190228&utm_content=unspecified&utm_medium=email&utm_source=apsis (Accessed 28 February 2019)

Upphandlingsmyndigheten (2019b) *Uppdrag att förstärka kompetensen på området Livsmedel och måltidstjänster Slutrapport Regeringsuppdrag 2017-2018* [Assignments to strengthen competence in the area food and meal services - final report government assignment 2017-2018] Available at <https://www.upphandlingsmyndigheten.se/globalassets/om-oss/regeringsuppdrag/rapporterade-regeringsuppdrag/uhm-2016-0151-uppdrag-att-forstarka-kompetensen-pa-området-livsmedel-och-maltidstjanster.pdf>

Upphandlingsmyndigheten (2019c) *Fyra viktiga steg för hållbar upphandling av livsmedel* [Four important steps for sustainable procurement of food] 10 October 2019. Available at https://www.upphandlingsmyndigheten.se/aktuellt/fyra-viktiga-steg-for-hallbar-upphandling-av-livsmedel/?utm_campaign=nyhetsbrev_191010&utm_content=unspecified&utm_medium=email&utm_source=apsis

Upphandlingsmyndigheten (2021) *Matnyttigt och samhällsnyttigt - Rapport om hur strategiska offentliga inköp av livsmedel bidrar till samhällsnytta* [Useful and socially beneficial - Report on how strategic public procurement of food contributes to the good of society] Available at

<https://www.upphandlingsmyndigheten.se/globalassets/dokument/publikationer/rapp-ort-matnyttigt-och-samhallsnyttigt.pdf> (Accessed 1 July 2021)

Växjö (2019) *Mat och hållbara måltider i skola och förskola* [Food and sustainable meals in school and preschool] August 9, 2019 Available at

<https://vaxjo.se/sidor/forskola-och-skola/mat-och-hallbara-maltider.html> (Accessed 22 Nov 2019)

Ystad Kommune (2014) *Allt mer livsmedel från lokåla producenter*

[More food from local producers] 13 Feb 2014. Available at

https://www.ystad.se/globalassets/dokument/sam/kostenheten/narproducerat_och_ekologiskt.pdf (Accessed 30 Sept 2020).

Ystad Kommune (2016) *Riktlinjer för hållbar mat i förskola, skola och fritidshem 2016-2020* [Guidelines for sustainable food in preschool, school and leisure center 2016-2020] Available at

<https://ystad.se/globalassets/dokument/sam/kostenheten/riktlinjer-for-hallbar-mat-i-forskola-skola-o-fritidshem.pdf> (Accessed 11 Sept 2020)

7.11 Government Publications – UK

Bonfield,P. (2014) *A Plan forPublic Procurement Enabling a healthy future for our people, farmers and food producers* July 2014. Available at

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332756/food-plan-july-2014.pdf (Accessed 2 November 2019)

Crown Commercial Services (2020a) *Food Framework ID: RM6131* Available at <https://www.crowncommercial.gov.uk/agreements/RM6131> (Accessed 7 July 2020)

Crown Commercial Services (2020b) *Food Supply and Delivery Platform*

Engagement Webinar 22 June 2020, Recording and Transcript. Available at

https://www.youtube.com/watch?v=2WJ_3Xw-lmg&feature=youtu.be (Accessed 7 July 2020)

DEFRA (Department for Environment, Food and Rural Affairs) (2006) *Procuring the Future*

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69417/pb11710-procuring-the-future-060607.pdf

DEFRA (2020) *Organic farming statistics 2019 - statistical notice* 28 May 2020 Available at <https://www.gov.uk/government/statistics/organic-farming-statistics-2019> (Accessed 28 Nov 2020)

Deloitte (2009) *Public Sector Food Procurement Initiative* March 2009. Available at <https://webarchive.nationalarchives.gov.uk/20090731145559/http://www.defra.gov.uk/farm/policy/sustain/procurement/pdf/090311-PSFPI-%20evaluation.pdf> (Accessed 5 Apr 2019)

Department for Education (2014a) *The Requirements for School Food Regulations 2014* 16th June 2014 Available at https://www.legislation.gov.uk/uksi/2014/1603/pdfs/uksi_20141603_en.pdf (Accessed 6 Mar 2020)

Department for Education (2014b) *New school food standards*. Available at <https://www.gov.uk/government/news/new-school-food-standards> (Accessed 6 Mar 2020)

Department for Education (2021) *Free school meals: Autumn term* 30 Mar 2021. Available at <https://explore-education-statistics.service.gov.uk/find-statistics/free-school-meals-autumn-term/2020-21-autumn-term> (Accessed 1 May 2021)

Derbyshire County Council (2021) *Our school catering service celebrates 'Food for Life Served Here' Awards*. 17 March 2021 Available at <https://www.derbyshire.gov.uk/council/news-events/news-updates/news/our-school-catering-service-celebrates-food-for-life-served-here-awards.aspx> (Accessed 1 Oct 2021)

Devon Norse (2021) *Where our food comes from*. Available at <http://www.devonnorse.co.uk/> (Accessed 1 Oct 2021)

Dimbleby, H (2020) *National Food Strategy – Part One*. July Available at <https://www.nationalfoodstrategy.org/partone/> (Accessed 8 Feb 2021)

Dimbleby, H (2021) *National Food Strategy - Independent Review – Chapter 16* Available at <https://www.nationalfoodstrategy.org/wp-content/uploads/2021/07/National-Food-Strategy-Chapter-16.pdf> (Accessed 11 August 2021)

Eatculture (2021) *Information for Parents* Available at <https://www.eatculture.co.uk/parents> (Accessed 10 Oct 2021)

Edinburgh City Council (2017) *Education, Children and Families Committee...Meals Update* 12 December 2017 . Available at [http://www.edinburgh.gov.uk/download/meetings/id/55614/item_719 -
_school_meals_update](http://www.edinburgh.gov.uk/download/meetings/id/55614/item_719_-_school_meals_update) (Accessed 21 Nov 2019)

Gove, M. & Laws, D. (2014). *Letter from Michael Gove and David Laws about universal infant school meals* 23 Jan 2014. Retrieved from [https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/274874/MINISTERIAL_LETTER_TO_PRIMARY_HEADTEACHERS -
UNIVERSAL_INFANT_FREE_SCH....pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/274874/MINISTERIAL_LETTER_TO_PRIMARY_HEADTEACHERS_-_UNIVERSAL_INFANT_FREE_SCH....pdf) (Accessed 4th February 2020)

Hampshire County Council (2019a) Hampshire County Council Catering Services (HC3S) Available at <https://www.hants.gov.uk/educationandlearning/hc3s> (Accessed 21 Nov 2019)

Hampshire County Council (2019b), *Suppliers and provenance*. Available at <https://www.hants.gov.uk/educationandlearning/hc3s/ourfood/suppliers> (Accessed 5 July 2019).

Harford, S (2015) *Letter to Sharon Hodgson MP* 23 Feb, Available at <http://www.schoolfoodplan.com/wp-content/uploads/2015/02/APPG-School-Food-Letter.pdf> (Accessed 10 Mar 2021)

Hertfordshire Catering Ltd (2019) *Three Way Collaboration for new school meat contract* 20 Dec 2019 Available at <https://hcl.co.uk/news/three-way-collaboration-for-new-school-meat-contract> (Accessed 10 Jan 2020)

House of Commons (2020a) *Written evidence submitted by The Soil Association (PRO0001)*. Available at <https://committees.parliament.uk/writtenevidence/9028/pdf/> (Accessed 1 Dec 2020)

House of Commons (2020b) *Written evidence submitted by Dynamic Food Procurement National Advisory Board (NAB)(PRO0003)* Available at <https://committees.parliament.uk/writtenevidence/9762/pdf/> (Accessed 1 Dec 2020)

House of Commons Environment, Food and Rural Affairs Committee (2021) *Public Sector Procurement of Food Sixth Report of Session 2019–21 Report*, 3 March 2021 Available at <https://committees.parliament.uk/publications/5509/documents/54917/default/>

Lancashire County Council (2018) *Procurement Title: Provision of a Food Distribution Network Procurement Option OJEU – Open Tender Procedure*. Available at <http://council.lancashire.gov.uk/documents/s138768/Appendix%20A.pdf>. (Accessed 10 Jan 2020)

Leicestershire County Council (2021) *School Food* Available at <https://www.leicestershire.gov.uk/education-and-children/schools-colleges-and-academies/school-food> (Accessed 1 Oct 2021)

Lyne, A. Beechener, S. Tregear, A. Wyatt, J. Wheeler, K. (2009) *Product Origin – Scotland”: A Review of Industry Practice and Evidence Tender Reference: RERAD/019/08* Available at <https://www.webarchive.org.uk/wayback/archive/20180520130306/http://www.gov.scot/Publications/2009/06/19141120/14> (Accessed 12 Apr 2019)

Long, R. (2018). *House of Commons Library: Briefing paper: Number 04195, 8 November 2018: School meals and nutritional standards (England)*. Available at https://dera.ioe.ac.uk/32670/1/SN04195%20%282%29_Redacted.pdf (Accessed 3 Nov 2019)

Mottershead, D. and Maréchal A. (2017), *Promotion of agroecological approaches: Lessons from other countries* a report for the Land Use Policy Group by the Institute for European Environmental Policy (IEEP). Available at <http://publications.naturalengland.org.uk/publication/4851581125656576> (Accessed 8 Dec 2019)

NAO (2006) *Smarter Food Procurement in the Public Sector. HC 963-I, Session 2005-2006: Report by the Comptroller and Auditor General*. Available at <https://www.nao.org.uk/report/smarter-food-procurement-in-the-public-sector/> (Accessed 4 Dec 2019).

North Yorkshire County Council (2014) *Supply and Delivery of Fresh and Frozen produce throughout North Yorkshire. Contract Award Notice – Official Journal, 8 Feb 2014*. Available at https://www.sell2wales.gov.wales/search/show/search_view.aspx?ID=APR032377 (Accessed 21 Nov 2019)

North Yorkshire County Council (2018) *North Yorkshire gets silver for fresh and ethical school food* February 2018 Available at <https://www.northyorks.gov.uk/news/article/north-yorkshire-gets-silver-fresh-and-ethical-school-food> (downloaded 21 Nov 2019)

Nottinghamshire County Council (2021) *School Catering* Available at <https://www.nottinghamshire.gov.uk/schoolsportal/services/school-catering> (Accessed 1 Sept 2021)

Scottish Government (2016) *Organic Ambitions: Scotland's organic action plan 2016-2020*, 27 Jan 2016. Available at <https://www.gov.scot/publications/organic-ambitions-scotlands-organic-action-plan-2016-2020/> (Accessed 8 Dec 2019)

Scottish Government (2020) *School Healthy Living Survey statistics: 2020* 8 Sep 2020 Available at <https://www.gov.scot/publications/school-healthy-living-survey-statistics-2020/pages/2/> (Accessed 1 Nov 2020)

School Food Plan (2015) *School Food Standards A practical guide for schools their cooks and caterers* Available at <http://www.schoolfoodplan.com/wp-content/uploads/2015/01/School-Food-Standards-Guidance-FINAL-V3.pdf> (Accessed 28 July 2020)

Small Business Service (2005) *Access to public procurement for small and medium enterprises Progress Report – December 2005* Available at <https://delta.bipsolutions.com/docstore/pdf/12111.pdf> (Accessed 28 July 2021)

Smith, N. Pearce, A. Judson, JP. (2014) *Estimates of Public Sector Procurement Expenditure on Food and Drink in Scotland*, 26 June 2014. <https://www.webarchive.org.uk/wayback/archive/20150219164024/http://www.gov.scot/Publications/2014/06/2619/0> (Accessed 27 Mar 2021)

Tower Hamlets Council (2019) *Report of: Debbie Jones, Corporate Director Children's Services. Recommendations for the future delivery of Contract Services – resolving the deficit position* 27 Feb 2019. Available at <https://democracy.towerhamlets.gov.uk/documents/s143598/6.5%20Contracts%20Services%20Review%20Report.pdf> (Accessed 1 Oct 2020).

UK Committee on Climate Change (2020) *Land use: Policies for a Net Zero* Available at <https://www.theccc.org.uk/publication/land-use-policies-for-a-net-zero-uk/> (4 May 2021)

Warwickshire County Council (2021) *Schools celebrate achieving 'Food for Life' awards again thanks to Educaterers!* 7 May 2021. Available at <https://headsup.warwickshire.gov.uk/heads-up-may-7-2021/celebrating-warwickshires-family-of-schools/schools-celebrate-achieving-food-for-life-awards-again-thanks-to-educaterers> (Accessed 10 Oct 2021)

7.12 Government Publications - USA

USDA (2018) *Semi-Annual Report Livestock Brazil BR 1804*, 28 Feb. Available at <https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Livestock%20and%20Pr>

[products%20Semi-annual Brasilia Brazil 2-28-2018.pdf](#) (Accessed 1 December 2018)

USDA (2019) *Food Value Chains and Food Hubs: Supporting Local Producers Through Collaborative Planning, Aggregation, and Distribution*. Available at <https://www.ams.usda.gov/services/local-regional/food-hubs> (Accessed 9 January 2019)

7.13 NGO publications – Denmark (Mostly in Danish – EN denotes English]

Note: Organisation names are in Danish – see table 1a for English translations.

Jacob Appel (2018) *Resultaterne af økologisk omlægning af storkøkkener gennem Københavns Madhus' omlægningsmetode Økoløft* [The results of organic restructuring of large kitchens through Copenhagen House of Food's reorganization method – Organic Lift] Jan 2018 Available at https://assets.website-files.com/5bd03425d8493fc9417f6568/5bf1c3d21e03a42c71965162_Beslutningsgrundlag%202017_ny%20st%C3%B8rrelse.pdf (Accessed 25 Nov 2019).

Brandt, J (2019a) *Ny regering vil fordoble økologien i Danmark* [New government will double organic in Denmark] 26 June 2019 Available at <https://nyheder.okologi.dk/politik-og-udvikling/ny-regering-vil-fordoble-okologien-i-danmark> (Retrieved 6 July 2019).

Brandt, J (2019b) *Markant vækst i foodservicesalget* [Significant growth in food service sales] September 18, 2019 Available at <https://nyheder.okologi.dk/mad-og-marked/markant-vaekst-i-foodservicesalget> (Accessed 4 March 2020).

Brandt, J (2020) *Ny analyse: Landets storkøkkener øger fokus på bæredygtighed og økologi* [New analysis: The country's commercial kitchens increase focus on sustainability and organics] 18 Sept 2020. Available at <https://nyheder.okologi.dk/mad-og-marked/ny-analyse-landets-storkokkener-satser-pa-baeredygtighed-og-okologi> (Accessed 19 Sept 2020).

Brynskov, M (2019) *5 råd til at skære ned på madspild i storkøkkener* [5 tips to cut back on food waste in large kitchens] 9 Jan 2019 Available at <https://www.kbhmadhus.dk/blog/5-rad-til-at-skaere-ned-pa-madspild-i-storkokkener> (Accessed 8 March 2019).

Concito (2019) *Ny database skal fremme klimavenlige madvaner* [New database to promote climate-friendly food habits] 6 Dec 2019. Available at <https://concito.dk/nyheder/ny-database-skal-fremme-klimavenlige-madvaner> (Accessed 11 Dec 2019).

Københavns Madhus (2016) *Nye værktøjer til offentlige indkøb af fødevarer* [New Food Procurement Tools] 3 Nov 2016. Available at <https://www.kbhmadhus.dk/nyhed/nye-vaerktojer-til-offentlige-indkob-af-fodevarer> (Accessed 27 Nov 2019)

Københavns Madhus (2019a) *Our Story* EN. Available at <https://www.kbhmadhus.dk/english/ourstory> (Accessed 8 April 2019)

Københavns Madhus (2019b) *Projekter* [Projects] Available at <https://www.kbhmadhus.dk/oekoloeft/projekter> (Accessed 27 Nov 2019)

Københavns Madhus (2019c) *Økoløft Hvidovre Projektperiode: August 2013 - august 2015* [Eco lift Hvidovre August 2013 - August 2015]. Available at <https://www.kbhmadhus.dk/projektokoloft/okoloft-hvidovre> (accessed 23 Nov 2019).

Dansk Vegetarisk Forening (2017a) *Stem på tirsdag - for dyr, mennesker og klode - se hvem der vil arbejde for plantebaseret mad her* [Vote on Tuesday - for animals, people and the globe - see who will work for plant-based food here] Available at <https://vegetarisk.dk/stem-for-dyr-mennesker-klode-her/> (Accessed 2 Dec 2017)

Dansk Vegetarisk Forening (2017b) *Vælg en kommune for at se en liste over kandidater* [Select a municipality to see a list of candidates] Available at <https://vegetarisk.dk/kandidater/kommuner/> (Accessed 15 Jan 2021).

Dansk Vegetarisk Forening (2018) *Grøn valgmulighed i de offentlige køkkener – skriv under. Alle offentlige køkkener skal tilbyde en 100 % plantebaseret valgmulighed* [Green choice in public kitchens – sign. All public kitchens must offer a 100% plant-based choice] Available at <https://vegetarisk.dk/groenvalgmulighed-2/> (Accessed 10 Jan 2019).

Dansk Vegetarisk Forening (2019) *DVF får 1.1 mio til nyt stort project* [DVF get 1.1 million for new large project] Newsletter, Dec 2019 Available at <https://mailchi.mp/vegetarisk/dvfnyhedsbrevdecember2019?e=98e3a61ef7> (Accessed 12 Jan 2020)

Dansk Vegetarisk Forening (2020) *Kampen for en grøn valgmulighed i de offentlige køkkener* [The battle for a green option in public kitchens] 28. Dec 2020. Available

at <https://vegetarisk.dk/kampen-for-en-groen-valgmulighed-fortsætter/> (Accessed 2 Jan 2021)

FødevareDanmark (2018) *FødevareDanmark: Annulleret kæmpeudbud bør få store konsekvenser* [Food industry Denmark: Cancellation of giant contract will have major consequences] 15 Feb 2018. Available at <http://fodevaredanmark.dk/presse> (Accessed 15 Feb 2018)

Greenpeace (2018a) *Greenpeace-undersøgelse: Kommunerne halter efter befolkningen på kød* [Greenpeace survey: Municipalities are lagging behind the population on meat] Available at <https://www.greenpeace.org/denmark/vi-arbejder-med/land/greenpeace-undersogelse-kommunerne-halter-efter-befolkningen-paa-koed/> (Accessed 2 Jan 2020)

Hultberg, A (2012) *Copenhagen House of Food: Copenhagen goes organic – the way towards 90% organic in public kitchens*. Sept 2012 Available at <http://www.nourishscotland.org/wp-content/uploads/2012/09/Copenhagen-House-of-Food-Conference-Nourish-2012.pdf> (Accessed 1 Mar 2021)

Kaad-Hansen, L (2019) *Facts and Figures about Danish Organics* , 18 June 2019. Available at <https://www.organicdenmark.com/facts-figures-about-danish-organics> (Accessed 8 dec 2019)

Kost og Ernæringsforbundet (2019a) *Folketingsvalg 2019* [Parliamentary elections 2019] 2 Apr 2019 Available at https://www.kost.dk/fv19?utm_campaign=unspecified&utm_content=unspecified&utm_medium=email&utm_source=apsis-anp-3 (Accessed 2 April 2019)

Kost og Ernæringsforbundet (2019b) *Sociale institutioner - Mad kan mere end at mætte* [Social institutions - Food can be more than satisfying] Available at <https://www.kost.dk/socialeinstitutioner> (Accessed 2 Apr 2019)

Kloge Fødevareindkøb.(2016a) *Kvikguide for nye indkøbere* [Quick guide for new buyers] Available at <http://wearecrunch.net/madkulturen/forside/kvikguide/> (Accessed 13 Nov 2016)

Kloge Fødevareindkøb.(2016b) *Lokale varer* [Local goods] Available at <http://xn--klogefdevareindkb-50bk.dk/forside/lokale-varer> (Accessed 25 Nov 2019)

Kloge Fødevareindkøb.(2016c) *CASE1 - Aarhus* Available at <http://xn--klogefdevareindkb-50bk.dk/cases/aarhus/baggrund/> (Accessed 25 Nov 2019)

Koszyczarek, HH (2020a) *Vegetarisk forening vil starte retssag om retten til grøn mad i det offentlige* [Vegetarian Association will start lawsuit over the right to green food in public] Available at <https://nyheder.okologi.dk/mad-og-marked/vegetarisk-forening-vil-starte-retssag-om-retten-til-gron-mad-i-det-offentlige> (Accessed 18 Sept 2020)

Koszyczarek, HH (2020b) *Regeringen vil lade den enkelte kantine selv bestemme, hvorvidt der skal serveres kød dagligt*. [The government will let the individual canteen decide for itself whether meat should be served daily]. 3 Nov 2020. Available at <https://nyheder.okologi.dk/politik-og-udvikling/okologer-aergrer-sig-over-at-regeringen-traekker-vegetarforslag-tilbage> (Accessed 3 Nov 2020)

Madkulturen (2016) *Baggrundsviden om Bornholms Regionskommune* [Background knowledge about Bornholm Regional Municipality] (2016) Available at <http://xn--klogefdevareindkb-50bk.dk/cases/bornholm/baggrund/> (Accessed 7 July 2019).

Økologisk Landsforening (2014) *Fælles fødevareindkøb: Drop ensretningen og skab værdi, lokal involvering, kvalitet og effektivitet* [Drop the unification and create value, local involvement, quality and efficiency], June 2014 Available at <https://www.ft.dk/samling/20131/almdel/lf/bilag/334/1391739.pdf> (Accessed 10 Oct 2021)

Økologisk Landsforening (2017a) *Mere økologi i kommunens køkkener CASE – Aarhus* [More organic in the municipality's kitchens - CASE Aarhus January 16, 2017. Available at <http://okologi.dk/oekovalg-2017/seks-forslag-til-mere-okologi-i-din-kommune/1-omlaegning-til-oekologi-i-kommunale-koekkener/case-aarhus> (Accessed 1 Aug 2017)

Økologisk Landsforening (2017b) *Mere økologi i kommunens køkkener - CASE – Randers* [More organic in the municipality's kitchens - CASE – Randers] 2017 <https://okologi.dk/politik/kommunal-oekologi/forslag-til-mere-okologi-i-din-kommune/1-mere-okologi-i-kommunens-koekkener/case-randers> (Accessed 1 Aug 2017)

Skouboe, I. (2016) *Boom i øko-salget til professionelle køkkener* [Boom in eco-sales for professional kitchens] August 31, 2016. Available at <https://okologi.dk/newsroom/2016/08/boom-i-oeko-salget-til-professionelle-koekkener-2> (Accessed 9 July 2019)

Skouboe, L. (2018) *2.400 professionelle køkkener har nu et øko-spisemærke* [2,400 professional kitchens now have an organic label] 16 Mar 2018 <https://okologi.dk/newsroom/2018/03/2-400-professionelle-koekkener-har-nu-et-oeko-spisemaerke> (Accessed 8 July 2019).

Zafirakos, S (2017) *Fagforbund og økologer samarbejder om 'ØkoValg 2017'* [Trade unions and organic people collaborate on 'Organic Vote 2017'] 17 Aug 2017. Available at <https://www.kost.dk/fagforbund-og-oekologer-samarbejder-om-oekovalg-2017> (Accessed 3 Dec 2019)

7.14 NGO Publications – Sweden (Mostly in Swedish. EN shows English)

Bergbom, K *Trapped in the kitchen of the world. The situation for migrant workers in Thailand's poultry industry*. EN. Available at http://www.swedwatch.org/wp-content/uploads/2016/11/76_thaikyckling_151123_ab.pdf (Accessed 12 January 2019)

Carlberg, J & Halling, N (2019) *Ekologiskt jordbruk ökar i Sverige* [Organic farming is increasing in Sweden] Jul 30, 2019. Available at <https://www.mynewsdesk.com/se/krav/pressreleases/ekologiskt-jordbruk-oekar-i-sverige-2898354> (Accessed 3 Dec 2019)

Ekomatcentrum (2010) *Ekologiskt i offentliga storhushåll tio goda exempel 2010* [Organic in Public Dining Rooms – Ten good examples 2010]. Available at <http://www.ekomatcentrum.se/files/10GodaExempel2010-LR.pdf> (Accessed 16 January 2019).

Ekomatcentrum (2010) *Ekologiskt i offentliga Storhushåll, 2010* [Organic in the Public Large Kitchen, 2010] 27 Apr. Available at <http://ekomatcentrum.se/wp-content/uploads/2016/06/Rapport-kommunen%C3%A4t-2010.pdf> (Accessed 31 December 2018)

Ekomatcentrum (2012) *Ekologiskt i offentliga storhushåll 2011* [Organic in Public Large Kitchens, 2011], 15 May 2012. Available at <http://ekomatcentrum.se/wp-content/uploads/2016/06/Rapport-kommunen%C3%A4t-2012.pdf> (Accessed 10 February 2019).

Ekomatcentrum (2013) *Ekologiskt i offentlig storhushåll 2012* [Organic in Public Large Kitchens] 27 May 2013. Available at <http://ekomatcentrum.se/wp-content/uploads/2016/06/Rapport-kommunenkat-2013-EMC.pdf> (Accessed 10 February 2019)

Ekomatcentrum (2014) *2014 2013 års siffror. Ekologiskt i offentlig storhushåll 2013* [Organic in public large kitchens, 2013] 14 May 2014 Available at <http://ekomatcentrum.se/wp-content/uploads/2016/06/Rapport-kommunen%C3%A4t-2014-2.pdf> (Accessed 10 February 2019)

Ekomatcentrum (2015) *Ekologiskt i offentliga storhushåll 2014* [Organic in Public Large Kitchens] 2 June 2015 Available at <http://ekomatcentrum.se/wp-content/uploads/2016/06/Rapport-kommunen%C3%A4t-2015.pdf> (Accessed 10 February 2019)

Ekomatcentrum (2016) *Ekologiskt i offentliga storhushåll 2015* [Organic in public large kitchens, 2015] 30 May 2016. Available at <http://ekomatcentrum.se/wp-content/uploads/2016/06/Kortrapport-Ekomatsligan-2016-1.pdf> (Accessed 10 February 2019)

Ekomatcentrum (2017) *Marknadsrapport. Ekologiskt i offentlig sektor 2017* [Market Report. Organic in Public Sector] May 2017 Available at <http://ekomatcentrum.se/wp-content/uploads/2016/06/Rapport-EMC-2017-2.pdf> (Accessed 10 February 2019)

Ekomatcentrum (2018a) *Marknadsrapport. Ekologiskt i offentlig sektor 2018* (Market Report. Organic in the Public Sector) Available at <http://ekomatcentrum.se/wp-content/uploads/2018/05/Rapport-EMC-2018-4.pdf> (Accessed 4 Jan 2020).

Ekomatcentrum (2018b) *Lilla Ekomatsligan Ekologiskt i offentlig sektor 2018* (Little Organic Food League. Organic in Public Sector) November 2018 Available at <http://ekomatcentrum.se/wp-content/uploads/2018/12/Rapport-Lilla-Ekomatsligan-EMC-2018-1.pdf> (accessed 10 February 2019)

Ekomatcentrum (2019a) *Ringa merkostnad för 60 procent ekologisk offentlig konsumtion* [Low cost for 60 per cent organic public consumption] Press Release: 19 Mar 2019 Available at <https://www.pressmachine.se/pressrelease/view/ringa-merkostnad-for-60-procent-ekologisk-offentlig-konsumtion-10849> (Accessed 27 Nov 2019)

Ekomatcentrum (2019b) *Ekologiskt och svenskt ökar i offentlig sektor!* [Organic and Swedish increase in public sector!] 21 Aug 2019 Available at <https://www.pressmachine.se/pressrelease/view/ekologiskt-och-svenskt-okar-i-offentlig-sektor-13980> (Accessed 29 Nov 2019)

Ekomatcentrum (2021) *Marknadsrapport 2021 Ekologiskt I Offentlig Sektor 2020* [Market Report 2021 Organic In The Public Sector 2020] Available at <http://ekomatcentrum.se/wp-content/uploads/2021/05/Rapport-Marknadsrapport-EMC-2021-PDFny-1.pdf> (Accessed 28 Aug 2021)

Ekomatcentrum & Trafikverket (2012) *Lokal distribution av livsmedel - Goda exempel* (Local distribution of food – good examples) Available at <https://www.upphandlingsmyndigheten.se/globalassets/upphandling/goda-exempel/godaexempellogistikprojektet2012.pdf> (Accessed 15 January 2019)

Ekoweb (2019a) *Ekologisk livsmedelsmarknad Rapport om den ekologiska branschen sammanställd av Ekoweb.nu* [Organic food market Report on the ecological industry compiled by Ekoweb.nu], 31 Jan 2019. Available at <http://www.ekoweb.nu/attachments/67/45.pdf> (Accessed 6 July 2019).

Ekoweb (2019b) *Nytt rekordår för eko i Sverige men...Prognosen halveras - skrivs ner med 1 miljard per år* [New record year for eco in Sweden but ...The forecast is halved - written down by 1 billion a year] 1 Feb 2019. Available at <http://www.ekoweb.nu/?p=11792> (Accessed 8 Dec 2019)

Energikontorsydost (2018), *Samordnad-varudistribution (Municipal coordinated distribution of goods)*. Available at <http://www.energikontorsydost.se/samordnad-varudistribution> (Downloaded 17th December 2018)

Fröman, E (2008), *Ekologiskt i offentliga storhushåll* [Organic in Public Kitchens] Ekocentrum – Informationscentrum för Ekologiska Produkter 1 December 2008. Available at <http://www.ekomatcentrum.se/files/Rapportkommunenkat2008.pdf> (Accessed 17 December 2018)

Halling, N (2016) *KRAV-bönder i Sverige 2015, uppdelat per län* [KRAV farmers in Sweden 2015, divided by county] Mar 16, 2016. Available at <https://www.mynewsdesk.com/se/krav/images/krav-boender-i-sverige-2015-uppdelat-per-laen-539077> (Accessed 3 Dec 2019)

Kosava (2018) *Samordnad varudistribution* [Coordinated Distribution of Goods] Available at <http://www.kosava.se/nyheter/> (Accessed 17 December 2018)

Kost Och Naring (2016) *Grossistbarometern 2016* [The Wholesaler Barometer 2016]. Available at <https://www.kostochnaring.se/vart-arbete/upphandling/grossistbarometern/> (Accessed 27 Feb 2021)

KRAV (2014) *Market Report, 2014*. EN. Available at <http://arkiv.krav.se/mrapport/krav-market-report-eng.pdf> (Accessed at 2 December 2018)

LRF (2012) *Den offentliga måltiden Att vara leverantör till offentlig sektor* [The public meal Being a supplier to the public sector] Available at https://www.lrf.se/globalassets/dokument/politik--paverkan/marknad-and-mervarden/offentlig-upphandling/den-offentliga-maltiden_web.pdf (Accessed 2 Dec 2018)

Mansouri, S (2020) *Sveriges mest djurvänliga kommuner 2020* [Sweden's most animal-friendly municipalities in 2020] May 27, 2020. Available at <https://www.djurensratt.se/blogg/sveriges-mest-djurvanliga-kommuner-2020> Accessed 11 June 2020

Nationellt Centrum för Kommunal Samordnad Varudistribution (2019) *Om Nationellt centrum för kommunal samordnad varudistribution* [About the National Centre for Coordinated Kommunal Distribution] Available at <http://www.samordnadvarudistribution.com/om-nationellt-centrum/> (Accessed 14 Jan 2020)

Nationellt Centrum för Kommunal Samordnad Varudistribution (2020) *Dansk kommun besökte Alwex i Växjö* [The Danish municipality visited Alwex in Växjö] 12 March 2020. Available at <http://www.samordnadvarudistribution.com/dansk-kommun-besokte-alwex-i-vaxjo/> (Accessed 12 Sept 2020)

Ryegård, O (2013) *Offentlig marknad för livsmedel i Sverige samt import av livsmedel till aktörer i offentlig sektor* (Public market for food in Sweden and imports of food for public sector actors) Agroidé AB 3 Oct 2013 Available at <https://www.livsmedelsverket.se/globalassets/matvanor-halsa-miljo/maltider-var-d-skola-omsorg/fakta-om-offentliga-maltider/rapport-lrf-offentlig-marknad-2013.pdf> (Accessed 11 January 2018)

Skolmatens vänner (2014) *Kartläggning av Sveriges kommuner gällande skolmåltidsverksamheten i förskolan, grundskolan och gymnasiet, mars-maj 2014* [Mapping of Sweden's municipalities current school meal activities in preschool, primary and secondary school]. Available at <https://www.livsmedelsverket.se/globalassets/matvanor-halsa-miljo/maltider-var-d-skola-omsorg/fakta-om-offentliga-maltider/skolmatens-vanner-kartlaggning-av-skolmaltidsverksamheten-2014.pdf> (Accessed 5 Mar 2021)

Svensk Kött (2018) *Kartläggning av Sveriges kommuners upphandling av kött* [Mapping of Sweden's municipalities procurement of meat] 8 Aug. Available at <https://www.mynewsdesk.com/se/svenskkoett/documents/kartlaeggning-av-sveriges-kommuners-upphandling-av-koett-2018-80792> (Accessed 7 Feb 2021)

7.15 NGO Publications – UK

APSE (2019) *Education Catering Trend Analysis 2018/2019* Dec 2019 Available at <https://apse.org.uk/apse/index.cfm/members-area/briefings/2019/19-51-education-catering-trend-analysis-2018-19/> (Accessed 6 May 2021)

Compton, R. (2014) *Good Food For London 2014*. Available at <https://www.sustainweb.org/secure/GoodFoodForLondon2014.pdf> (Accessed 20 Nov 2019)

Dalmeny, K. Reynolds, B & Williams, H (2011) *Good Food for London 2011 October/November 2011*. Available at https://www.sustainweb.org/secure/GoodFoodForLondon_lowres_nov11.pdf (Accessed 20 Nov 2019)

Davenport, S. *Good Food for London, 2019*, Oct 2019 Available at https://www.sustainweb.org/publications/good_food_for_london_2019/ (Accessed 20 Nov 2019)

Dibb, S (2014) *Good food on the public plate*, 8 Apr, 2014. Available at <https://www.eating-better.org/blog/39/Good-Food-on-the-Public-Plate.html> (Accessed 6 Nov 2019)

Food for Life (2013). *Catering Mark Standards Manual Version 2.0 2013*. <http://www.sacert.org/LinkClick.aspx?fileticket=NVJuAl2M8MU%3D&tabid=1764> (Accessed 6 Nov 2019).

FFLP (Food for Life Partnership). (2010). *Return of the Turkey Twizzler? How cost cuts threaten the school food revolution*, Soil Association, Bristol. Retrieved from <http://www.foodforlife.org.uk/LinkClick.aspx?fileticket=GXgaF29JZ78%3d&tabid=118>

:

FFLP (2011). *Good food for all: The Impact of the Food for Life Partnership*. Available at <http://www.foodforlife.org.uk/LinkClick.aspx?fileticket=YyUBCvfUWCc%3D&tabid=310> (Accessed 1 Nov 2019).

FFLP. (2013). *Food for Life Partnership: How to achieve the Bronze Food for Life Partnership Award Criteria and Guidance*. Retrieved from <http://www.foodforlife.org.uk/~media/files/general/bronzecga416pp21aug2013web.pdf>

Fookes, C. (2008) *Georgie Porgie Pudding and Pie Exposing the truth about nursery food*. Available at https://www.foodforlife.org.uk/~media/files/policyreports/policy_report_2008_georgie_porgie.pdf (Accessed 1 Dec 2019)

Guerlain, M (2018) *Good Food for London 2018* 5 November 2018 Available at https://www.sustainweb.org/publications/good_food_for_london_2018/ (Accessed 20 July 2019)

Institute of Grocery Distribution(2017) *UK grocery & foodservice wholesaling 2017 Sector performance & statistics*. 1 Feb 2017 Available at <https://www.igd.com/Portals/0/Downloads/Events/UKGroceryFoodserviceWholesaling2017.pdf> (Accessed 1 March 2020)

Jones M, Pitt H, Oxford L, Orme J, Gray S, Salmon D, Means R, Weitkamp E, Kimberlee R & Powell J (2016) *Food for Life: a Social Return on Investment Analysis of the Locally Commissioned Programme. Full Report*. UWE Bristol. Available at <https://www.foodforlife.org.uk/~media/files/evaluation%20reports/4foodforlifelcssroifullreportv04.pdf> (Accessed 4 Nov 2019)

Kersley, H., & Knuutila, A. (2011). *The benefits of procuring school meals through the Food For Life Partnership: An economic analysis*. London: New Economics Forum. Available at <https://www.foodforlife.org.uk/about-us/~media/files/evaluation%20reports/fflp-nef----benefits-of-local-procurement.pdf> (Accessed 4 June 2016)

McKendrick, J. H., Bouse, D., Connel, D., Ferguson, J., Graham, K., Marshal, K., ... & Marchbank, J. (2019). *Are pupils being served? A secondary review of the sector's evidence base on school meal provision at lunchtime in Scotland*. Available at <https://www.gcu.ac.uk/gsbs/media/gcu/gsbs/SPIRU%20Report%20for%20Assist%20FM%20190826.pdf> (Accessed 27 Mar 2021)

Michaels, S (2006) *Best practice in sustainable public-sector food procurement. Commissioned by Food Links UK, funded by Defra*, June 2006. Available at <http://www.localfood.org.uk/library/Defra-FLUK%20best%20practice%20final%20June%2006.pdf> (Accessed 15 July 2019)

Nelson, M., & Nicholas, J. (2006). First annual survey of take up of school meals in England. *London. School Food Trust*. Available at https://www.researchgate.net/profile/Michael_Nelson12/publication/265755030_First_annual_survey_of_take_up_of_school_meals_in_England/links/5630bd2d08ae1bdc_ebcf2383.pdf (Accessed 3 Nov 2019).

Nelson, M., Nicholas, J., Wood, L & Russell, S.(2011) *Sixth annual survey of take up of school lunches in England, July 2011*. Available at

https://www.researchgate.net/profile/Michael_Nelson12/publication/268051543_Fifth_Annual_Survey_of_Take_up_of_School_Lunches_in_England/links/5538ffda0cf247b8587e9dc1.pdf (Accessed 3 Nov 2019)

Nelson, M., Nicholas, J., Riley, K & Wood, L (2012) *Seventh annual survey of take up of school lunches in England* July 2012. Available at https://www.researchgate.net/profile/Michael_Nelson12/publication/242311950_Seventh_Annual_Survey_of_Take-up_and_School_Lunches_in_England/links/56387c9a08ae78d01d398770/Seventh-Annual-Survey-of-Take-up-and-School-Lunches-in-England.pdf (Accessed 3 Nov 2019)

Obesity Action Scotland (2020) *Primary School Meals in Scotland 2020. A snapshot and a future vision*, Sept. Available at https://www.obesityactionsotland.org/media/1507/eating_not_feeding_2020_ts.pdf (Accessed 2 Apr 2021).

Oliver-Larkin, M & Luck, A (2020) *Response, Resilience and Recovery: London's Food Response to Covid-19* Available at <https://www.sustainweb.org/publications/response-resilience-recovery-2020/> (Accessed 4 Sept 2021)

Parente, S.(2016) *Good Food for London 2016*. Available at <https://www.sustainweb.org/secure/GoodFoodForLondon2016.pdf> (Accessed 1 Nov 2019)

Sellen, P., Huda, N., Gibson, S., & Oliver, L. (2018). *Evaluation of Universal Infant Free School Meals*. January 2018. Available at https://laca.co.uk/sites/default/files/attachment/evaluation_of_universal_infant_free_school_meals_.pdf (Accessed 1 Mar 2019)

Soil Association (2003) *Food for Life Healthy Local Organic School Meals* https://www.foodforlife.org.uk/~/_media/files/policyreports/food_for_life_report_2003.pdf (Accessed 1 Apr 2018)

Soil Association (2006) *Setting the standard How Food for Life, a Soil Association pilot project, set the standard for school meals and food education* https://www.soilassociation.org/media/4918/policy_report_2006_setting_standard.pdf (Accessed 1 Apr 2018)

Soil Association (2007) *Not what the doctor ordered How junk food in hospitals and sports centres is undermining the drive for healthier living* https://www.soilassociation.org/media/4912/policy_report_2007_not_what_doctor_ordered.pdf (Accessed 1 Apr 2020).

Soil Association (2011) *Food for Life Catering. Fresh food you can trust.*

Soil Association (2013) *Organic food and farming A driver for sustainable development in Scotland with learning from Denmark.* Available at <https://web.archive.org/web/20150103180953/https://www.soilassociation.org/LinkClick.aspx?fileticket=3JrEn2Saxxg%3D&tabid=313> (Accessed 10th March 2021)

Soil Association (2014) *ARYE (Annual Report and Accounts for the Year Ending) 31st March 2014*

Soil Association (2017) *ARYE, 31st Mar 2017*

Soil Association (2018a) *ARYE 31st Mar 2018*

All available at <https://www.gov.uk/government/organisations/companies-house>

Soil Association (2018b) *Food For Life Bronze Award Criteria and Guidance* Available at

[https://www.foodforlife.org.uk/~media/files/criteria%20and%20guidance/893-00-ffl-criteria_layout-final-\(2\).pdf](https://www.foodforlife.org.uk/~media/files/criteria%20and%20guidance/893-00-ffl-criteria_layout-final-(2).pdf) (Accessed 7 November 2018)

Soil Association (2019a) *Organic Market 2019* Available at

<https://www.soilassociation.org/media/18224/omr-report-2019-interactive.pdf> (Accessed 4 July 2019)

Soil Association (2019b) *Food for Life Scotland 2018-19* Available at

<https://www.soilassociation.org › media › ffls2018-19reportweb> (Accessed 8 Dec 2019)

Soil Association (2019c) *Food for Life Served Here Handbook 2019 - Schools.*

Available at <https://www.soilassociation.org/media/20184/fflsh-standards-handbook-schools.pdf> (Accessed 9 July 2020).

Soil Association (2019d) *Schools need plant-based day 17 May 2019.* Available at

<https://www.soilassociation.org/news/2019/may/17/plant-based-protein-day-needed-on-school-menus/> (Accessed 1 Dec 2019).

Soil Association (2019e) *Green Kitchen Standard Handbook 2019* Available at

https://www.foodforlife.org.uk/~media/files/fflsh%20and%20gks/2018%20standards/001-064_sa_gks_handbook_screen_v1_spreads.pdf (Accessed 3 Feb 2021)

Soil Association (2019f) *Celebrating 10 years - local authority: Havering* Available at

https://foodforlife.org.uk/~media/files/fflsh%20and%20gks/ealy%20adopters/haverin g/haverin g-case-study_final.pdf

Soil Association (2020) *Shortening Supply Chains: Roads to Regional Resilience*, June 2020 Available at <https://www.friendsprovidentfoundation.org/library/resources/shortening-supply-chains-roads-to-regional-resilience/> (Accessed 6 July 2020)

Soil Association (2019g) *State of the Nation. Children's food in England, 2019* Available at https://www.foodforlife.org.uk/~media/files/sotn/sotn_2019.pdf (Accessed 1 Dec 2020)

Soil Association (2021a) *Green Kitchen Standard Case Studies* Available at <https://www.foodforlife.org.uk/catering/green-kitchen-standard/case-studies> (Accessed 3 Feb 2021)

Soil Association (2021b) *Organic Market 2021* Available at <https://www.soilassociation.org/certification/market-research-and-data/the-organic-market-report-2021/> (Accessed 15 Oct 2021)

Soil Association (2021c) *Our impact - Food for Life Served Here, 2020 – 2021*. Available at <https://www.foodforlife.org.uk/~media/files/evaluation%20reports/fflsh-impact-report-2021.pdf> (Accessed 10 Oct 2021)

Westcott, R (2020) *National action is needed for councils to tackle food's role in the climate and nature emergency* 18 Nov. Available at <https://www.sustainweb.org/news/nov20-councils-and-climate-change/> (Accessed 28 Dec 2020)

WWF (2020) *Most brands fail to fully support sustainable palm oil adding to destruction of nature, WWF Scorecard shows* 17 Jan 2020. Available at https://wwf.panda.org/discover/our_focus/food_practice/sustainable_production/palm_oil/news_updates/?358670/Most-brands-fail-to-fully-support-sustainable-palm-oil-adding--to-destruction-of-nature-WWF-Scorecard-shows (Accessed 15 Sept 2021)

WRAP (2011) *Final Report Food waste in schools* January 2011. Available at https://dgevesch-ni.de/wp-content/uploads/2019/05/wrap_Food-waste-in-schools-full_Final-report_2011.pdf (Accessed 10 April 2021)

WRAP (2019) *Hospitality and Food Service Action Plan UK Food Waste Reduction Roadmap*, March 2019 http://www.wrap.org.uk/sites/files/wrap/WRAP_hospitality_and_food_service_roadmap_AW_Rev_1.pdf (Accessed 5 June 2020)

7.16 News & websites - UK

APSE (2021) *Annual Service Awards 2021 - Announcing the winners!* Available at <https://www.apse.org.uk/apse/index.cfm/events/apse-annual-service-awards-2021/pse-annual-service-awards-2021-announcing-the-winners/> (Accessed 24 Oct 2021)

Arnaud, S (2019) *School dinners at risk due to post-Brexit shortages*. 29 Oct 2019 Available at <https://www.pressandjournal.co.uk/fp/news/highlands/1876279/school-dinners-at-risk-due-to-post-brexit-shortages> (Accessed 4 Jan 2020)

Bioeactual (2020) *Organic Market in the UK: "New figures make happy reading for anyone involved in organic"* 23 Apr 2020. Available at <https://www.bioecoactual.com/en/2020/04/23/organic-market-in-the-uk/> (Accessed 29 Nov 2020)

Carrington, D (2020) *UK school and hospital caterers vow to cut meat served by 20% Public sector pledge said to target removal of 9m kg of meat a year from UK meals*. Available at <https://www.theguardian.com/environment/2020/apr/16/school-and-hospital-caterers-vow-to-cut-meat-served-by-20> (Accessed 18 April 2020)

Coughlan, S (2017) *Corbyn promises free primary school meals for all*, 6 April 2017. Available at <https://www.bbc.co.uk/news/education-39504339> (downloaded 10 February 2019)

Foad, D (2020) *20% less meat - in the mood for action* 12 Apr 2020. Available at <https://www.publicsectorcatering.co.uk/in-depth/20-less-meat-mood-action> (Accessed 28 Dec 2020).

Foad, D (2021) *Scotland set to extend free school meals to all primary-age children*. Available at <https://www.publicsectorcatering.co.uk/news/scotland-set-extend-free-school-meals-all-primary-age-children> (Accessed 17 Mar 2021).

LACA (2021) *The LACA Awards for Excellence 2021* Available at <https://laca.co.uk/awards> (Accessed 24 Oct 21)

Manson, J (2018) *Sweden's Organic Market Grows 9.3% to be worth euros 2.8 bn*. 22 Feb 2018. Available at <https://www.naturalproductsglobal.com/breaking-news/swedens-organic-market-grows-9-3-worth-e2-8bn/> (Accessed 8 Dec 2019)

Manson, J (2019) *Swedish organic market growth slows sharply as shoppers switch focus to other ethical labels*. 21 Feb 2019 Available at <https://www.naturalproductsglobal.com/europe/swedish-organic-market-growth-slows-sharply-as-shoppers-switch-focus-to-other-ethical-labels/> (Accessed 8 December 2019)

MacNeill, M (2010) *GO Interview – Ian Taylor, Government Opportunities*, March 2010, pp. 50-51

Organic Market Info (2018) *UK: organic market worth £2.2 billion*, 20 Feb 2018 Available at <https://organic-market.info/news-in-brief-and-reports-article/uk-organic-market-worth-2-2-billion.html> (Accessed 8 Dec 2019)

Osborn, R (2020) *Fresh-range is now closed*. Available at <https://www.fresh-range.com/close/index.html> (Accessed 3 March 2021)

Pathiaki, K (2017) *Caterlink becomes first school caterer to receive Soil Association's Green Kitchen Standard* 8 Dec Available at <https://www.thecaterer.com/news/foodservice/caterlink-becomes-first-school-caterer-to-receive-soil-associations-green-kitchen-standard> (Accessed 3 Feb 2021)

Peck, T (2017) Theresa May U-turns on scrapping free primary school meals *The Independent* 20 June 2017 available at <https://www.independent.co.uk/news/uk/politics/theresa-may-free-school-meals-queens-speech-axed-u-turn-general-election-conservatives-a7799541.html> (Accessed 10 February 2019)

Public Sector Catering (2021) *Awards 2021* Available at <https://www.publicsectorcatering.co.uk/awards> (Accessed 24 Sept 2021)

Randerson, J (2006) *Forget organics, just eat more veg, says food adviser* *Guardian*, 21 Feb 2006. Available at <https://www.theguardian.com/uk/2006/feb/21/schools.schoolmeals> (Accessed 1 Jan 2017)

Rush, J & Whitfield, S (2021) *Brexit: what does it mean for public procurement? - updated January 2021* Available at <https://www.traverssmith.com/knowledge/knowledge-container/brexit-what-does-it-mean-for-public-procurement/> (Accessed 10 Sept 2021).

Slavin, T (2015) *What can the world learn from Växjö, Europe's self-styled greenest city?* 25 Nov 2015 Available at

<https://www.theguardian.com/gre/cities/2015/nov/25/what-can-the-world-learn-from-vaxjo-europes-self-styled-greenest-city> (Accessed 24 Nov 2019)

Valleix, S. (2018) Organic Agriculture in France. Available at <http://isofar.org/isofar/index.php/2-uncategorised/253-organic-agriculture-in-france> (Accessed 18 January 2019)

7.17 News & websites - Denmark

Aarhus Lokaltidningen (2016) Kæmpe øko-indsats i kommunens køkkener bærer frugt [Huge eco-efforts in the municipal kitchens bear fruit], 9 Feb 2016 <https://aarhus.lokaltidningen.dk/nyheder/2016-02-09/-K%C3%A6mpe-%C3%B8ko-indsats-i-kommunens-k%C3%B8kkener-b%C3%A6rer-frugt-988067.html> (Accessed 25 Nov 2019)

Bidders, JR (2017) *Økologi splittede udvalg* [Organic splits committee] June 20 2017. Available at <http://www.fyens.dk/svendborg/Oekologi-splittede-udvalg/artikel/3160741> (1 July 2017)

Bøggild, C (2017) *Bedre køkkener skal give plejehjemsbeboere madglæden tilbage* [Better kitchens should give nursing home residents back the enjoyment of food] 3 Feb 2017. Available at <http://www.sum.dk/Aktuelt/Nyheder/Aeldre/2017/Februar/Bedre-koekkener-skal-give-plejehjemsbeboere-madglæden-tilbage.aspx> (Accessed 10 Feb 2017).

Food Service Forum (2019) *Kokkenes Køkken scorer økologisk spisemærke nummer 3.000* [Chef's Kitchen scores organic food brand number 3,000] November 4, 2019 Available at https://www.foodserviceforum.dk/article/view/684314/kokkenes_kokken_scorer_okologisk_spisemaerke_nummer_3000 (Accessed 2 December 2019)

Food Supply Denmark (2013) *Opfordring til kommunerne: Køb lokale fødevarer* [Call for municipalities: Buy local food] June 17, 2013. Available at https://www.food-supply.dk/article/view/105433/opfordring_til_kommunerne_kob_lokale_fodevarer (Accessed 27 Nov 2019)

Food Supply Denmark (2020) *Regeringen vil indføre to vegetardage i statens kantiner* [The government will introduce two vegetarian days in the state canteens] October 29, 2020 Available at https://www.food-supply.dk/article/view/747321/regeringen_vil_indfore_to_vegetardage_i_statens_kan

[tiner?ref=newsletter&utm_medium=email&utm_source=newsletter&utm_campaign=daily](#) (Accessed 30 Oct 2020)

Friis, P (2017) *Tyskerne skal spise mere Dansk økologi* [Germans must eat more Danish organic] 26 Oct 2017. Available at <https://www.fodevarefokus.dk/tyskerne-skal-spise-mere-dansk-oekologi/> (Accessed 22 January 2019)

Gyldenkærn, PG & Juul, TW (2018) *Væksthus frygter dårligere erhvervsrådgivning til virksomheder efter ny politisk aftale* [Greenhouse fears worse business advice to companies following new political agreement] 25 May 2018. Available at <https://www.dr.dk/nyheder/regionale/sjaelland/vaeksthus-frygter-daarligere-erhvervsraadgivning-til-virksomheder-efter> (Accessed 8 Dec 2019)

Hansen, B (2018) *Certificeret økologisk brød hos DeViKa* [Certified organic bread at DeViKa] 9 January 2018 Available at <https://bornholm.nu/?Id=82012> (Accessed 9 May 2019)

Holmbeck, P (2020) *Best practice in Organic Public Procurement: The case of Denmark. A successful business case for organic public procurement. With useful lessons for other nations.* Dec 2020. Available at https://www.organicseurope.bio/content/uploads/2021/06/IFOAMOE_Best-Practice-in-Organic-Public-Procurement_The-case-of-Denmark.pdf?dd (Accessed 15 Oct 2021)

Kongsgaard, H (2019) *Storkøkkener: Hørkram beholder kæmpestort udbud* [Large kitchens: Hørkram retains huge supply] 3 June 2019 Available at https://www.food-supply.dk/article/view/664020/storkokkener_horkram_beholder_kaeapestort_udbud?ref=newsletter&utm_medium=email&utm_source=newsletter&utm_campaign=daily (Accessed 4 June 2019)

Kost og Ernæringsforbundet (2021) *Og vinderen af Køkkenprisen er* [And the winner of the Kitchen Award is] 29 Sept 2021 Available at <https://kost.dk/og-vinderen-af-koekkenprisen-er> (Accessed 3 Oct 2021)

Landbrugsavisen (2016a) *Avis: Regeringen vil spare millioner på økologi* [The government will save millions on organic] 23 September 2016. Available at http://landbrugsavisen.dk/%C3%B8konomi/avis-regeringen-vil-spare-millioner-p%C3%A5-%C3%B8kologi?utm_campaign=pensionskasser%20dumper%20projekt%20med%2010%20k%C3%A6mpe%20svinefarme%20%7C%20avis%3A%20regeringen%20vil%20spare%20millioner%20p%C3%A5%20%C3%B8kologi%20%7C%20topresultat%20fra%20jensen%20see&utm_medium=nyheder%207.30&utm_source=newsletter (Accessed 8 July 2019)

Landbrugsavisen (2016b) *Kommune overvejer at spare økologien væk* [Municipality is considering saving the organic away] Available at <https://landbrugsavisen.dk/kommune-overvejer-spare-%C3%B8kologien-v%C3%A6k> (Accessed 5 Sept 2016)

Lund, KH & Nielsen, GG (2018) *Dansk Vegetarisk Forening: Grøn mad skal tilbydes i offentlige køkkener* [Danish Vegetarian Association : Green food must be offered in public kitchens] Available at <https://www.dr.dk/nyheder/regionale/oestjylland/dansk-vegetarisk-forening-groen-mad-skal-tilbydes-i-offentlige> (Accessed 30 Jan 2021)

Mørch T (2016) *Udbudsbetingelserne for 'udbud 50.90 Fødevarer* [Terms and conditions for 'tender 50.90 Food] 5 Dec 2016. Available at <https://fodevarewatch.dk/Fodevarer/article9202280.ece> (Accessed 22 May 2018)

Mundt-Nielsen, K. (2019) *Økologisk spisemærke har positiv effekt på foodservice* [Organic Eating Brand has a Positive Effect on Foodservice] Available at <http://www.fodevarefokus.dk/oekologisk-spisemaerke-har-positiv-effekt-paa-foodservice/> (Accessed 6 Aug 2019).

Olesen, AH (2017) *Økologi er blevet billigere* [Organic has become cheaper] 15 Mar 2017 available at <http://www.madforlivet.com/sund-inspiration/oekologi-blevet-billigere/> (Accessed 20 Mar 2017).

Paulsen, HR (2017) *Sønderborg Bæredygtigt lokal mad på kommunens bord* [Sønderborg Sustainable local food on the municipality's table] 1 Feb. 2017. Available at <https://jv.dk/artikel/b%C3%A6redygtigt-lokal-mad-p%C3%A5-kommunens-bord> (Accessed 9 July 2020).

Rafn, J (2017) *De kommunale køkkener er nu 60 procent økologiske* (Municipal kitchens are now 60 percent organic) Dec 7, 2017. Available at <https://aarhus.lokalavisen.dk/2017-12-07/Aarhus-De-kommunale-k%C3%B8kkener-er-nu-60-procent-%C3%B8kologiske-916458.html> (Accessed 22 Nov 2019)

Sørensen BH (2016) *Boom i øko-salget til storkøkkener* [Boom in eco-sales to large kitchens] 31 Aug 2016 Available at <https://www.berlingske.dk/virksomheder/boom-i-oeko-salget-til-storkoekkener> (Accessed 1 Dec 2017).

Spareforslag.dk (2019) *Glostrup: Køkken Medarbejdervilkår 0,36 mio. kr.* [Glostrup: Kitchen employee conditions. DKK 0.36 million kr]. Available at http://spareforslag.dk/avanceret-sog?field_status_tid=All&field_forslags_r_value=4&combine=mad&items_per_page=All (Accessed 29 May 2019).

Stubkjær, J (2014) *DeViKa: Bruger lokale råvarer* [DeViKa uses local ingredients] 6 Oct 2014 Available at <http://tidende.dk/?Id=58884> (Accessed 1 Sept 2016)

7.18 News & websites – Sweden

Abrahamsson, A (2018) *Samordnade transporter för miljön* [Coordinated transport for the environment] 23 February 2018 Available at <https://www.hoor.se/nyheter/samordnade-transporter-for-miljon/> (Accessed 8 March 2019)

Akeritidning (2017) *GDL Kammade hem samordnad varudistribution i Linköping* [GDL brought home coordinated goods distribution in Linköping] 30 Mar. Available at <https://www.akeritidning.se/sv/svensk-akeritidning/nyheter/2017/03/30/gdl-kammade-hem-samordnad-varudistribution-i-linkoping> (Accessed 28 Feb 2021)

Aktuell Hållbarhet - Miljöbarometern (2016) *Köttkonsumtion* [Meat Consumption] Available at <http://kommunrankning.miljobarometern.se/resultat/var-egen-kommunenkat/kottkonsumtion/compare> (Accessed 31 March 2017)

Ander, G (2015) *Shekarabi vill ha mer svenskproducerad mat i de offentliga köken* (Shekarabi wants more Swedish-produced food in public kitchens), *Landlantbruk* 22 December 2015 Available at <https://www.landlantbruk.se/lantbruk/shekarabi-vill-ha-mer-svenskproducerad-mat-i-de-offentliga-koken/> (Accessed 9th December 2018)

Ander, G (2019) *Analys: Med press från V och C får Löfven gå ned i spagat* [Analysis: With pressure from V and C, Löfven does the splits] 16 January 2019. Available at <https://www.landlantbruk.se/politik/analys-med-press-fran-bade-v-och-c-far-lofven-ga-ned-i-spagat/> (downloaded 16 January 2019)

Andersson, K & Sonesson, G (2010) *Mot 40 procent eko 2012 i Lund* [Towards 40 percent eco 2012 in Lund] Available at <http://merekoiskolan.se/koket/40-procent-eko-i-lund/> (Accessed 17 January 2018)

Axelsson, K., Bell, L., Gewecke, H (2018) *Att se hela bilden – Del 2 Klimatpåverkan från den offentliga sektorns konsumtion: Livsmedel och transporter* [Seeing the full picture - Part 2 Climate impact from public sector consumption: Food

and transport] July 2018. Available at <https://www.sei.org/wp-content/uploads/2018/09/180906a-gill-axelsson-wwf-roadmap-part2-wp-1806k.pdf> (Accessed 1 Apr 2020)

Bengtsson, C (2015) *Inbjudan till dialog om livsmedelsupphandling* [Invitation to dialogue on food procurement] 24 Feb 2015. Available at <http://www.ystad.se/kommun--politik/nyheter/arkiv/inbjudan-till-dialog-om-livsmedelsupphandling/> (Accessed 15 Sept 2020)

Bergkvist Publishing (2021) *Årets Skolrestaurang 2021 – här är nomineringarna!* [School Restaurant of the Year 2021 - here are the nominations!] 6 Sept 2021. Available at <https://newsroom.notified.com/bergkvist-publishing/posts/pressreleases/arets-skolrestaurang-2021-har-ar-nomineringar> (Accessed 30 Sept 2021).

Bergfeldt (2008) *Eleverna får äta sämre än Katter* [Students may eat worse than cats] 5 Oct 2008 <https://www.aftonbladet.se/nyheter/a/Xw97Go/eleverna-far-ata-samre-an-katter> (Accessed 27 Dec 2018)

Bjarle, L (2021) *Offentliga affären blir räddaren i nöden* [Public business becomes the savior in times of need] 4 March Available at <https://inkopsradet.se/expertkommentar/offentliga-affaren-blir-raddaren-i-noden/> (Accessed 4 Mar 2021).

Boström, M (2018) *Så minskade Ystad kökstransporterna med 75 procent* [Then Ystad reduced kitchen transport by 75 percent] 12 Mar 2018. Available at <https://www.energivarlden.se/artikel/sa-minskade-ystad-kokstransporterna-med-75-procent/> (Accessed 21 Aug 2018)

Eriksson, P (2018) *Mållöst för danska upphandlare* [Unhappy for Danish Providers] Available at <https://inkopsradet.se/anbud/mallost-for-danska-upphandlare/> (Accessed 1 July 2018)

Hoglander, B (2015) *Varutransporter i Örebro samordnas* [Goods transport in Örebro is coordinated] 23 June. Available at <https://www.offentligaaffarer.se/2015/06/23/bring-samordnar-varutransporter-i-orebro/> (Accessed 28 Feb 2021)

Ingemarsson, F (2019) *Matsvinnet har halverats på tre år* [Food waste has halved in three years] 27 Feb 2019 <https://www.svt.se/nyheter/lokalt/varmland/matsvinnet-har-halverats-pa-tre-ar?cmpid=del:tw:20190403:matsvinnet-har-halverats-pa-tre-ar:nyh:lp> (Accessed 3 Apr 2019)

Intelligentlogistik (2014) *Kalmar får samordnad varudistribution* [Kalmar receives coordinated distribution of goods] 30 Sept. Available at <https://intelligentlogistik.com/nyhetsflode/forskning/kalmar-far-samordnad-varudistribution/> (Accessed 27 Feb 2021).

Lunneryd, A (2019) *Eko i offentliga kök gynnar svensk hållbar matproduktion* ["Organic in public kitchens benefits Swedish sustainable food production"] *Landlantbruk* 15 February 2019 Available at https://www.landlantbruk.se/debatt/eko-i-offentliga-kok-gynnar-svensk-hallbar-matproduktion/?_ga=2.193031917.1789683562.1551684955-1736395465.1519910976 (Accessed 7 March 2019).

Magasin Maltid (2021) *Norge får gratis skolmat* [Norway receives free school meals] Oct 15 2021. Available at <http://magasinmaltid.se/norge-far-gratis-skolmat/> (Accessed 17 Oct 2021).

Måltid Sverige (2018) *Nyhetsbrev från Måltid Sverige - December 2018* (Newsletter from Meal Sweden - December 2018. Available at http://maltidsverige.se/?wysija-page=1&controller=email&action=view&email_id=30&wysijap=subscriptions&user_id=1687 (Accessed 22 Dec 2018)

Mårtensson, F (2020a) *Hellre dialog än samordning* [Dialogue rather than coordination] 9 Mar 2020 Available at <https://upphandling24.se/hellre-dialog-an-samordning/> (Accessed 10 March 2020).

Mårtensson, F (2020b) *Inför DIS-modell för livsmedel* [Introducing the DIS model for food] 1 Dec 2020 Available at <https://upphandling24.se/infor-dis-modell-for-livsmedel/> (Accessed 1 Feb 2021).

Mårtensson, F (2021) *Kommun trio i samverkan om Dis* [Municipal trio in collaboration on Dis] 26 May 21 Available at <https://inkopsradet.se/upphandling/kommuntrio-i-samverkan-om-dis/> (Accessed 1 June 2021)

Martin & Servera (2018) *Nyheter och inspiration från Martin & Servera* (News & Inspiration from Martin & Servera) 18 Dec 2018. Available at <http://klick.martinservera.com/mail/OBS/61y60003019AHuloaPg1493169478> (Accessed 23 December 2018).

Miljömagasinet (2014) *Regeringen saknar mål för ekologiskt* [The government has no goals for organic] 28 Mar 2014. Available at

<https://www.miljomagasinet.se/artiklar/140402-regeringen-saknar-mal-for-ekologiskt.html> (Accessed 24 Dec 2018).

Nordström, I & Lindau, AS (2019) *Spelet om regeringsmakten. Här är de 73 punkterna S, L, C och MP kommit överens om* [The game of government power. Here, the 73 points on which S, L, C and MP are agreed] 11 Jan 2019. Available at <https://www.aftonbladet.se/nyheter/samhalle/a/yvoOMx/har-ar-de-73-punkterna-s-l-c-och-mp-kommit-overens-om> (Accessed 16th January 2019).

Örning, LC (2018) *Svenska och ekologiska råvaror ökar i offentlig sektor* [Swedish and organic raw materials are increasing in the public sector] 25 Oct 2018. Available at <https://www.landlantbruk.se/lantbruk/svenska-och-ekologiska-ravaror-okar-i-offentlig-sektor/> (Accessed 1 Apr 2020).

Rehnström, Å. *Matsvinnet halverat på två år* [Food Waste Halved in Two Years] 22 Jan 2019 Available at <https://vartgoteborg.se/matsvinnet-halverat-pa-tva-ar/> (Accessed 5 Apr 2019)

Söderlund, O (2015) *Köttfri veckodag i fyra av tio kommuner* [Meatless weekday in four out of ten municipalities] June 25, 2015 Available at <https://www.aktuellhallbarhet.se/miljo/klimat/kottfri-veckodag-i-fyra-av-tio-kommuner/> (Accessed 14 June 2020)

7.19 News & Websites – rest of Europe

Agence Bio (2018) *Dossier de Presse - Bio En Restauration Hors Domicile Entre loi et realite* (Press release – Organic in out of home catering – between law and reality) November 2018 Available at https://www.agencebio.org/sites/default/files/upload/dossier_de_presse-agence_bio_16_nov-def.pdf (Accessed 19 January 2019).

Bioland (2018) *Stufenweise zu mehr Bio in der Profiküche* [Gradually to more organic in the professional kitchen] 16 Feb 2018. Available at <https://www.bioland.de/presse/presse-detail/article/stufenweise-zu-mehr-bio-in-der-profikueche.html> (Accessed 15 Feb 2019)

Bučan, S (2019) *Untertutzung fur Kostenloses Schulessen Brockelt* [Support for Free School Meals is Crumbling] Radio Prague 03 Jan 2019. Available at <https://www.radio.cz/de/rubrik/nachrichten/unterstuetzung-fuer-kostenloses-schulessen-broeckelt> (Accessed 21 January 2019).

DNSV (Deutsches Netzwerk Schulverpflegung) (2019) *Bundestag aktuell: Kostenfreie Schulverpflegung für alle Schüler innen der Republik* [Parliamentary News: Free school meals for all pupils of the republic] 17 Jan 2019. Available at <https://www.dnsv.eu/bundestag-aktuell-kostenfreie-essen-in-allen-schulen-des-landes> (Accessed 21 January 2019).

DNSV (Deutsches Netzwerk Schulverpflegung, 2020) *Russland: Kostenfreies Mittagessen an allen Grundschulen* [Russia: Free lunch at all primary schools] 4 Sept. Available at <https://www.dnsv.eu/russland-kostenfreies-mittagessen-an-allen-grundschulen> (Accessed 9 Sept 2020).

Fürst, E. (2019) *Landesregierung NRW unterstützt Bio-Lebensmittel* [NRW government supports organic food] 14 Feb 2019. Available at <https://www.gastroinfoportal.de/news/gastroinfoportal-management/landesregierung-nrw-unterstuetzt-bio-lebensmittel/> (Accessed 15 Feb 2019).

Good Food@School (2020) *Online nascholing: gezonde, duurzame voeding in aanbestedingen* [Online training: healthy, sustainable food in tenders] 6 May 2020. Available at https://www.goodfoodatschool.be/nl/nieuws/online-nascholing-gezonde-duurzame-voeding-aanbestedingen?utm_source=Good+Food+%40+School&utm_campaign=abe6f138de-EMAIL_CAMPAIGN_2019_02_04_09_35_COPY_01&utm_medium=email&utm_term=0_348460d255-abe6f138de-443912710 (Accessed 27 Oct 2020)

Greenpeace (2018b) *Bundesländer Ranking 2018 - Schul und Kindergartenessen in Österreich*. [Federal Ranking 2018 - School and kindergarten meals in Austria] Available at <https://landwirtschaft.greenpeace.at/assets/uploads/publications/Greenpeace-Bundeslaender-Ranking-2018-Schul-%20und-Kindergartenessen-in-Oesterreich.pdf> (Accessed 30 Oct 2020).

Gruene Fraction Muenchen (2018) *Einrichtung eines House of Food* [Establishment of a House of Food] 26 Apr 2018 <https://www.gruene-fraktion-muenchen.de/einrichtung-eines-house-of-food/> (Accessed 30 Oct 2020).

Klesmann, M & Reinsch, M (2018) *Bildung Schulessen und Schülerticket werden kostenlos* [Education school meals and student ticket will be free] *Berliner Zeitung* 3 Dec 2018 Available at <https://www.berliner-zeitung.de/berlin/bildung-schulessen-und-schuelerticket-werden-kostenlos-31688630> (Accessed 21 January 2019).

Minambiente [Environment Ministry - Italy] (2020) *Ambiente: novità sui criteri ambientali per mense e verde pubblico e formazione a distanza dei funzionari PA su acquisti verdi* [Environment: news on environmental criteria for canteens and public parks and distance training for PA officials on green purchases] 18 Mar 2020. Available at <https://www.minambiente.it/comunicati/ambiente-novita-sui-criteri->

[ambientali-mense-e-verde-pubblico-e-formazione-distanza-dei](#) (Accessed 31 May 2020).

Oekolandbau (2017) *Dänemark: 2.200 Profiküchen mit mindestens 30 Prozent Bio* [Denmark: 2,200 professional kitchens with at least 30 percent organic] 14 Nov 2017. Available at <https://www.oekolandbau.de/service/nachrichten/detailansicht/daenemark-2200-profikuechen-mit-mindestens-30-prozent-bio/> (Accessed 18 November 2017).

Pebonline (2019) *Die Erfolgsgeschichte: Bio-Ausser-Haus-Verpflegung in Dänemark* [The success story: organic out-of-home catering in Denmark] 1 Oct 2018. Available at <https://www.pebonline.de/veranstaltung/die-erfolgsgeschichte-bio-ausser-haus-verpflegung-in-daenemark/> (Accessed 20 January 2019).

Strauß, S (2018) *Vorbild Dänemark Essen in Berliner Schulen und Kantinen soll gesünder werden* [Model Denmark - Eating in schools and canteens in Berlin should be healthier] *Berliner Zeitung*, 14 Mar 2018, Available at <https://www.berliner-zeitung.de/berlin/vorbild-daenemark-essen-in-berliner-schulen-und-kantinen-soll-gesuender-werden-29864200> (Accessed 22 January 2018).

Stübgen, M (2019) *Wir haben für Deutschland und die deutsche Biobranche durch unser gemeinsames Engagement bereits sehr viel erreichen können* [We have already achieved a great deal for Germany and the German organic sector through our joint commitment] 15 Jan 2019. Available at https://www.bmel.de/SharedDocs/Pressemitteilungen/2019/008-St%C3%BCbgen_Biobranche.html (downloaded 21 January 2019).

Wulf, J-P. (2020) *Kantine (der) Zukunft* [Canteen (of) the future] 23 Nov 2020. Available at <https://www.cateringinside.de/catering-konzepte/kantine-der-zukunft.html> (Accessed 4 Jan 2021).

Zilz, C. (2019a) *Kostenloses Schulessen? Es geht doch!* [Free school lunches? It works!] 23 Jan 2019. Available at https://www.food-service.de/maerkte/news/kommentar-kostenloses-schulessen-es-geht-doch-42172?utm_source=%2Fmeta%2Fnewsletter%2Fnewsletter&utm_medium=newsletter&utm_campaign=nl873&utm_term=42bf85e14dc95c0ad727255443108b73 (Accessed 25 January 2019).

Zilz, C. (2019b) *Bald kostenfreies Schulessen für ganz Deutschland?* [Soon free school meals for the whole of Germany] Available at <https://www.food-service.de/maerkte/news/politik-bald-kostenfreies-schulessen-fuer-ganz-deutschland-42102> (downloaded 10 February 2019).

END OF REFERENCES

Appendix 1 Academic search terms

“

Climate” “food procurement”

“Climate” “school food”

“Climate” “school meals”

“Farm to School”

“Food for Life Partnership”

“Food for Life” “school meals”

“food hub” “public procurement”

“food procurement” “research is needed”

“food procurement” sustainability

“food procurement policy”

“future research” “sustainable food”

“healthy food procurement”

“Jamie Oliver” “school food”

“local food” “public procurement

“new Nordic food”

“organic food” consumer

organic food” health

“organic food” “public canteens”

organic conversion” “public catering”

“organic food” “public procurement”

“organic food” “school meals”

“pedagogic meals”

“public procurement” “local economy”

“public procurement” “food miles”

“public sector food procurement”

Quality food, public procurement, and sustainable development: the school meal revolution in Rome”

school food” “carbon footprint”

“school food” “reducing meat”

“school meals” “carbon footprint”

“school meals” reducing meat

“School Food Revolution”

sustainable food procurement”

“vegetarian day” “public procurement”

Appendix 2 Local authority catering - some basic phrases

ENGLISH	SWEDISH	DANISH
buyer	inköpare	køber
care home	plejehjem	plejecentre
catering manager	kostchefer	køkkenchef
climate change	klimatförändring	klimaforandringer
climate friendly	klimatvänligt	klimavenlige
contract divided into lots	kontraktet uppdelat i flera delar	kontrakt opdelt i flere dele
coordinated goods distribution	samordnad varudistribution	koordineret distribution af varer
council	kommun	kommun
dynamic procurement	dynamiskt inköpssystem	dynamiske indkøb
environmental & sustainability manager	miljö- och hållbarhetschefer	miljø- og bæredygtighedsledere
elderly	äldre	ældre
food	Mat OR livsmedel	Mad OR foedevaere
food and meal policy	mat- och måltidspolicy	mad- og måltidspolitik
food prepared from scratch	mat lagad från grunden	mad tilberedt fra bunden
food strategy	livsmedelsstrategins	madstrategi
food waste	matsvinn	mad spild
government	regeringen	regeringen
large kitchen	storkök	storkøkken
local food	“narmat” OR “lokal mat”	lokal mad
local supplier	lokale leverantör	lokal leverandør
meals on wheels	mat levererad hem	mad leveret til hjemmet
menu	matsedeln	menuen
municipal kitchen	kommune kök	kommunens køkken
nursing home	äldreboende	ældreboende
organic	ekologisk	økologisk
pre-school (nursery)	förskolor	førskoler
procurement manager	inköpschef	indkøbschef
public food	offentlig mat	offentlig mad
food procurement	livsmedelsupphandling	foedevaere udbud
public gastronomy	offentlig gastronomi	offentlig gastronomi
public kitchen	offentlig kök	Offentligt køkken
public procurement	offentlig upphandling	offentlige indkøb
purchasing	inköp	køb
school food	skole mat	skole mad
seasonal	säsöng	sæson
seasonal vegetables and fruit	grönsaker och frukt som hör till säsongen	grøntsager og frugter, der hører til årstiden
small local producer	små lokala producenternas	små lokale producenter
smart food procurement		kloge fødevareindkøb
Sustainable	hållbar	bæredygtig
sustainable city	hållbar Stad	bæredygtig by

Appendix 3 Newsletters relating to public food procurement

Table A3.1 Swedish Newsletters

<u>Original Name</u>	<u>Translation</u>	<u>website</u>	<u>When subscribed to</u>	<u>Frequency/Description</u>
Anbud24	Tender 24	https://anbud24.se/	Jan 2017	Weekly – approx.. Procurement news.
ATL - Lantbrukets affärstidning	Farm Business	https://www.atl.nu/	Sept 2017	Daily. Food and farming.
Fairtrade Sverige	Fairtrade Sweden	https://fairtrade.se	Oct 2016	Monthly. Fairtrade inc public sector
Food Supply SE	Food Supply Sweden	https://www.food-supply.se	Sept 2016	Daily. Food industry.
Klimatkommunernas	Climate communes	https://klimatkommunerna.se/	Apr 2017	Monthly. Municipal climate news.
KRAV	Requirements	www.mynewsdesk.com/	Aug 2016	Weekly – approx. Organic news.
Inkopradet	Purchasing Council	https://mejli.inkopsradet.se	Dec 2016	Monthly – approx.. Public procurement.
Ekobrev från Jordbruksverket	Organic News from Agriculture Agency	https://jordbruksverket.se/	Aug 2016	Weekly – approx. Info for organic farmers
Land lantbruk	Country Agriculture	www.landlantbruk.se	May 2018	Daily. Food and farming.
Länsstyrelsen Västra Götalands län Nyhetsbrev	County Administrative Board of Västra Götaland County	https://www.idrelay.com/v4_idrarchive.asp?q=896-8935-3C	Nov 2018	Monthly. Promoting local and sustainable food in public procurement
Livsmedelsakademin	Food Academy	http://www.livsmedelsakademin.se	Oct 2016	Bi-monthly – approx. Scania food network.
Måltidsbloggen	Mealtime Blog	http://maltidsbloggen.se/media-2/nyheter/	Nov 2017	2018 (54) and 2017 (29) About public meals. National.
Maltidsverige	Swedish Mealtimes	http://maltidsverige.se	Oct 2017	Bi-monthly. About public meals – 3 regions
Martin & Servera	Company News	www.martinservera.se	Sept 2017	Bi-weekly – approx. Products & Training
Matlust	Appetite	https://matlust.eu	Oct 2016	Bi-weekly – approx. SME food project.

Miljö-utveckling	Environment & Development	http://miljo-utveckling.se/om/	April 2017	Monthly – approx.. Environmental news.
Skolkockarna News	School Kitchen News	http://magasinmaltid.se/	Nov 2019	Monthly - approx
Skolmatsakademien	School Food Academy	https://www.vgregion.se/skolmatsakademin/	Aug 2016	Monthly. Healthy & sustainable school food in Vastra Gotland region.
Sveriges Offentliga Inköpare	Swedish Public Procurement	http://www.soi.se/	June 2017	Public Procurement News. Monthly.
Upphandling24	Procurement 24	https://upphandling24.se	Dec 2016	Weekly. Public Procurement.
upphandlingsmyndigheten	Procurement Authority	https://www.upphandling Smyndigheten.se/	Dec 2016	Monthly (approx.) Official view of public procurement.
Vart Göteborg	Our Gothenburg	https://vartgoteborg.se	Jan 2018	Bi-weekly (Approx). City newsletter.

Table A3.2 Danish Newsletters

Original Name	Translation	Website	Subscribed	Frequency/Description
altomkost.	Everything about diet	https://altomkost.dk/	Oct 2016	Monthly – approx.. Official dietary advice.
Forum for Bæredygtige Indkøb	Forum for Sustainable Purchasing	https://ansvarligeindkob.dk	Aug 2017	Monthly – approx.. Sustainable Public Procurement.
CSR	CSR	https://csr.dk	June 2017	Monthly – approx.. Community Social Responsibility.
Dansk Vegetarisk Forening	Danish Vegetarian Assocn	https://vegetarisk.dk/	Dec 2017	Monthly – approx.. Refers to public kitchens
Fødevarer Fokus	Food Focus	http://www.fodevarerfokus.dk		Daily. General food industry coverage.
Food Supply DK	Food Supply Denmark	https://f.nordiskemedier.dk	Dec 2016	Daily. General food industry coverage.
FødevarerWatch	Food Watch	https://fodevarerwatch.dk		Daily. General food industry coverage.
Købehavns Madhus	Copenhagen House of Food	https://www.kbhmadhus.dk/	Apr 2015-Dec 2019	Monthly approx.. Consultant – organic conversion
Meyers Madhus	Meyer Food House	https://www.meyersmad.dk/	Dec 2016	Restaurant & food service company.

Økologisk Landsforening	Organic Food Association	https://okologi.dk/	Feb 2017	Weekly. Organic food NGO
SKI Staten og Kommunernes Indkøbsservice	State & Kommunes Purchasing Service	http://www.ski.dk/Sider/Forside.aspx	Apr 2017	Monthly - approx Procurement news.

Table A3.3 United Kingdom Newsletters

<u>Name</u>	<u>Website</u>	<u>Subscribed</u>	<u>Frequency/Description</u>
Childrens Food Campaign	https://www.sustainweb.org/childrensfoodcampaign/	Feb 2018	Monthly – approx.. Promoting better food standards
Eating Better	https://www.eating-better.org/	Sept 2013	Monthly. Promoting better food standards
Food Foundation	https://foodfoundation.org.uk/	May 2017	Monthly – approx.. Promoting healthy and sustainable food.
Food for Life	https://www.foodforlife.org.uk/	March 2020	Monthly – approx. Promoting Food for Life.
Food Service Footprint	https://www.foodservicefootprint.com/	May 2019	Sustainable food service. 3X weekly
LACA Newsletter	https://laca.co.uk/	June 2019	Monthly. Local Authority Catering Association.
Public Sector Catering	https://www.publicsectorcatering.co.uk/	Nov 2019	Daily. Industry news.
Soil Association - Marketing	https://www.soilassociation.org/	Jan 2016	Organic market news. Weekly [approx.]
South West Food Hub	https://www.thesouthwestfoodhub.co.uk/	Nov 2020	News. Monthly [approx.]
Sustainable Food Places	https://www.sustainablefoodplaces.org/news/	Apr 2020	Monthly. Local authority sustainable food campaigns

Table A3.4 Belgium, France & Germany - Newsletters

<u>Original Name</u>	<u>Translation</u>	<u>Website</u>	<u>Subscribed</u>	<u>Frequency/description</u>
Brussels environnement.	Brussels - environment	https://environnement.brussels/	Dec 2020	Fortnightly. Brussels environmental news
Bundeszentrum für Ernährung	Federal Nutrition Centre	https://www.bzfe.de/	Nov 2018	Weekly [approx.] German nutrition news.
Cerdd	Sustainable Devt Centre	http://www.cerdd.org/	July 2017	France - Sustainable devt. Bi-monthly.
Deutsches Netzwerk Schulverpflegung	German School Catering Network	https://www.dnsv.eu/	June 2017	Weekly [Approx] German School catering
Kantine Zukunft	Future Canteen	https://kantine-zukunft.de	Mar 2020	Monthly [approx.] Berlin – sustainable communal catering .
Good food at school.	-	https://www.goodfoodatschool.be/	May 2020	Belgium-Flanders. Monthly.
Newsletter-Ernaehrung	Nutrition Newsletter	https://landeszentrum-bw.de/	Jan 2017	Baden Wurttemberg Newsletter. Monthly.
Redaktion Oekolandbau	Organic Farming Editorial	www.oekolandbau.de	July 2016	Weekly. German information on organic farming.
Restauration21.fr	Restaurant21	https://www.restauration21.fr/	Jan 2018	France- Sustainable Development in Catering
Territoires Bio	Organic places	https://territoiresbio.fr/	Apr 2020	Monthly. France – promoting organic food
Wo kommt dein essen her?	Where does your food come from?	https://wo-kommt-dein-essen-her.de/regiokarte/	Apr 2021	Monthly. Berlin schools – where does food come from?.

Appendix 4 UK local authorities, 2013 to 2021 - Food for Life Served Here Accreditations

Data Sources

Unlike Denmark or Sweden the UK has no official statistics relating to organic food in public catering. The only publicly available information has been that released by the Soil Association in relation to the Food for Life Served Here scheme – where Silver and Gold levels require 5% and 15% organic respectively. Table A4.1 was based on print outs of the relevant tables which were made on specific dates.

The Soil Association did not publish any listing of FFL accreditations between spring 2018 and July 2019. This was explained as due to technical problems with a new database. When publication resumed in July 2019 numbers of schools were no longer included. The lists therefore no longer revealed changes in the number of accredited school numbers within individual local authorities.

The data in the tables below was downloaded from the following web pages on the following dates:

<http://www.sacert.org/catering/schoolcaterers>

Print outs dated 18 Jan 2013, 7 Feb 2015 and 25 Feb 2016

<https://www.soilassociation.org/certification/catering/sectors/schools/schools-award-holders/> Print out dated 30th Jan 2018

<https://www.foodforlife.org.uk/catering/food-for-life-served-here/licensee>

Downloaded 10 October 2020 and 2 October 2021

For six dates between 2012 and 2016 the tables may be retrieved from the internet archive. For example the table on 28 Feb 2015 may be seen at <http://web.archive.org/web/20150228040531/http://www.sacert.org:80/catering/schoolcaterers> (Accessed 1 November 2020).

The data relates almost entirely to schools. A few local authorities include nurseries and elderly care homes. These are a very small percentage of the total. Table A4.1 includes certain local authority catering services which are either contracted out to a private contractor or a local authority owned partnership.

Hertfordshire
Staffordshire
Cheshire West

Hertfordshire Catering Ltd
Entrust with Chartwell
partnership with Wirral - Edsential

Durham	Taylor Shaw
Norfolk	Norse
Warwickshire	Educater
Greenwich	GS Plus

These may acquire work outside the boundaries of the local authority which founded them.

The 25 Feb 2016 total of 6,273 schools relates to local authority catering services. The full total of schools with FFL was over 8,000 including private sector catering contractors. As regards private sector caterers with FFL accreditations it was decided not to include these in this table because the information often cannot be localized to specific local authorities. The table says – for example – that ABM Catering Ltd has FFL Bronze for schools in the Midlands and the North.

Table A4.1 Food for Life in Council catering services 2013-2020 (Data collated from Soil Association website)

	A	B	C	D	E	F	G	H	I	J	K	L	
	<u>"18th Jan 2013"</u>			<u>"7th Feb 2015"</u>			<u>"25 Feb 2016"</u>			<u>"31 Jan 2018"</u>			
	<u>Award (No of sites)</u>			<u>Award (No of sites)</u>			<u>Award (No of sites)</u>			<u>Award (No of sites)</u>			
	Bronze	Silver	Gold	Bronze	Silver	Gold	Bronze	Silver	Gold	Bronze	Silver	Gold	
Council													
Scotland													
Aberdeen	-	-	-	-	-	-	-	-	-	-	-	-	-
Aberdeenshire							151				60		S
Argyll& Bute				75			75				156		S
Edinburgh				98			98			101			B
East Ayrshire			41			39			39			39	G
East Lothian				35			35			35			B
East Renfrew				21			21			21			B
Fife				144		5							N
Highland				144	5		171	5		167	6		B
North Ayrshire						51			51			50	G
Scottish Borders													B
South Lanarks				124			124						M
Stirling	44				37			37			36		S
West Lothian													B
Wales													
Flintshire				71			71			73			N
Yorks & Humber													
Barnsley				57			55						
Bradford													
Doncaster				115			115				101		S
Hull City				78				78			75		S
Kirklees			184		196			196			175		S
Leeds										96			B
North Yorks							296				327		S
North West													
Blackpool										26			M
Cheshire East				110			110					102	S
Cheshire West							206			177			B
Knowsley							60			61			B
Lancashire								485			508		S

Oldham	65	98				92			92			92	M				
Manchester												99				B	
Rochdale																M	
St Helens																B	
Warrington																B	
Wigan												78				M	
<u>North East</u>																	
Darlington														7			M
Durham	190	214	217	8			209	7				M					
Gateshead			74				74		71			B					
Hartlepool									30			B					
Newcastle			59				68		70			B					
Northumberland			67				67		57			B					
North Tyneside									75			B					
Sunderland							75										
<u>East Midlands</u>			-	-	-	-	-	-	-	-	-	-	-				
Derbyshire	248	360					350		375			B					
Leicester City												B					
Leicestershire				222				193				S					
Loughborough												B					
Nottingham							62		65			B					
Nottinghamshire						320		320			309	G					
<u>West Midlands</u>			-	-	-	-	-	-	-	-	-	-	-				
Birmingham			141	181										B			
Coventry	17											C					
Shropshire							101					S					
Solihull		63						63		63		S					
Staffordshire		267										S					
Stoke on Trent	69							73		75		S					
Telford & Wrekin												B					
Walsall												B					
Warwickshire	55	68		175			175			190		G					
Wolverhampton			78				78		78			B					
<u>East of England</u>																	
Norfolk				48				48		8	5		B				
North LincS			65				65			56			M				
<u>London</u>			-	-	-	-	-	-	-	-	-	-	-				
Barnet			62	55		76			76		76			M			
Barking & Dagenham					46				46				54	S			
Enfield	3	60					3	60		64			S				
Greenwich		67						60				80	G				
Havering		47						47		51			S				
Newham	56						56		63								

Table A4.2 UK local authority school catering – Growing proportion of Silver & Gold, 2013-2018

	Bronze	Silver	Gold	Total
18th Jan 2013	1518	599	376	2493
% of total	60.9	24.0	15.1	100
<u>"7th Feb 2015"</u>	2679	1726	572	4977
% of total	53.8	34.7	11.5	100.0
<u>"25 Feb 2016"</u>	3620	1748	905	6273
% of total	57.7	27.9	14.4	100.0
<u>"31 Jan 2018"</u>	1905	2698	1187	5790
% of total	32.9	46.6	20.5	100.0

Table A4.3 Council caterers - decline of Food for Life Gold, 2018-2021

31 Jan 2018 FFL Gold award	Number of FFL Gold schools/other sites – Jan 2018	Remarks/Location β Shows councils where most or all schools had FFL Gold in Jan 2018	October 2021 highest FFL award
London boroughs			
Barking & Dagenham β	54		Silver
Greenwich GSplus β	76/4	Catering organization closed	-
Thurrock β	29		Silver
Tower Hamlets β	70/14		Silver
Waltham Forest β	57		Silver
Other English Councils			
Cheshire East β	102		Silver
Derbyshire	4	Total of 300+ schools. All but four Silver in Jan 2018.	Gold [1]
Leicestershire	1	180+ schools now Gold	Gold [2]
Nottingham City	1	Total of 50+ schools. All but one Silver in Jan 2018.	Gold [3]
Nottinghamshire β	309		Silver[4]
Oldham β	92	Has dropped FFL	None
Surrey β	291	Has dropped FFL	None
Warwickshire	1	Total of 150+ schools. All but one Silver in Jan 2018	Gold [5]
Scottish Councils			
East Ayrshire β	39		Gold
North Ayrshire β	50		Gold

FOOTNOTES

[1] Derbyshire's website say that schools have FFL Silver (DerbyshireCounty Council, 2021). It is likely that 4 schools in Derbyshire continue to pilot FFL Gold.

[2] In Leicestershire all 180+ schools are now Gold (Leicestershire County Council, 2021)

[3] In Nottingham a majority of schools are Silver but some have FFL Gold (Eatculture, 2021).

[4] Nottinghamshire schools are Silver (Nottinghamshire County Council, 2021)

[5] In Warwickshire a majority of schools are Silver but some have FFL Gold (Warwickshire County Council, 2021).

Table A4.4 Decline of Food for Life Gold in private sector caterers, 2018-2021

31 Jan 2018 FFL Gold award	Number of schools/other sites – 2018	Remarks/Location	October 2021 highest FFL award
private sector		Caterers - 10+ schools	
Alliance in Partnership	96	Kensington&Chelsea, Bucks, West Midlands	-
Aspens	17	Cornwall	-
Caterlink	98	Camden, Islington	-
Chartwells	48	Cornwall	Gold?
Chartwell	142	East Sussex	Gold?
Eden Foodservice	22	Cornwall, Plymouth	-
Eden Foodservice	120	Bristol	-
Edwards & Ward	52	Wandsworth	Silver
Edwards & Ward	52	North Somerset	Silver
Independent	54	Kent	-
ISS	44	Lambeth/Richmond	-

Table A4.5 New Gold Caterers mostly small - October 2021

Company	Location	Sector	Remarks
Aurum Academies Trust	Lincolnshire	Schools	Single school
BaxterStorey at University of the Arts	London	University	University catering sites
Chartwells Schools Regions South and South West	Bristol	Schools	National catering company. May include Chartwells activities in Cornwall and East Sussex – see table A4.4.
Devon Norse Ltd	Devon	Schools	100+ schools. Two schools have Gold. Rest have Silver (Devon Norse, 2021)
Elior UK	City of London	University	University catering sites

Nourish Contract Catering Ltd	Bromley	Schools	Contract caterer for schools - London
Radish	Hertfordshire	Schools	Contract caterer for schools - London
Snapdragons Nursery	Somerset	Early Years	Nine nurseries
Tall Trees Kindergarten	Somerset	Early Years	Single nursery

Appendix 5 Survey of Meat Reduction In Swedish Kommunes

Has the municipality introduced at least one meatless day a week for at least half of municipal canteens or reduced meat consumption as much in another way? (Source: Aktuell Hållbarhet – Miljöbarometern, 2016)

Yes 143 Kommunes (49.3%)

<u>Kommun</u>		
<u>Ale</u>	<u>Habo</u>	<u>Kristianstad</u>
<u>Alvesta</u>	<u>Hagfors</u>	<u>Kristinehamn</u>
<u>Arboga</u>	<u>Hallstahammar</u>	<u>Kumla</u>
<u>Arjeplog</u>	<u>Halmstad</u>	<u>Laxå</u>
<u>Arvidsjaur</u>	<u>Hammarö</u>	<u>Lekeberg</u>
<u>Askersund</u>	<u>Haninge</u>	<u>Leksand</u>
<u>Bollebygd</u>	<u>Haparanda</u>	<u>Lerum</u>
<u>Borås</u>	<u>Helsingborg</u>	<u>Lessebo</u>
<u>Botkyrka</u>	<u>Herrljunga</u>	<u>Lidingö</u>
<u>Båstad</u>	<u>Hjo</u>	<u>Lidköping</u>
<u>Dals-Ed</u>	<u>Huddinge</u>	<u>Kungsör</u>
<u>Bjurholm</u>	<u>Hudiksvall</u>	<u>Ljungby</u>
<u>Enköping</u>	<u>Härnösand</u>	<u>Lomma</u>
<u>Eskilstuna</u>	<u>Härryda</u>	<u>Luleå</u>
<u>Eslöv</u>	<u>Håbo kommun</u>	<u>Lund</u>
<u>Essunga</u>	<u>Högsby</u>	<u>Malmö</u>
<u>Falkenberg</u>	<u>Höör</u>	<u>Mjölby</u>
<u>Falköping</u>	<u>Järfälla</u>	<u>Munkfors</u>
<u>Finspång</u>	<u>Jönköping</u>	<u>Mölndal</u>
<u>Flen</u>	<u>Karlshamn</u>	<u>Mönsterås</u>
<u>Färgelanda</u>	<u>Karlskoga</u>	<u>Mörbylånga</u>
<u>Gnesta</u>	<u>Katrineholm</u>	<u>Motala</u>
<u>Gällivare</u>	<u>Kil</u>	<u>Nordanstig</u>
<u>Gävle</u>	<u>Kinda</u>	<u>Norrköping</u>
<u>Göteborg</u>	<u>Kramfors</u>	<u>Norrtälje</u>

<u>Nybro</u>	<u>Sunne</u>	<u>Valdemarsvik</u>
<u>Nyköping</u>	<u>Strängnäs</u>	<u>Vara</u>
<u>Nynäshamn</u>	<u>Strömstad</u>	<u>Varberg</u>
<u>Orust</u>	<u>Svedala</u>	<u>Vaxholm</u>
<u>Osby</u>	<u>Södertälje</u>	<u>Vellinge</u>
<u>Oskarshamn</u>	<u>Sölvesborg</u>	<u>Vetlanda</u>
<u>Ovanåker</u>	<u>Tanum</u>	<u>Vingåker</u>
<u>Oxelösund</u>	<u>Tierp</u>	<u>Vårgårda</u>
<u>Perstorp</u>	<u>Timrå</u>	<u>Vänersborg</u>
<u>Piteå</u>	<u>Tingsryd</u>	<u>Vännäs</u>
<u>Ragunda</u>	<u>Tomelilla</u>	<u>Västervik</u>
<u>Olofström</u>	<u>Torsby</u>	<u>Västerås</u>
<u>Sjöbo</u>	<u>Torsås</u>	<u>Växjö</u>
<u>Sandviken</u>	<u>Sävsjö</u>	<u>Uddevalla</u>
<u>Sigtuna</u>	<u>Söderhamn</u>	<u>Åre</u>
<u>Skurup</u>	<u>Tranås</u>	<u>Älmhult</u>
<u>Smedjebacken</u>	<u>Trosa</u>	<u>Älvsbyn</u>
<u>Sollefteå</u>	<u>Tyresö</u>	<u>Ängelholm</u>
<u>Sollentuna</u>	<u>Umeå</u>	<u>Örebro</u>
<u>Staffanstorp</u>	<u>Upplands Väsby</u>	<u>Östersund</u>
<u>Stenungsund</u>	<u>Upplands-Bro</u>	<u>Östhammar</u>
<u>Sundbyberg</u>	<u>Uppsala</u>	<u>Östra Göinge</u>
<u>Sundsvall</u>	<u>Vaggeryd</u>	

No - 101 kommuner (34.8%)

<u>Övertorneå</u>	<u>Årjäng</u>	<u>Vimmerby</u>
<u>Österåker</u>	<u>Åsele</u>	<u>Vindeln</u>
<u>Örkelljunga</u>	<u>Åstorp</u>	<u>Vallentuna</u>
<u>Örnsköldsvik</u>	<u>Åtvidaberg</u>	<u>Uppvidinge</u>
<u>Öckerö</u>	<u>Ystad</u>	<u>Täby</u>
<u>Ödeshög</u>	<u>Värmdö</u>	<u>Töreboda</u>
<u>Tidaholm</u>	<u>Värnamo</u>	<u>Trelleborg</u>
<u>Älvkarleby</u>	<u>Vilhelmina</u>	<u>Trollhättan</u>

<u>Tjörn</u>	<u>Mark</u>	<u>Gislaved</u>
<u>Svenljunga</u>	<u>Markaryd</u>	<u>Götene</u>
<u>Säffle</u>	<u>Mellerud</u>	<u>Gnosjö</u>
<u>Strömsund</u>	<u>Malung-Sälen</u>	<u>Gotland</u>
<u>Norberg</u>	<u>Ljusdal</u>	<u>Grums</u>
<u>Svalöv</u>	<u>Härjedalen</u>	<u>Grästorp</u>
<u>Stockholm</u>	<u>Linköping</u>	<u>Forshaga</u>
<u>Solna</u>	<u>Kungsbacka</u>	<u>Falun</u>
<u>Sorsele</u>	<u>Kalmar</u>	<u>Filipstad</u>
<u>Sotenäs</u>	<u>Kävlinge</u>	<u>Fagersta</u>
<u>Skövde</u>	<u>Köping</u>	<u>Bjuv</u>
<u>Simrishamn</u>	<u>Laholm</u>	<u>Boden</u>
<u>Skara</u>	<u>Kiruna</u>	<u>Ekerö</u>
<u>Skellefteå</u>	<u>Klippan</u>	<u>Danderyd</u>
<u>Skinnskatteberg</u>	<u>Karlskrona</u>	<u>Degerfors</u>
<u>Sala</u>	<u>Karlstad</u>	<u>Boxholm</u>
<u>Salem</u>	<u>Jokkmokk</u>	<u>Bromölla</u>
<u>Robertsfors</u>	<u>Hörby</u>	<u>Bollnäs</u>
<u>Ronneby</u>	<u>Hässleholm</u>	<u>Borgholm</u>
<u>Nässjö</u>	<u>Höganäs</u>	<u>Avesta</u>
<u>Ockelbo</u>	<u>Hultsfred</u>	<u>Bengtsfors</u>
<u>Norsjö</u>	<u>Hylte</u>	<u>Berg</u>
<u>Nordmaling</u>	<u>Hofors</u>	<u>Arvika</u>
<u>Mullsjö</u>	<u>Heby</u>	<u>Aneby</u>
<u>Nacka</u>	<u>Hedemora</u>	<u>Alingsås</u>
<u>Mora</u>	<u>Emmaboda</u>	

Don't Know - 46 kommuner (15.9%)

<u>Borlänge</u>	<u>Gagnef</u>	<u>Krokom</u>
<u>Bräcke</u>	<u>Gullspång</u>	<u>Landskrona</u>
<u>Burlöv</u>	<u>Hallsberg</u>	<u>Karlsborg</u>
<u>Dorotea</u>	<u>Hällefors</u>	<u>Kungälv</u>
<u>Eda</u>	<u>Kalix</u>	<u>Ljusnarsberg</u>
<u>Eksjö</u>	<u>Knivsta</u>	<u>Ludvika</u>

<u>Lilla Edet</u>	<u>Partille</u>	<u>Vadstena</u>
<u>Lindesberg</u>	<u>Rättvik</u>	<u>Vansbro</u>
<u>Malå</u>	<u>Orsa</u>	<u>Ydre</u>
<u>Mariestad</u>	<u>Storfors</u>	<u>Åmål</u>
<u>Lycksele</u>	<u>Storuman</u>	<u>Ånge</u>
<u>Lysekil</u>	<u>Surahammar</u>	<u>Ulricehamn</u>
<u>Nora</u>	<u>Säter</u>	<u>Älvdalen</u>
<u>Munkedal</u>	<u>Tibro</u>	<u>Överkalix</u>
<u>Nykvarn</u>	<u>Tranemo</u>	
<u>Pajala</u>	<u>Söderköping</u>	