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**From Feed to Food:
How a culinary focused transition
enabled Copenhagen's public meal
system to convert to using 90%
organic food at no extra cost**

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Abstract

Our world faces a socio-ecological crisis, and our food system is a significant contributor to that crisis. We must seek to turn our food system into a contributor towards regenerating our earth systems. To do that we need to preference a transition of farming production practices from industrial to diverse-agroecosystems . In the face of national inaction, municipalities can leverage their mandates and assets to contribute towards driving a transition of production practices. The municipal mandate responsibility for public health and the public meal system assets can be leveraged to cook with sustainable produce while also using their purchasing power to source sustainable produce.

This thesis employs a case study approach and draws data from stakeholder interviews, literature and case specific documentation. This data was processed and analysed using a novel approach known as Giga-mapping to make sense of the complexity of the Copenhagen's public meal system. The aim of this research is to investigate how Copenhagen achieved a 90% organic transition at no extra cost to the food budget across the entire public meal system.

The main findings are that the conversion consultant agencies together with their competence and holistic overview coordinated a series of interventions in Copenhagen's public food system. They developed and refined a guiding framework (of system goals and rules) inspired by the culinary principles, that was used to guide mindset shifts and a kitchen conversion program that raised the competence of the staff (system structures) to be able to cook organic, healthy delicious food from scratch. The procurement officer utilised the procurement agreement (system rules) as a tool to drive the wholesaler to deliver food such that kitchens had what they needed to cook delicious, healthy and organic meals. The holistic conversion consultant activities were able to coordinate implement system interventions due to the legitimacy and funding that was provided by high level political commitment.

I argue that these crucial components are self-reinforcing and need to be applied as a whole package to such that the kitchen conversion program can transition both the kitchen culture and the procurement agreement to source organic such that the cooks are enabled to cook healthy delicious organic food.

1 Introduction

1.1 The Crisis We Face

Our world is facing an unprecedented social and ecological crisis. This can be observed at local, regional and global scales.

When it comes to the health of people, there are over 2 billion adults overweight and over half a billion adults who are obese (WHO, 2016). The prevalence of diabetes globally has doubled since 1980 and stands at 8.5% of the global population (WHO, 2016). Diet related Non Communicable Diseases (NCDs) are the single biggest killer world-wide (WHO, 2017) and represent a greater risk of morbidity than “unsafe sex, alcohol and tobacco” (Willett et al., 2019, p. 1) combined. High-income countries, those that typically feature diets dominated by excessive calories, heavily processed foods, animal products (Pollan, 2008) are the ones that are suffering from high rates of NCDs (WHO, 2018). This is only getting worse as more and more countries aspire towards the ‘Western’ diet (Willett et al., 2019) and the Western definition of a “good life.”

We have observed numerous troubling problems in our environment, such as increasing frequency and intensity of heat waves and droughts (Ahmed, 2016; Welch, 2018) and extreme weather events such as floods and fires (Cave & Abbott, 2020; Phillips, 2020; Readfearn, 2020). Regional water systems are being disrupted, depleted and polluted (Steffen et al., 2015). Renewable and non-renewable resources are being consumed unsustainably, such as the depletion of topsoil (Amundson et al., 2015), minerals (Ahmed, 2014), and fossil fuels (Capellán-Pérez et al., 2014)

Our unsustainable levels of material and energy consumption are undermining our earth system’s ability to support human survival and wellbeing. We have essentially degraded critical biophysical processes of our earth system as the planetary boundaries framework reveals (Rockström et al., 2009; Steffen et al., 2015) and therefore we have degraded the earth system’s ability to support the provisioning of food, fresh water, wood, fibre, genetic resources and medicines necessary for human survival (Ahmed, 2016).

We are eating our way to death and disease.

Our food system is a significant contributor to the undermining of our earth system and the exceeding of the aforementioned the planetary boundaries, with agriculture responsible for; 70% all water withdrawals (FAO, 2016), 19-30% of global human caused greenhouse gas emissions (Vermeulen et al., 2012), nitrogen and phosphorus pollution (Parris, 2011), 33% of arable land being degraded (Pennock et al., 2015), driving 80% of the world’s deforestation (Kissinger et al., 2012), and significant biodiversity losses (Scherr & McNeely, 2012). The current food system is also inadequately addressing the socio-economic issues such as malnutrition (Bioversity International, 2014), non-communicable diseases as the number one killer (WHO, 2012), insecure farmer livelihoods (European Commission, 2014; FAO, 2004) and exploitative labour conditions in food sector (ILO, 2008; ILO, 2015).

Within the current food system, there is widespread recognition from key actors within the food system that the food system has been significant contributor to the aforementioned negative outcomes. The path forward advocated by the various actors is in heavy dispute (De Schutter, 2017), with extremely varied prescriptions to address these ‘negative outcomes’. Regardless, there are many who advocate for ‘fundamental transformation’:

*“...today’s food systems require a **fundamental transformation** to meet human needs within planetary boundaries in 2030.” (WEF, 2017) “Meeting the formidable, multi-faceted challenges facing global food systems today **requires a systems-level transformation** rather than incremental improvement.” (WEF, 2017)*

“Tweaking practices can improve some of the specific outcomes of industrial agriculture, but it will not provide long-term solutions to the multiple problems it generates. What is required is a fundamentally different model of agriculture based on diversifying farms and farming landscapes” (IPES Food, 2016)

IPES, a key actor in the ‘food movement’ is advocating for fundamental socio-economic transformation, from a highly interdependent uniform industrial long supply chain agro-ecosystem, to a more independent and diversified agro-eco-system with shorter supply and retail chains. While IPES believe that business actors who are dominant in the food system have a major role to play, they strongly advocate for the clear establishment of **political priorities** in order to ensure that the “...necessary wholesale transition towards diversified agroecological food and farming systems is able to take root...” (IPES Food, 2016). They recommend 7 key actions that will help drive the fundamental transformation:

1. *“Develop new indicators for sustainable food systems*
2. *Shift public support towards diversified agroecological production systems*
3. *Support short supply chains & alternative retail infrastructures*
4. *Use public procurement to support local agroecological produce*
5. *Strengthen movements that unify diverse constituencies around agroecology*
6. *Mainstream agroecology and holistic food systems approaches into education and research agendas*
7. *Develop food planning processes and ‘joined-up food policies’ at multiple levels”*
(*ibid*)

City municipalities can play a significant role in this wider system change by utilising existing powers, mandates, purchasing power and property ownership to significantly support a more sustainable and resilient food system (Hawkes & Halliday, 2017; MUFPP, 2015). Certain existing mandates can be linked to pushing for a more sustainable food system, including mandates for water quality and waste management etc. There are many municipal mandated responsibilities, that can be aligned with transforming city food systems. Those responsibilities include addressing waste management, inclusion of refugees, environmental protection, “poverty, health and social protection, hygiene, sanitation, land-use planning, transport and commerce, energy, education and disaster preparedness” (MUFPP, 2015, p. 1) Cities can utilise their levers to make interventions inspired by the recommendations of IPES-Food that are relevant at a city scale such as **(A1) facilitating the shortening of the food chain, (A2) implementing a public procurement policy** that preferences consumption of sustainable, local healthy food in publicly operated facilities **(A3) promoting and enabling grassroots initiatives and networks to establish/grow/sustain community kitchens, social pantries and community gardens** and (IPES Food, 2016; IPES Food, 2018; MUFPP, 2015). These interventions can be linked to other municipal ambitions regarding addressing climate breakdown, and implementing the UN Sustainable Development Goals.

Copenhagen has implemented a coordinated program of system interventions to transition their public meal system and procurement agreement to use 90% organic food at no extra cost to the food budget. They were motivated by concern from agri-chemical contamination of their water supply and responded due to their municipal responsibility for public health. The City of Copenhagen (CC) set a goal in 2001 to transition its public meal system to source 75% of total food inputs from organic sources for all public meals. They embarked on a transition journey to leverage their purchasing power and mandate for providing meals to attempt to address the water pollution. The city reset that goal in 2007 to achieve 90% by 2015. By implementing a coordinated program of system interventions that addressed both the supply of organic food through procurement innovation and the production of meals with kitchen conversion

program and overseen by a competent team of conversion consultants the municipality transitioned its entire public meal system to cooking 90% organic food at no extra cost by 2016 (CC, 2016).

Transitioning the public meal systems can be an important driver of transitioning production practices by stimulating demand for more sustainable produce and hence farmland with more sustainable production practices. It is dependent on what sustainability criteria is specified in such a transition. Copenhagen specified it primarily through organic certification, but also by requiring seasonal produce. Regardless of the sustainability criteria specified, an organic transition of a city's entire meal system at no extra cost presents an interesting case that can inform other municipalities who want to embark on a similar transition of their entire public meal system.

1.2 Research Objectives and Question

Literature can help us understand what a city could and/or should do, but it should be complemented by investigating real cases of what interventions cities have attempted with regard to sustainable food systems, especially where their interventions have achieved 'success'. Therefore The research objectives are to uncover how the Municipality of Copenhagen initiated and achieved its goal, to highlight the crucial components for achieving such a transition, and inspire other cities to be able to leverage their public meal system to achieve beneficial outcomes. As such, my research question focuses on:

How did the Municipality of Copenhagen transition to 90% organic food for all public meal offerings in Copenhagen at no extra cost to the operating budget and what were the crucial components to transition kitchens to 90% organic?

2 Research Design/Methodology

This research is seeking to understand and explain a complex phenomenon with regards to **how** the transition was initiated and achieved in the city of Copenhagen. Following Yin (2009), I chose the case study approach to “understand complex social phenomena” (, p. 19).

The research objectives and questions of this study are primarily explanatory and largely focused on **how** transition was initiated and achieved. According to Yin, “such questions [how and why] deal with operational links needing to be traced over time,” (Yin, 2009, p. 23). Since this thesis seeks to focus on change that has been and currently is implemented, I benefited from a time-frame focus that considers the present situation as well as exploring the past. This also involves significant consideration of history.

While historical information is relevant to explore the topic of effective action towards implementing measures that led to a more sustainable food system, it is also important to produce work that would be relevant to inspire others in a similar urban context. Therefore this thesis will also explore the recent contemporary events regarding change. A case study approach was chosen, because of its “ability to deal with a full variety of evidence — documents, artifacts, interviews and observations —” (ibid, p. 23). In line with Yin’s (2009) recommendations, interviews of those involved in the events and participant observation as part of the repertoire of the researcher contributed to the rich information that typically come from a case study.

Defining the case and refining its boundaries was crucial for managing data collection and analysis, as many points of interest emerged throughout my inquiry. Hence, I found it appropriate to focus the case on ‘the public meal service delivery produced by the municipal operated kitchens of the Children and Youth Department (BUF), the Health and Care Department (SUF), and the Social Welfare Department (SOF), looking into how the meal system functioned, functions and how it transitioned its operations to 90% organic food at no extra cost’. Bounding the case allowed me to be more selective when I needed to identify which stakeholders to interview, reports and documentation to review and processes to dive deeper into. This approach also helped me to establish the time frame needed to examine the transition process that took place between the years 2000 to 2016.

2.1 Case Description

2.1.1 Overview of the public meal system

The public meal system of Copenhagen back in 2001 consisted of 1041 different kitchens cooking public meals with DKK 200 million of produce annually. Today the public meal system consists of 1000 municipal kitchens cooking 10 000 tons of food annually worth approximately DKK 280 million. The majority (95%) of the food is purchased by 3 different administrations the Administration of Children and Youth (BUF), the Administration of Health and Care (SUF) and the Administration of Social Welfare (SOF) who operate kitchens within the institutions that they manage (CC, 2020), see Figure 1. The other administrations TMF, ØKF and BIF administer employee canteens which are privately operated.

Today, food is supplied to the kitchens by a private wholesaler. A procurement agreement governs the terms of service (frequency of deliveries, lead time from ordering to delivery) and what food is available for purchase. Kitchens food budgets are managed by each institution, which is assigned a budget for the entire institution. They have autonomy to decide how much they wish to spend on food. Consequently, the kitchens decide their own menus and what they wish to order through the procurement agreement. The procurement agreement is managed by a procurement officer who sits within BUF.

PUBLIC KITCHENS

1 000 KITCHENS
70 000 MEALS/DAY
10 000 TONNES OF FOOD
1 750 EMPLOYEES

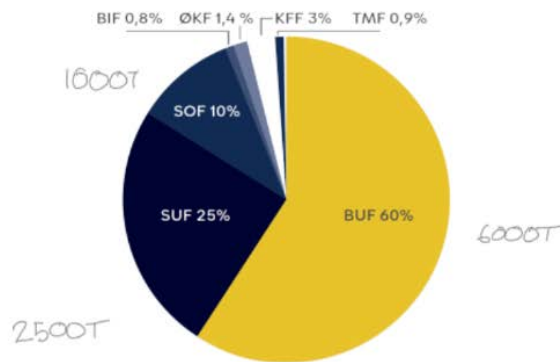


Figure 1: A statistical overview of the public meal system and the division of the food according to the different municipal departments (CC, 2020).

Kitchens have been and are embedded within institutional facilities that are managed by their relevant administrations, each with their own mayor and political committee that have varying political interests. See Figure 2 which detailing the kitchens, basic statistics on each type kitchens, the administration that has responsibility over those kitchens. Money flows are represented by yellow lines, the flow of orders are in orange and product flows are in black, product information flow is in red.

2.1.2 Why Copenhagen

There were other cases I was considering working with, including Ghent and Glasgow where I had established contact with key stakeholders who would have been able to provide access to other relevant stakeholders. While these cities aspired to implement public procurement for local, sustainable produce for part of their meal offerings to the public, the City of Copenhagen had already achieved a transition to 90% (average) organic food sourcing for all kitchens (Copenhagen, 2016). It was the largest organic public procurement project I had come across and what was even more fascinating was that they had implemented in for all their kitchens, not just a limited school meal program. The key-stakeholder worked directly with the organic meals program within the City of Copenhagen. Having made contact in-person she was interested to facilitate this research by providing insight and access to other stakeholders within the City of Copenhagen's institutions as well as external consultants that were relevant to the transition.

Reviewing the success and challenges they had compelled me to dive deep into this case in order to understand the key ingredients of transition which could be extrapolated in different contexts, cities and countries. Copenhagen also had challenges and ambitions to further influence sustainable eating and sourcing. So, it was anticipated that the case would also offer opportunity to provide relevant recommendations on improving the sustainable sourcing and eating of sustainable food through either their public meal system or other public service delivery as part of their municipal mandates.

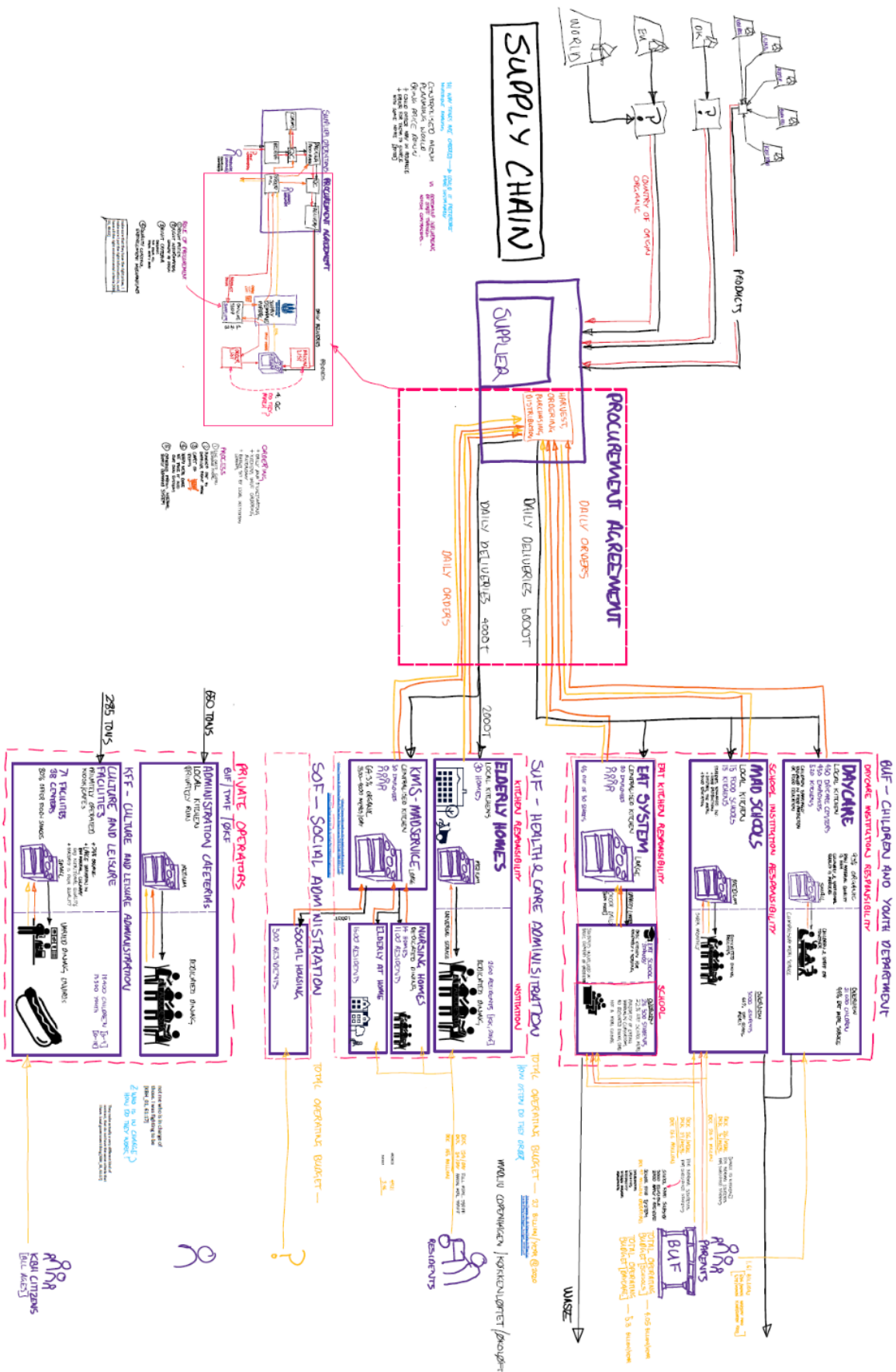


Figure 2: A giga-map of how the public meal system functions

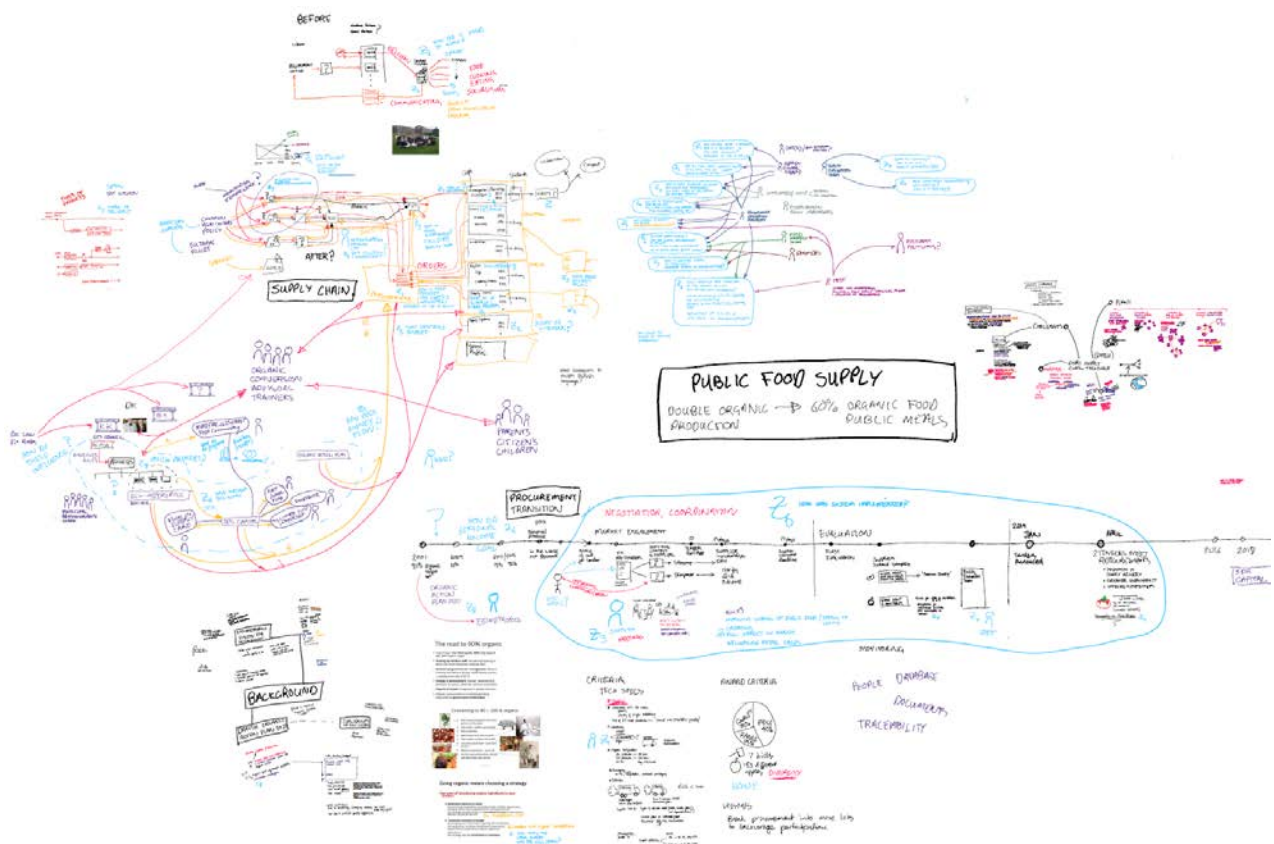
2.2 Methods

2.2.1 Data Collection

In order to answer my research questions, I collected data through several different sources, including documentation and reports, giga-mapping, semi-structured interviews and participant observation.

Preliminary Desk Research and Document Review

To get an initial understanding of the case and its context, it was crucial to review documentation specific to the case. I reviewed 2 reports from external organisations, 2 overview presentations by actors engaged in the transition about the public meals in Copenhagen and 2 municipal strategy documents about their food strategy and public meals system. Additionally academic literature on the wider context of organic public procurement for public meals in Denmark relevant to the Copenhagen public meals case provided a more thorough understanding of the relations. These documentations helped me grasp an understanding of the context, the chronology and multiple actors whose roles varied in power and impact.



Giga-mapping

I converged the data I collected through the preliminary desk research and document review by a technique called 'Giga-mapping'. Giga-mapping is a "super extensive mapping across multiple layers and scales, investigating relations between seemingly separated categories (Sevaldson, 2011, p. 1). It is particularly useful for "extreme learning situations... to map out the knowledge field early, to jump-start targeted quick research and to start with establishing the expert network early" (Sevaldson, 2011, p. 9) and to grasp complexity of a system context, "its sub and supra-systems, its environment and landscape" (Sevaldson, 2018, p. 8). The technique seeks to "grasp, embrace and mirror the complexity and wickedness of real-life networks of interrelated problems (problematiques)" (Sevaldson, 2018, p. 10). That is why I chose Giga-mapping to handle, understand and make sense of the large amounts of complex information that are typical of a case study. Yin (2009) also recognises the importance of organising

complex data arising in case studies. With this method, it was possible to effectively organise and present data in a visually compelling, interesting and neat way. The giga-map was shared with the key stakeholders for ensuring its accuracy and depth. I utilised Giga-mapping to develop an initial system map of the public meal system. With much insight gained from secondary data research and organised by giga-mapping, I proceeded to identify what I needed to know more about, what questions were relevant and potentially what type of stakeholders could offer insights on these various questions. This information was then used to inform the key stakeholder so that they could organise access to relevant stakeholders and set-up interview appointments for my initial fieldwork in Copenhagen.

As an output from the initial Giga-mapping process I developed a list of the type of stakeholders I was looking to interview:

- Stakeholders who could give insight on various food initiatives identified in the City of Copenhagen “Eco-Metropol” and “SDG Capital Goals” strategic documents, including work on the Food Strategy [2, 12 initiatives] and ‘The Food Community (Madfælleskabet)’ to understand how these initiatives are affecting food production, regionally, in Denmark, European Union, and world from sustainability perspective.
- Stakeholder who can talk about the Danish state funded Organic Action Plan 2020
- Stakeholder who can talk about effects/influence of DK and EU Laws on Food System relevant to Organic Action Plan 2020 and Public Procurement as an intervention
- ‘Expert’/someone who understands the national and local politics and national and local public service structure, the scope of municipal powers, and their influence on CPH’s public procurement transition and Denmark’s Organic Action Plan 2020
- Stakeholder responsible for Food for Children and Youth
- Stakeholder responsible for Food for the Elderly
- Stakeholders from the Suppliers (one who was successful, and maybe one who almost was, but didn’t quite meet requirements), to talk about challenges and how the supply chain collection, distribution, farm data, ordering and purchasing system works
- A stakeholder who was part of the the Quality Evaluation Team assessing the quality of the food samples submitted by those bidding for the procurement tender or at least someone who can talk about how it worked.
- Chef from each type of public kitchen (central vs local kitchens)
- Someone who understands the sustainability requirements of the Technical Specifications of the Procurement Criteria
- The Procurement Manager

1st Inquiry

Semi-Formal Interviews

After some discussion with the key-stakeholder in Copenhagen I had appointments with 10 informants that could comment on the areas of interest for the research. I conducted the initial fieldwork in September 2019. I held semi-formal interviews in English, which lasted between 45 and 90 minutes with the following stakeholders:

1. Municipal employee at the Children and Youth Administration (BUF), responsible for overseeing the Food Schools and EAT Central Kitchen activities for BUF.
2. Municipal employee at the Children and Youth Administration (BUF), who manages the EAT Central Kitchen for BUF’s school food program.
3. Municipal employee at the Health and Care Administration (SUF), responsible for overseeing the provision of public meals for the elderly under the care of SUF
4. Municipal employee engaged in the Food and Gastronomy, Creative Growth Team at the Culture and Leisure Administration (KFF) also on the working group developing the 2019 City of

Copenhagen - Food and Meals Strategy and informed about the international partnerships City of Copenhagen is engaged in related to food.

5. Municipal employee at the Children and Youth Administration (BUF), responsible for developing the procurement agreement for sourcing of food for the BUF, SUF and SOF operated kitchens.
6. Municipal employee at the Economic Administration (ØKF) who was responsible for the contracts for engagement of services of external organisations for supporting the delivery of the Municipal ambitions relevant to food more broadly and the ongoing support for public kitchens. Also responsible for leading the development of the 2019 Food and Meals Strategy.
7. External consultant from Meyers Madhus involved in delivery of the Food Quality Agreement for municipal operated kitchens
8. External consultant from Copenhagen House of Food (KBH Madhus) and former Municipal employee for the Lord Mayor of Copenhagen in 2009 overseeing the setup of Copenhagen House of Food.
9. External consultant and independent advisor to the City of Copenhagen on Food related matters, former employee of Copenhagen House of Food and Leader of the 2012 Danish state funded "Organic Action Plan 2020" Task Force which funded the transition of # Public kitchens around Denmark
10. External consultant, Board member of the Danish Organic Association and former Municipal Employee at the Technical and Environment Administration (TMF) who was a conversion agent for Copenhagen's kitchens from 2003-2009 and still engaged in assisting Municipalities to leverage their powers and mandates to deliver sustainable diets, organic public meals, urban agriculture etc.

I chose semi-structured interviews because it allowed me to cover the essential topics that I was researching while allowing the interviewee to emphasize what is more important to them, so new areas of interest could emerge (Bernard, 2006). I prepared an interview guide (See Appendix A) which I used as a guiding structure. The guide covered topics

Informants were provided with a physical copy of the research information letter (see Appendix B), made aware of that participation was voluntary and their rights. Informants gave verbal consent for participation before the interview was recorded using an audio recording device. Notes were taken and organised using a visual approach similar to a mind-map during the interview. Copies of these notes have been stored on a secure server. Further details on the ethical considerations around collecting, storing, and processing of this sensitive data will be further detailed in Section 2.4– Ethical Considerations.

Participant observation

The purpose was to gain extra context and insights that may be relevant to the successful transition of the public meal service delivery in particular and other supporting public food initiatives as it is experienced by a common (albeit particularly attentive and research focused) participant. Case studies can benefit from complementary data from participant observation (Yin, 2009). The data collected included:

1. Descriptions/photographs of the physical space
2. Emotional reactions associated with the first encounter with the space
3. Notes about social interactions and power dynamics observed

As part of the fieldwork I visited the following events:

1. **Madfest Food Festival** that was hosted by the City of Copenhagen to publicly showcase and celebrate the work of the public institutions and stakeholder organisations involved in delivering public meals at the in Nørrebroparken (Copenhagen, 2019). Various institutions and stakeholder organisations hosted activities where food and meals were the focus. These activities were aimed at the various users of the Municipality's public services, children, youth, senior citizens and users

of social services. Here it was possible to see a key event used by organisations to communicate their work and engage the citizens of Copenhagen

2. **Madpris Recognition dinner at Nørrebrohallen** where the Lord Mayor gave recognition and awarded various prizes to the various actors, chefs and kitchens involved in improving the public meal service delivery. Here it was possible to participate in a dining experience with the entire group of chefs, and others involved in public meal service delivery and observe them being recognised and celebrated for their contribution to the citizens of Copenhagen.

I visited the following locations:

1. One of the Municipality Administration Employee Canteens: The purpose was to experience the organic meal and observe the dynamic within the canteen.
2. The Children and Youth Central Kitchen in Nørrebro: To observe the facilities and dynamics of those using the space of the central kitchen and compare it to that of a local kitchen.
3. The Health and Care Elderly home in Nørrebro: To observe the facilities of a small kitchen where food is prepared on-site
4. Meyers Madhus: To observe the facilities where training of employees from a public kitchen was occurring and observe the dynamics of those using the space
5. Copenhagen Madhus: To share lunch with the employees, observe the facilities and experience the dynamics of those using the space

2nd Inquiry

After processing the interviews from the 1st Inquiry, I identified a number of 'Zoom' points. These zoom points are areas that require additional data inquiry. Therefore, a 2nd inquiry was required that involved a follow-up call with 4 of the previous stakeholders and one additional stakeholder not included in the initial round of interviews. The purpose was for the stakeholders to clarify certain points identified as relevant in the interview and to provide documentation that could be used as an additional reference to reinforce information they had provided in the interview.

The Giga-map of the informant was utilised to organise the flow of the call, and also provide a visual aid for the informants to see the context of the follow-up questions.

I recorded the audio from the calls and took notes directly in the Giga-map that was relevant to that informant. Informants were informed about the recording and made aware a second time that their participation was voluntary. Audio files were stored as per Section 2.4 – Ethical Considerations.

2.2.2 Analysis

Giga-mapping

Yin (2009) recommends using analytical manipulations to 'play' with and order the data as a useful starting point. When combined with a general analytic strategy Yin argues that tools such as analytical manipulations can produce "compelling analytic conclusions" in particular:

- "Making a matrix of categories and placing the evidence within such categories
- Create data displays – flow charts and other graphics – for examining the data" (ibid, p. 120), and
- "Putting information in chronological order or using some other temporal scheme" (ibid, p. 120).

Inspired by the recommendations of Yin (2009), Giga-mapping was chosen as a tool for analytical manipulations. Information from the Interview Notes, and Interview transcript were Giga-mapped for each informant with the objective being to cluster information around similar topics and to embed relevant documents and references that could corroborate information provided by the informants.

Following the Giga-mapping for each informant, summary Giga-maps were developed that combined and clustered relevant information for answering the research questions that drew upon all the data from both informants and the document review. The summary Giga-maps produced were as follows:

1. Function of the public meals system from farms to waste, including the flow of products, product information, orders, and money to understand how the system works.
2. Timeline of transition to 90% organic from initiation to achievement
3. Summary of components needed for transition

Organising the data on giga mapping yielded 6 different clusters of data that I will present as results in the next section: Holistic management of transition, Evolving municipal motivations, Conversion approach, Sustained political and funding commitment, National policy inspired by Copenhagen's transition, and Sourcing the Ingredients - Procurement Innovation.

2.3 Reliability and validity

To ensure the validity of this research, I have utilised multiple sources of data (in this case: observations, interviews and document review [books and literature]). I have also conducted interviews with 10 participants/informants that have provided multiple perspectives on the same topics of interest. This has been important in order to triangulate or corroborate the results between the multiple sources of evidence.

A chain of evidence has been maintained, from the initial interview audio/notes to transcripts, observation notes, the clustering Giga-maps right through to the findings.

A case-study protocol that guides the research will allow others to replicate results against the primary data. A case study database is key for maintaining a chain of evidence so that others can audit/verify your results or investigate deeper than what is available in the case reports.

2.4 Ethical Considerations

Personal data that have been collected in this research consist of the names and titles of informants and their connection to the public food initiatives in the City of Copenhagen.

In this research I have stored the primary data, audio files, videos, photos and scanned notes on a secure cloud storage service using the NMBU OneDrive Service. All personal data has been anonymized on the interview transcripts, where the names were replaced with a code, and other personal information redacted. The codes have been stored separately from the transcripts and audio recordings.

Photos, videos and interview audio files have been deleted at the end of thesis project and recognisable features of individuals have been obscured in files that will be used for publication or kept for further research purposes.

3 Results/Findings

In this section, I will present the results to the main research question, “ How did the Municipality of Copenhagen transition to 90% organic food for all public meal offerings in Copenhagen at no extra cost to the operating budget and what were the crucial components to transition kitchens to 90% organic?”. I catalogue the findings in categories that emerged through the data analysis, and dive deep into these categories by further subcategorising them.

The municipality was able to transition all public meal offerings due to the competence of the conversion agencies who holistically managed the transition who effectively persuaded stakeholders to participate and competently implemented a novel conversion approach through a ‘kitchen conversion program’ guided by clear guiding framework. Coupled together with procurement innovation it enabled kitchens to transition to 90% organic and at no extra cost. The pilot projects proved the conversion approach, supporting the sustainment of the transition was able take place due to sustained political and funding commitment, was anchored in evolving municipal motivations.

3.1 Holistic management of transition

According to interviews and document review the transition was implemented through a program of kitchen conversions that was coordinated and implemented by actors described by informants as ‘conversion consultant’ agencies. These conversion agencies were a team of different professionals and different disciplines set up by the municipality to drive the transition. The Technical and Environment Administration’s Dogme Organic Office was the first team that lead the transition from 2001-2008, and Copenhagen House of Food was setup in 2007, and drove the transition to from 2009 to 90% organic in 2015. According to the data, there were a number of characteristics that enabled these conversion consultant agencies to successfully coordinate and implement such a program; they had both the municipal authority to access all areas visiting and talking to the various institutions and kitchens and decision makers across all administrations. This enabled them to develop an informed overview of the public meal system, which none other unit in the municipality had. This informed overview was significant to understand the specific practical challenges and opportunities in the institutions and kitchens for successful transition. Holding a holistic overview also helped the agencies to understand the different agendas (objectives, interests and goals) of the decision makers and staff who needed to be persuaded to participate and embrace the kitchen conversion program. The agencies were able to act on the challenges of the kitchens and agenda of the stakeholders, because their team of people held the competence to deliver both their assigned municipal objectives of culinary and organic transition while also delivering synergies that benefited the stakeholders.

3.1.1 An informed overview of the public meal system

During the interviews, the theme of siloed municipality appeared several times. Before the organic transition, there were no actors overseeing the entire meal system, the kitchens of the various administrations were operated within their administration silo. Two participants mentioned still how the municipality does not function as a whole unit, with each department having its own mayor and political committees. The participants explained that there is a whole mess of different agendas: *“So you have the administration, and you have the actual people in the kitchens, and you have the staff... that doesn't have anything to do with food. And it's this whole, this whole mess of different agendas.”*

With the initiation of the organic transition, these conversion consultant agencies had both the access to the entire public meal system, and the competence to develop an informed overview on the status of the kitchens as well as the agendas (objectives, goals and mindsets) of the various stakeholders. According to

KBH10, it is crucial that the conversion consultants knew how to navigate the “mess of different agendas” for them to be able to implement their agenda of an organic (from 2001) and culinary (from 2009) transition. To be able to understand where and what to target and how to start, it was crucial for the conversion consultant agencies to understand the status of the kitchens of the various institutions, their dynamics, status, challenges and opportunities. The knowledge was partly developed through the scoring of kitchens according to the Kitchen Promise indicators detailed in section 3.3, but the understanding of kitchens also required intimate knowledge that comes from visits to the kitchens. The knowledge of the kitchen status was held traditionally by the conversion consultant agencies and their staff.

“The experts in which kitchens have which challenges, how should they be met? Like with the organic conversion who's actually really close to being where they should be and who is far from it... That expertise has traditionally always been with the with the consultant and not within the municipality, because they like that they haven't had that knowledge base” (Interview with KBH10)

KBH10 describes how it was crucial that the conversion consultants got away from their desk and got out in the field to develop that informed overview, while also developing rapport with the various stakeholders. KBH10 describes how the director of KBH Madhus would go around ‘the house’ and she would get agitated if she saw too many people at their desks, she would say “*you have to get out there.*”

It was also no easy task for the conversion consultants as they would often be “*kicking in doors and talking to people who don't want to be bothered*” (KBH10). KBH10 explained that it was the conversion consultants that had an overview of the status and challenges of the kitchens as well having a capability to understand and act on the various agendas of the kitchen staff, institutional staff and decision makers. According to them this overview has not been held within the municipality.

3.1.2 Competence to implement kitchen conversion and meet additional objectives

The conversion consultants also needed to be capable to deliver both an organic and culinary conversion while also having the competency to identify opportunities for synergies such that the kitchen conversion program could also address the agendas of the relevant stakeholders.

KBH05 and KBH10 both express that it was crucial that the conversion team was comprised of professionals that knew their way around the kitchen, and how to work with the kitchen staff. KBH10 also emphasised that Copenhagen was able to achieve its large ambitions compared to many other cities, because they actually spent money on practical implementation of structural changes in the kitchens and institutions, that it was not “*solely a desktop project*” and the money was not just spent on a slick website or fancy strategy documents. KBH05 described that conversion consultants needed to be “*good in the kitchen... otherwise you can't get very far, you won't be good with food waste... you have to be skilled with your hands and with your head.*” A central part of the kitchen conversion program is the delivery of practical courses, and in-kitchen consulting around menu planning, ordering and kitchen process improvements.

Reviewing KBH Madhus' website, their team was mix of specialists, comprised of “*chefs, food specialists, generalists, teachers, project managers, communicators, ethnologists, designers etc*” (KBH Madhus, 2018a). It was clear from the interviews that the conversion consultants engaged, not only across the municipality, but that they engaged with wholesalers, and collaborated with foundations and other public and private sector partners.

KBH10 described how consultants had to have the competence to identify opportunities for synergies and deliver on objectives of the various administrations and institutions, such as integrating children into the food production, implementing infrastructure changes for a better eating environment and having staff

eat with students that leads to a better relationships between student and teacher and enhanced learning opportunities (KBH10 and KBH08) (KBHMadhus, 2018). Another example given by KBH08 was how consultants demonstrated that delicious food that is suitable to the needs of the elderly would get eaten, and that the nutritious status of the meal would translate to nutrition in the stomach of the elderly.

3.1.3 Ability to demonstrate common interest and align stakeholders

Besides the municipal objectives having political support, the conversion consultants had no authority to force resistant institutions to participate in the kitchen conversion program to deliver those municipal objectives. Neither could they force the staff in the kitchens or institutions to cooperate. Without being able to force the institutions to participate, the consultants had to persuade/motivate the institutional decision makers, who would decide if their kitchen(s) would participate in the kitchen conversion program.

According to KBH05 the primary tool that conversion consultants have been using over the years is motivation.

"[Stakeholder from BUF] had authority because she was part of [BUF], a part of the municipality that had the schools, and she was there and had authority. We had no authority coming from another part of the administration – so motivation has been the primary tool I've been using the years [that] I've been working with this." (KBH05)

But they also used their informed overview of the kitchens and the agendas of the stakeholders to demonstrate how the kitchen conversion program could benefit the stakeholders.

Motivating decision makers

Without being able to force the institutions to participate, the consultants had to persuade/motivate the institutional decision makers, who would decide if their kitchen(s) would participate in the kitchen conversion program. The degree to which the institutions embraced the program depended on the administration that they were attached to, for example Day care centers embraced the kitchen conversion program, while the stakeholders in SUF were somewhat hesitant (Interview with KBH05).

"... and we had so much trouble starting on the elderly homes because... ahhh they were very conservative in that administration. And they kept saying, Oh, we had a pilot project earlier. And you know, "it didn't work, it was very expensive." We gave them a lot of money and they did not get very far. But we said we're doing it without no money" (KBH05)

To inspire participation TMF would both seek to demonstrate how the interests and objectives of the decision makers and the kitchen staff and would also be met with the kitchen conversion while also making the case for 'why organic' and how cooking organic at no extra cost to the total food budget required a culture conversion to cooking from scratch.

Having a holistic overview of the public meal system was crucial to identify opportunities for synergies and demonstrate common interest to persuade decision makers to register their institution for the kitchen conversion program. Having an informed overview was also crucial to shifting the mindsets of the institution and kitchen staff to embrace the kitchen conversion program its approach.

KBH05 explained an example where having a contextual understanding that the decision makers and staff Health and Care administration (SUF) were not that interested in organic food. So, the conversion consultants would avoid talking about organic food, but instead they talked about homemade food cooked from scratch. KBH10 also expressed how it was critical to talk about nutrition when talking to SUF decision makers. The quote below explains the versatility of the conversion consultants for understanding the needs and interests of the stakeholders.

“We could not talk about organic foods, nobody wants it. So, we talked about nice homemade cooked food for the elderly people made, from scratch... and everybody said, Oh, that sounds nice” (KBH05)

Motivating institutional and kitchen staff

At times it was necessary for the conversion agencies to operate as a somewhat neutral actor to build trust and also to ensure that they did not moralise staff, but instead identified common interest and helped them to shift their mindset. Part of shifting their mindset involved showing the link between the public meal system and the impact of buying organic on the environment as well as showing how quality meals would lead to healthier, happier citizens. These were crucial factors for motivating the staff to embrace the culture conversion program and contribute in the organic and culinary transition.

KBH08 explained how KBH Madhus strongly emphasised the need for their conversion consultants to sympathise and build trust with the ‘kitchen ladies’ to not just come in as police to shame them about the bad food, what they were not doing, but instead train them and praise them (when they improved):

“These employees that are making the food are women and not educated, getting up at six in the morning to make food for everybody else. Never getting any recognition for their jobs. Nobody wants that kind of jobs. And that will not increase the quality of the food if nobody wants to work there.

So we wanted to do something else. We wanted to praise them. We wanted to show the food examples, we wanted to [raise] the education level.

We want to train them and we made a full program on doing that.”

The conversion consultants still had to a responsibility to deliver municipal objectives, but they had the discretion to know when to enforce rigid enforcement of the guiding framework (covered in Section 3.3) and when to show lenience and trust the kitchen staff to know their eaters. KBH10 explained how KBH Madhus needed to ensure that kitchens adhered to the nutrition guidelines “but the people in the kitchens know that you have to make a cake some time” (KBH10). They further explained “you're often the go between some rigid but very good ideas and then practical reality.”

So instead of shaming the cooks the conversion consultants emphasised understanding their context, talking their language and demonstrating common interest while praising them and training them.

“With most cases, most teachers, social workers, kindergarten teachers, assistants, don't even think of themselves as working within the food sector.

so like instead of instead of like, “Why are you not facilitating the meals in in this optimal way” more like give them tools to see how they can make a meal and talking about seeing and tasting different things, how they can make that a part of all the things they have to train the children

so, you have to figure out, what's their agenda then adapt your approach” (KBH10)

KBH08 would often use the angle that “You’re not a bad chef” “We just need to go organic” (KBH08). According to both KBH08 and KBH02 the mandate to shift to organic was the perfect excuse for culture conversion without the chefs feeling the blame. In addition to not feeling the blame, KBH10, KBH08 and KBH05 mentioned that cooking organic was one of the primary motivators for chefs to change culture. Many felt like they were contributing to the bigger picture of making a healthier life for Copenhagen’s

citizens and kids eating public meals. KBH08 describes the outcome that can come from aligning the kitchen staff to cooking organic and empowering them with skills and consulting support:

"It's much more much more motivating for the ladies that they can see Well, now I'm getting better and better at organic. At the same time, my, the people I'm making food for are getting more and more happy about the meals and I'm getting more and more proud of what I'm doing because I'm not just doing better food I'm

I'm also saving the world in my little nation" (KBH08)

KBH08 and KBH10 gave examples of other public kitchens not operated by the City of Copenhagen where decision-makers attempted to either do a culinary transition without organic or going back to conventional ingredients after achieving an organic and culinary transition. They stressed that cooking organic is clearly a motivator for some of the stakeholders involved in the transition.

"It makes sense for people to do [convert to organic] because they feel like they're contributing to like a bigger agenda. If you're just telling them to save money, then then good luck motivating them (KBH10)

...one of the kitchen managers, she made all the conversions [organic/culinary]. And then the politician says, Well now you're going to do... the same food, just conventional and all the employees gave up...It doesn't make any sense to us. The organic is too important to us. We can't make food out of financial [motivations]. And in a year, they had a more expensive kitchen than they had before they started the organic conversion" (KBH08)

While the conversion consultants would focus on changing the mindset and igniting the passion of the kitchen and institution staff to avoid micro-managing the kitchens, it was not always so straightforward to convert mindsets as was expressed by KBH10:

"...[it was] not super easy because you're asking people to change. You're challenging their views. You want to believe that you're doing your best. So if you have to tell someone, what they're doing is not actually up to par. That's a hard thing... it takes something that resembles conflict or fighting" (KBH10)

The conversion consultants sometimes had to confront resistant staff, and the director of KBH Madhus emphasised how important it was to get out of the office, and not avoid confrontation. Occasionally according to KBH05 they needed to use 'the municipality hammer' to force cooperation.

However, KBH05 also described how the TMF Dogme Organic Office would also actively seek out the kitchen staff who had energy, even those who were highly resistant as they were better to work with than those who were apathetic. KBH05 described an example of one resistant but 'burning' staff member whose kitchen was the first elderly home kitchen to achieve the gold mark (state certification that 90% of the food was organic) and become a role model for the rest to follow.

"The first elderly home kitchen who got the gold sign. Was one of the first, and I remember the first day I stepped into a kitchen, she said "I'm not gonna make any organic food in that kitchen"

And if I should advise anybody, find the fire, find the people who think, this is, the burning people, find them, and make your progress through them..

It was very easy [to turn them into a champion], we just talked about leek vegetable. We talked about how the difference between the fresh leek and the frozen leek, and

then "Okay, I see what you mean I remember how it was when I got into this" when she was young, she was passionate but she lost it. Then getting passion back"

3.1.4 Staff and decision-maker engagement tactics

TMF would use various 'inspiration events,' and introductory courses to make the case for organic and demonstrate the alignment between the kitchen conversion program and the interests and objectives of the institutional decision makers and staff. At one such event all the staff from the daycare and elderly institutions were invited to City Hall for a start-up party, "...come have some pancakes, come and listen..." according to KBH05 *"the starting party was so interesting that they had to come."* Once everyone was there enjoying pancakes and listening to live music, the TMF consultants brought up the kitchen conversion program - *"would you like to come into a project with us?" "this means you have to go to this education, and you have to..."* but *"we will come out to help you do this and that"*.

This correlates with an excerpt from a 2005 report about elderly home pilot projects detailing the approach used, activities and outcomes. The examples are indicative of the sort of inspirations days that the TMF Dogme Organic Office conducted for the pilot projects.

"1. "Gala dinner": A motivational event where employees, consultants, administrations and politicians (mayor) should meet each other and achieve a common understanding of the project. The consultants made the food, the principals served and the staff attended. Over 100 people attended this event.

2. "The Good Meal": Held in the Triangle at Kalvebod Brygge with presentations and debate around the meal now and in the future. Over 40 people participated.

3. "Det Rene Vand": An excursion around North Zealand with visits to waterworks, agriculture etc. to visit places that have groundwater protection as an essential part of their work. 20 people attended this day" (Christensen & Hastrup, 2005)

3.2 Evolving municipal motivations

Despite changing motivations throughout different administrations, the kitchen conversion program was sustained as it could address both municipal objectives. Back in 2000 there were deep concerns about the fertiliser and pesticide contamination of Copenhagen's drinking water supply and the political leaders of Copenhagen decided to use the municipal mandate of providing meals for the citizens to buy organic and send market signals for the farms to convert to organic. The Technical and Environment Administration's Dogme Office coordinated and implemented a kitchen conversion program to deliver that municipal objective. Later there was significant bad press about the quality of the municipal food which led to a shift in focus from cleaning up the water supply to culinary quality being the main motivation for political and funding commitment. This pressured the municipality to fund the creation of a new organisation tasked with raising the culinary quality of the public meals, known as the Copenhagen House of Food (KBH Madhus). As their motivations shifted, so too did the responsibility for coordinating and implementing the kitchen conversion program to address the motivations. By 2008 the responsibility for the driving the organic transition was shifted to KBH Madhus. The following section will dive into the findings around motivations for initiation and sustainment of the transition of the public meal system to cooking with 90% organic food.

3.2.1 Cleaning up Copenhagen's water supply

In 2001 the City of Copenhagen committed to convert its public kitchens to use 75% organic food due to their commitment to the Dogme 2000 environmental agreement, which was due to alarm about pesticides and fertiliser contaminating the aquifers (CC, 2005).

Copenhageners source their drinking water from the aquifers underneath farms in Zealand (the region west of Copenhagen) and chemical pesticides and fertilisers had been building up for decades, and there was great concern that if the trends continued Copenhagen's supply of drinking water was threatened (KBH05, KBH01) (EU Commission, 2007) (CC, 2005). Driven by their collective concern over the pollution of their water supplies, the Lord Mayors of 5 Danish municipalities - Copenhagen, Albertslund, Ballerup, Fredericia and Herning, met together to consider how to address human impacts on the environment. Chief among those human impacts considered was the chemical pollution of their drinking water supplies that are sourced from the aquifers under the farmland of Zealand. They made a binding collective agreement called the 'DOGME 2000 Environmental Agreement,' where they committed to transition their public kitchens to cook with 75% organic ingredients.

Those 5 municipalities then formed an organisation called the "Dogme Secretariat" which operated with 10 working groups, one of which was for Organic Food. The vision was that by buying organic the municipalities would be preferencing organic farming, and by extension, clean up the groundwater supplies for Copenhagen. This is reflected in sentiments of KBH05 and KBH10 and also in Green Accounts 2004 and TMF report from 2005.

"Copenhagen must be handed over to future generations in a better environmental condition than when we took it over... we must take responsibility that extends beyond the Copenhagen municipal boundary. The Zealand Groundwater, which supplies clean drinking water to Copenhageners, is an obvious area of responsibility.

By investing in [organic] in the municipality's institutions, we are helping to reduce pollution of groundwater - and ensure clean drinking water for future generations. Better animal welfare and a more diverse nature are other benefits" (CC, 2005, p.14)

The purpose of introducing ecology is to promote organic farming and thereby protecting drinking water from pesticides. All of Copenhagen drinking water is "sucked" into the city from large areas, which are outside the municipal boundary (TMF, 2005)

"Copenhagen gets their drinking water that we drink today from 100km around, big tubes running out their running under farmers' fields in other municipalities... and what happened was that some of the tubes got polluted. And they were closing one and opening another one, costs, maybe between 1 and 5 million kroners its very, very expensive to drill new water holes. Already at that time, they were closing a lot and opening a lot. And the city said, well, we cannot afford not to have drinking water

It's easier for us and cheaper for us to start a locomotive and this was the word to start a locomotive with our public kitchens to drive the organic conversion. By asking for organic food, then we will make the farmers start growing" (KBH05)

"I think at that time it was probably the main concern as far as many, many water, water plants were closing down... but it's really hard to find those old documents, I have looked for them online but they've been completely scrubbed from the municipal... But I remember that the motivation was like, we want clean drinking water for the citizens of Copenhagen" (KBH10)

At that time, they made a link between the mandate for delivering clean water for their citizens to their mandate for delivering public meals, and they thought that they can change things if they buy organic from Zealand.

3.2.2 Culinary quality and the creation of Copenhagen House of Food

By 2006 the focus shifted significantly from cleaning up the water supply to the culinary quality of the meals. This led to the formalisation and refinement of the conversion approach that had been prototyped and implemented by the TMF Dogme Organic Office.

Ritt Bjerregaard, previously a Danish Minister for Food, Agriculture and Fisheries was freshly elected as Lord Mayor of City of Copenhagen. At the time the municipal meals were getting a lot of bad press and KBH08 described that the Lord Mayor was:

"...was very keen on actually never having a front page in a Copenhagen newspaper again, where it says the food in the municipality is very bad... We had these cases coming up, pictures of gross food. And she said, I don't want to see that ever again"

Mayor Bjerregaard's election and shift in focus to culinary quality lead to the various political committees of the different administrations and eventually the Finance Committee deciding to create a new 'knowledge center,' on public meal production and serving – "the Copenhagen House of Food" or (KBH Madhus for short) whose primary goal was to assist with raising the culinary quality of the food (KBH08). An excerpt from the meeting agenda of the Health and Care political committee back in 2006 sheds some light on their responsibilities:

"Copenhagen Food House will have 4 key tasks:

- 1. Creation of a knowledge center for municipal food production and serving*
- 2. Development work in the municipal kitchens*
- 3. Development and implementation of a rating scheme for municipal kitchens and meals where the best are published by Madhuset*

4. Collaborate with external suppliers and stakeholders to improve quality of the municipal meals to create intelligent food - both in terms of nutrition, logistics, environment etc.” (Sillasen & Egsgaard, 2006, p. 1)

KBH Madhus were also given the task of reviewing the problematic KØSS model (KBH Madhus, 2007) , (Højgaard, 2007) and ultimately developing and implementing a new school food system, EAT financed by a grant of 30million, 65 million in construction funding for kitchen and dining infrastructure upgrades. Following, a permanent operating grant of 25million/year was established (KBH Madhus, 2009).

“The former Lord Mayor, she had been the Minister of Food in Denmark. And she was very much into organic food. And she said, Okay, we're going to have this Copenhagen House of Food as consultants. And their first task will be to develop an ambitious School Meal system. So, they had more or less, you know, free hands today, to develop what could be a good model” (KBH06).

In 2007 Copenhagen House of Food was created with the 2007 budget giving it 3 million for construction of premises and an annual operating grant of 6.3 million for the 2008-2009 period (CC, 2007, p. 20).

3.2.3 Transfer of responsibility for organic conversion to Copenhagen House of Food

In 2009, after the budget negotiations the City Council decided that the responsibilities for organic conversion would be transferred from TMF's Dogme Ecology project to Copenhagen House of Food ('KBH Madhus' for short) across all of the kitchens (CC, 2009b). KBH Madhus were then awarded an annual budget of DKK 4.76 million for their general responsibilities, and they were awarded additional budgets for special development initiatives regarding the nursing home central kitchens, nursing home production kitchens at DKK 1.2 million and for the development of a new concept for sports facilities.

“With the adoption of the 2009 budget, the Citizens' Representation decided to hand over the organic task to Copenhagen House of Food” (CC, 2009b, p. 2)

“That 4.76 mill. DKK annually to Københavns Madhus for restructuring and development over the years 2010-2011. The effort will include; conversion advice, courses, inspirational events, newsletters, food education initiatives, targeted information letters, ecology measurements according to new and old methods, external analyzes of kitchens and work processes, communication efforts and concept development” (Juhl & Plougmann Olsen, 2009)

The public meal system achieved a 90% organic proportion in 2015 under the direction of Copenhagen House of Food.

3.3 Conversion approach

A significant contributor to the successful transition to 90 percent organic in all public meals at no extra cost is the novel conversion approach developed and implemented in the program.

3.3.1 The status of the public meal system in 2001

According to my findings, when the kitchen conversion program started there were several challenges to be overcome at various levels of the public meal system. Informants KBH05, KBH08 spoke about how the public meals cooked in the various kitchens of the various administrations had a terrible reputation, did not meet the Nordic diet guidelines, nor was it respectable culinary quality. The dominant kitchen culture was driven by a mindset that saw food simply as fuel, hardly igniting passion in the staff. Structural issues included no real incentives or constraints to produce delicious food, staff suffered from a lack of skills, and consequently mostly prepared meals dominated by meat and low quality ingredients and pre-made processed foods. Most of the cooks in kitchens were detached from the food they cooked, as one interviewee suggests that it was typical for them to just take “scissors and cut a bag and putting some frozen things” (KBH05). Staff had a low status, low self-esteem and very little recognition for the work that they did (KBH02, KBH05, KBH08).

“these employees that are making the food are women and not educated, getting up at six in the morning to make food for everybody else. Never getting any recognition for their jobs” (KBH08)

The interviews revealed that it was not possible to simply substitute these conventional products for organic, they either didn’t exist on the market and if they did, they were far too expensive (Interviews with KBH05 and KBH08). A culture conversion was necessary for addressing the mindsets around what food was to ignite passion, and implementing an incentives and constraints guiding framework. The kitchen conversion program would implement a conversion of both the mindset and structures (rules, goals, competencies and infrastructure).

3.3.2 Why 90% organic

Some individual kitchens have reached 98% and 100% while some kitchens such as the central kitchen in the elderly home as still just over 77% (CC, 2019). According to recent budget notes, the central kitchen has both insufficient staff capacity to cook food from scratch and insufficient budget to buy more organic ingredients while cooking a more traditional menu to reflect the desires of the elderly residents. Since 2009 raising the organic proportion in the SUF Central Kitchen (KMS) has been a challenge. In 2009’s budget proposal, KMS was to receive an increasing in its annual operating budget of DKK 6.4 million from 2010 to increase the number of kitchen staff and also to be able to spend more on raw materials. It is unclear if the 2011 budget which saw KBH Madhus experience budget cuts also affected this permanent operating budget increase to KMS. But in the 2019 budget proposal, it was proposed to increase the operating budget of KMS by DKK 6.8 million for wages and raw materials.

Regardless the total food bought by all kitchens is approximately 10 000 T annually and at least 9000 T was organic food in 2015 (CC, 2016). Sometimes the kitchens have planned a menu and certain ingredients are not always available at the right time, for the kitchens that must publish their menus in advance for 3months this can prevent more of a challenge than those smaller kitchens who can adapt their menu from day to day (KBH07).

3.3.3 Why a culture conversion

The interviews point to a drastic shift in the way the kitchens produced public meals. The kitchen conversion equipped and incentivised cooks to change their kitchen practices, with regard to menu planning, ordering, using fresh ingredients and cooking from scratch, while reducing waste and optimising the operational processes of the kitchen. Staff were not only equipped and supported to change their practices, but for many their mindsets were shifted that led to them being motivated to cooking healthy delicious food. The conversion of mindsets and practices supported by a guiding framework of goals, incentives and constraints has led a successful conversion program that we see today in Copenhagen.

Implementing an organic *'ingredient conversion'* *'at no extra cost to the operational food budget'* would not be possible to simply substitute conventional ingredients for organic. Converting to organic ingredients would require finding savings to pay for the organic premiums. Savings were found by both reducing waste while also by eliminating ready-made foods such as bread, cakes, jams sauces, buying less meat, changing the type of meats that they cooked. Reducing waste would require understanding how to use all of the ingredients (prepping and cooking competencies) and efficient kitchen processes/practices (kitchen management) (Interviews with KBH05, KBH01, KBH08).

Eliminating ready-made foods, buying less meat and changing the types of meat would require a change in the composition of the meals (requiring a conversion of menu planning), it would also require municipal cooks to cook the food from scratch (prepping and cooking competencies). The practices of the kitchen staff and kitchen managers needed to be converted, this would require a change in the mindset of the various staff to build a culture of producing delicious, healthy organic food. To convert the culture TMF implemented a conversion method that first shifted mindsets, established an understanding of the specific challenges in the kitchen and raised the competencies through training and education. Furthermore, the staff was then supported by consultants to implement changes to kitchen processes, to analyse current menus and orders and identify opportunities to change ingredients and develop new menus. The conversion consultants considered every step of this process as essential for success.

The point is that you're [raising] the education level in the kitchen you train them to do food out of produce instead of something that's already been made for you by the fabrique (KBH08)

Essentially cooking more organic would force a change in practices, and a change in menus to using fresh ingredients and cooking from scratch. This generally led to not only a more organic meal but a meal that is likely to be healthier and tastier. But as KBH08 stressed, it was not enough to be organic, organic food could still be unhealthy and taste poor. So that is why the municipality commissioned KBH Madhus to develop and implement the Kitchen Promise guiding framework.

3.3.4 Guiding Framework

According to KBH01 *"when I succeed in my job is when the food is eaten by the citizen of Copenhagen. And there's no leftovers"*. This represents the sentiment behind this guiding framework, for the eaters of the public meals to be happy and healthy. While TMF Dogme Organic Office were guided by similar interests and had a similar holistic approach to strive for culinary quality, better nutrition and better meal culture it was KBH Madhus that was commissioned and funded by the municipality to develop a *"model that on a professional and uniform bases for assessing the quality of the public meals"* (KBH Madhus, 2008, p. 11). This model was used to guide the operation of kitchens and consequently the kitchen conversion to raise the quality of the meals (Sillasen & Egsgaard, 2006) Informant KBH08 expressed that KBH Madhus was able to sustain political and funding support for continuing the organic transition, because they could show results, and that they had a very clear way to measure the performance of the kitchens. That way was the Kitchen Lift evaluation based on the Kitchen Promise values, sub-goals and indicators presented

in KBH Madhus' report 'Kitchen Lift' (Køkkenløft) (KBH Madhus, 2008) where they also outline the implementation process for kitchen conversion, of which the guiding framework is a key tool. The process has also been called the 'Organic Lift' (ØkoLøft) (KBH Madhus, 2018b) that is very similar.

Guiding mission

None of the informants expressed and neither did the documentation reveal that the TMF Dogme Organic Office had a formalised guiding mission. However, Copenhagen House of Food developed a mission that expressed aspirations that applied to both itself and the public meal system, the exact details can be seen in Appendix D. These aspirations were used to develop a set of guiding values known as the 'Kitchen Promises'.

Holistic guiding values (Kitchen Promises/10 Principles/9 goals)

When the transition was started (see Section 3.2) the main motivation was to start a 'locomotive' to drive the conversion of the farmland where the municipality sources its water by getting municipal kitchens to buy organic. While not formalised, the following excerpt from the interim report on the nursing home pilot projects gives an indication of the guiding values:

"In general, [regarding] conversion, a kitchen must be considered as a whole, in order to have the greatest appropriateness in food composition, culinary quality and economy, - and thus the most possible ecology and quality for the money. The extra cost of the milk may have to be found on changed vegetable consumption, etc "
(Christensen & Hastrup, 2005)

The interview with KBH08 and document review of the report from the launch of the Kitchen Promise system reveal that, KBH Madhus argued strongly for a holistic approach for public meals and the public meal system to contribute towards achieving the high-level goals of healthy elderly, healthy eating habits for the next generation of Copenhageners and organic proportion (KBH Madhus, 2008). The thinking behind this can be seen with that nutrition is not achieved unless it reaches the stomach, which requires the food to be of high culinary quality, that it matches their needs and that the meal environment is respected. KBH08 explained:

"Meals were being served that technically were meeting the nutrition guidelines, but the meal has to be eaten before it can be considered nutrition. The food needs to be culinary correct before it is nutrition correct, no one gets an appetite for nutrition feed 'kost' – building block for life"

"We don't ask how was your 'kost,' we ask how was your meal"

The values were built on the insights from the previous TMF Dogme Organic projects that observed that working on particular goals would bring side benefits, that the conversion efforts would have self-reinforcing effects and that for many staff that converting to organic in itself was a motivator for self-development (Christensen & Hastrup, 2005). Converting to organic was in itself seen as a means to achieve support of stakeholders and kitchen staff for changing the culture and ultimately raising the culinary quality and nutrition to ultimately provide healthy food for the citizens and inspire healthy eating habits.

Indicators

At the beginning of the transition, the organic proportion of food (kg) was the primary indicator of success linked to the Dogme 2000 commitment and objective, but there were also the secondary indicators of success, including nutrition, culinary quality with side benefits of less sick days of employees and the satisfaction of employees that were a key motivating for SUF to continue supporting the conversion in the nursing homes especially. TMF's team would evaluate meal and food culture, but would place a strong emphasis on economics, finding savings to finance the ingredient conversion (Christensen & Hastrup,

2005). KBH08 explained how being able to show results was a key reason that the kitchen conversion program maintained both political support and funding:

“We can show that [the method] works and we can show, not only the percentage increasing... 88% of organic we lifted... But also because the employees are more happy. They have fewer day of sickness; they are proud of their work...”

The city council gave KBH Madhus the task of developing a set of indicators to evaluate the quality of public meals and the kitchens based on a set of values. By 2008, KBH Madhus introduced formal indicators to evaluate the Kitchen Promise values regarding the following categories: meal quality, raw material quality, meal environment and culture, nutritional quality, and finally job satisfaction and support of management. Figure 3 demonstrates how the performance indicators for the kitchens have evolved, with the Kitchen Promise indicators appearing on this figure in the 2011, with some additions and the anticipated additional indicators placed on the kitchens directly connected to the municipal objectives in the 2020 Food and Meals strategy (CC, 2020). It can be seen how as the goals and associated indicators for kitchens evolved, so did the demands on the wholesalers.

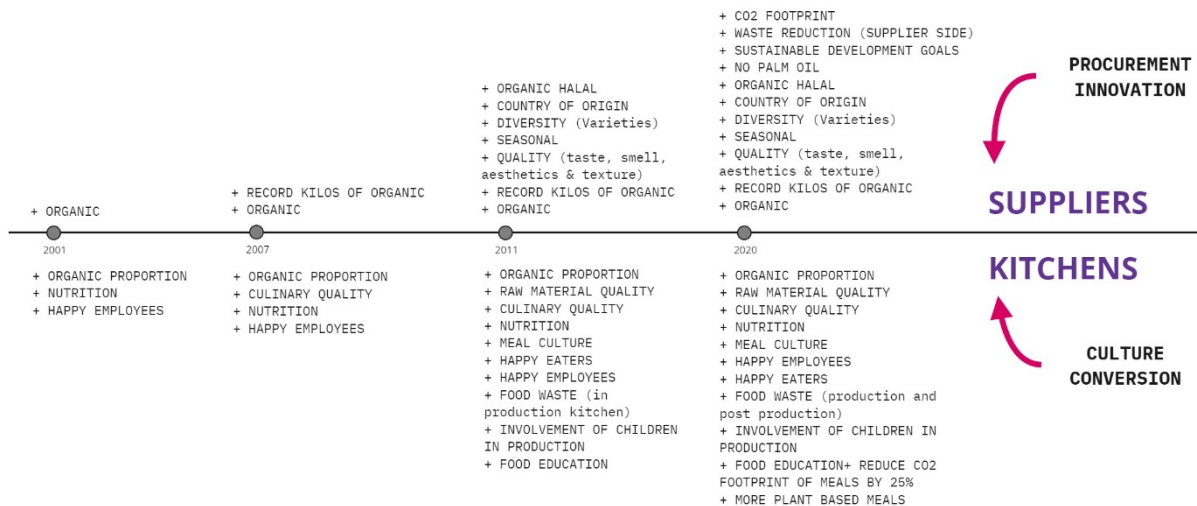


Figure 3: Goals for the kitchens and institutions to deliver over the period of transition and the corresponding change in demands from the wholesalers

The set of ‘Kitchen Promise’ guiding values were seen as self-reinforcing and also supporting the high-level goals by KBH Madhus. Declaring that a kitchen conversion program that was guided by the ‘Kitchen Promise’ values and measured using the indicators would see the kitchen conversion program deliver improvements in the following criteria:

- *“The culinary level in the Copenhagen institutions*
- *Professionalism and interdisciplinarity in connection with meals*
- *Respect for the meal by making its function visible in the institutions*
- *Job satisfaction and thus perhaps even help to reduce sick leave*
- *The organic percentage*
- *Management's prioritization of meals*
- *nutritional status of Copenhagen citizens*
- *and attract labor” (KBH Madhus, 2008, p. 20)*

These additional benefits were already observed in earlier kitchen conversion projects run by the TMF Dogme Organic Office (Christensen & Hastrup, 2005). The full list of the ‘Kitchen Promise’ indicators under each category can be seen in Appendix E. The indicators were developed in collaboration with

experts with regard to food, the meal and the organisation (KBH Madhus, 2008) which reflects the holistic approach KBH Madhus took to its responsibilities.

Since then they have built on the set of kitchen promise indicators an additional 2 main indicators, food infrastructure and involvement of the children. This expanded set of indicators was seen in KBH Madhus' report "Generation Food" (KBH Madhus, 2018) where they identified opportunities, challenges and made recommendations to achieve the objective of nurturing healthy eating habits in the children and youth, refer to Appendix E.

Evaluation tools

The organic proportion was evaluated using the 'Dogme method' up until the introduction of the state-run 'Organic Cuisine label' was introduced in 2009 (Interview with KBH05). Both methods calculate the proportion of organic food using the purchasing records, pre 2007 the kitchens had to use a combination of records, weighting and estimating (Sørensen et al., 2015). From 2007 City of Copenhagen required food wholesalers to record and report the kilograms for purchases since 2007 with its procurement agreement. KBH05 reflected:

"If you want to deliver to Copenhagen, we want you to be able to measure how much organic you give them. Yeah, that's it. Yeah. And that is what is the reason why today we have the bronze and the silver and because if we hadn't started asking them they would have never done it."

From 2009 the organic proportion was certified by the Organic Cuisine Label. The Danish Veterinary and Food Administration (DVFA) has been responsible for audit kitchens purchasing records every 3 months. This is integrated into their regular inspections to monitor compliance to food safety and health regulations is to and check their purchasing records to verify organic proportion (Daugbjerg, 2020). The Organic Cuisine Label has 3 categories corresponding to the proportion of organic ingredients in mass, Gold (90- 100% organic), in Silver (60-90% organic) and in Bronze (30-60% organic) (Organic Denmark, 2020).

The Kitchen Promise Indicators developed by KBH Madhus were assessed using a combination of self-assessment questionnaires filled out by users, staff and the judging panel. The judging panel would be comprised of 1 judge from KBH Madhus and 1 external judge to evaluate the meal and the kitchen. This combination of using an internal and external judge was for the purpose of increasing the legitimacy and trust in the evaluation process (KBH Madhus, 2008). Kitchens would be notified of an upcoming visit by the judging panel with 3 days of notice to ensure sufficient communication with the institution, while being short enough to prevent staff from making significant changes to the meal quality and skew the results of the evaluation (ibid.). The results from the questionnaires and the judging panel evaluation would be aggregated and the kitchen would be scored according to the various indicators.

The informants did not mention anything specifically about the tools used for measuring indicators during the TMF Dogme phase of the kitchen conversion transition. The interim report on the nursing home pilot projects merely mentioned that the consultants would "through extensive 'measuring-weighing work' provide an analysis of the current food and meal culture, the nutrition and the economy in the kitchen and individual [institution]..." (Christensen & Hastrup, 2005)

3.3.5 Implementation process

The various conversion agencies have taken similar approaches to implementing kitchen conversions but it has not changed significantly since the TMF implemented it in 2001-2008. It was reported that this process combined with the guiding framework has been a key contributor to the success of transition.

Firstly conversion consultants would engage institutions and attempt to motivate them to sign up their kitchens, the conversion agents would work to (1) align all the relevant actors towards **a common goal**

(2) develop an assessment of the current situation, **mapping and analysing** data on purchasing, financials, cooking skills to identify key challenges and opportunities for improvement. Where should/could the kitchen buy more organic, assistance with developing menus for seasonal and diverse ingredients was another essential role. A key component was (3) raising the competence level both in culinary and management skills through the delivery of **training and education**. This was supported by local visits by consultants for (4) **in-kitchen consulting** to see how the recommendations are being implemented, how is the production culture, re-evaluating the kitchen culinary quality and giving direct feedback. They also incorporated (5) instilling confidence and pride in the chefs through **recognition and reward**. To support the whole process of conversion they would also communicate and inspire the various institutions through events and media (Christensen & Hastrup, 2005; KBH Madhus, 2008; KBH Madhus, 2018b).

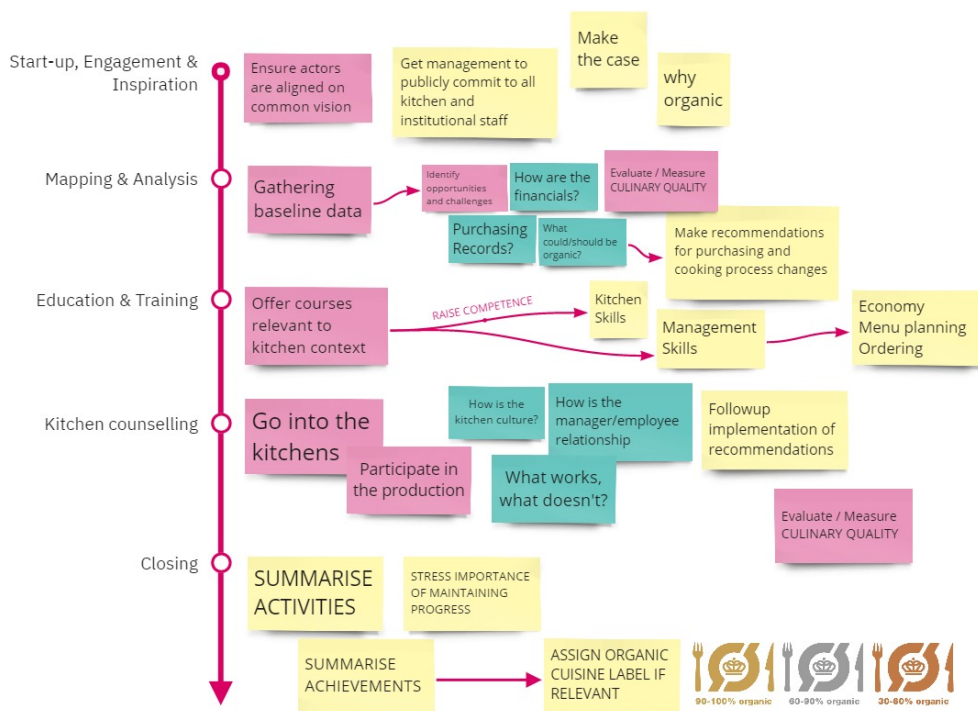


Figure 4: A visual representation of the implementation process for converting a kitchen

Communicate, align and establish commitment of all stakeholders

Having persuaded an institution to participation the institution would formally register their kitchen for the kitchen conversion program. The conversion consultants would the process of a kitchen conversion by ensure that they have the commitment of the institution management, that this was declared and it was communicated to all staff that they were committed to and aligned on the conversion approach (Christensen & Hastrup, 2005; KBH Madhus, 2008).

Two very important things you have to have your boss have to agree and push. If you have a boss that don't care or is negative, don't bother because you can't do it. You can't make it a pilot project. (KBH05)

"If I was a kitchen lady in one of these kitchens and if I my boss said I have to do something, I did it"

“For the kitchen, the backing of management is crucial, just as it is important that caregivers understand that they are ambassadors for the kitchen's food to users and relatives” (Christensen & Hastrup, 2005, p. 6)

KBH Madhus formalised this stage of the process by requesting that the institution management identify a representative from each of the ‘staff groups in the institution, but this was also to Dogme’s practice of encouraging the formation of local ‘project groups’ where management, kitchen staff and other institutional staff representatives could discuss and coordinate (Christensen & Hastrup, 2005). Following the identification of a project group of representatives, a start-up meeting would be held to give an overview of the upcoming reorganisation challenges and change processes (KBH Madhus, 2008). It is also at this stage that the conversion consultants would work on shifting mindsets from seeing kitchens producing feed to producing food, emphasising why organic, why the guiding framework around culinary quality, and how all the staff could benefit from the conversion from such a culture change, refer to section 3.1 for more details.

Establish current situation baselining and evaluation

Following securing the commitment of stakeholders and management, both TMF and KBH Madhus would engage in a baseline analysis of the kitchen. TMF would utilise send conversion consultants for a period of 10 days to determine the proportion of the meals that were consumed, by comparing food consumed against what was served and the waste in the kitchen and in the institution, followed by evaluating all purchases of food and drinks for the past 6 months. A report was then prepared to identify potential changes in ordering (Christensen & Hastrup, 2005).

KBH Madhus had a more formalised approach to baseline analysis, by conducting surveys of the eaters, kitchen staff, institutional staff and management. A panel of judges would visit the kitchen to inspect the fridges, freezer, kitchen and storage and evaluate culinary quality and the meal environment according to the Kitchen Promise indicators. The results from the questionnaires and judge evaluation would then be aggregated and the kitchen would be given a score for each of the kitchen promise categories (KBH Madhus, 2008). KBH Madhus express for their ‘Organic Lift’ projects that they conduct this baseline analysis over a period of time.

Following the baseline analysis, both TMF Dogme Organic Office, and KBH Madhus would prepare a report with challenges and opportunities for making changes. TMF would focus on identifying purchasing changes in their report (Christensen & Hastrup, 2005), whereas KBH Madhus would give more detailed instructions regarding purchasing, kitchen processes as well as recommending a starting point for planning and education (KBH Madhus, 2008).

“The institution is assessed / rated based on the rating model and receives the results in the form of a report incl. a numerical assessment. The result can both be used by the individual institution and as a tool that shows the municipality and politicians how it is with the public meals”

Develop an action plan

Both conversion agencies would follow the baseline analysis with the development of an action plan in participation with the relevant stakeholders. The TMF Dogme Organic Office did that by conducting a ‘course for kitchen management’ that combined teaching of theoretical knowledge on organics and reviewing the results of baseline analysis report to co-develop an action plan for kitchen conversion. It was a run as an interactive course conducted by conversion consultants over a 10 day period divided into 1 and 3 day blocks. The action plan would determine what areas to address and how to address. The tools

they used were educational courses to equip kitchen and institutional staff as well as ‘in kitchen’ conversion consulting (Christensen & Hastrup, 2005)

The two categories of courses were offered:

“Introductory courses: For kitchen managers and for nursing and kitchen staff. The courses introduced organic principles in general and organic food in particular. The content focused on “why ecology?” and what [the kitchen conversion] would mean for the whole institution. In addition, visits to organic were included to manufacturers. The courses were of 3 days duration, however, only 2 days for managers.

Practical kitchen courses: For both skilled and unskilled kitchen staff. The purpose was to introduce organic ingredients and try a wide variety of organic dishes. The courses were divided into topics according to raw material groups, e.g. open sandwiches, soups and sauces, vegetables, baked goods, etc. Total 17 courses of 1-3 days duration”
(Christensen & Hastrup, 2005, p. 4)

The report was also used as a starting point by KBH Madhus to collaboratively develop a ‘development plan’ between KBH Madhus and the institution. This ‘development plan’ would identify relevant education and courses for specific employees as well as what areas require ‘in kitchen’ conversion consulting. The courses “were launched as a collaboration between Københavns Madhus and the Hotel and Restaurant School [of Copenhagen] (HRS) and will be under the auspices of AMU” (KBH Madhus, 2008). AMU courses are vocational courses approved for funding with subsidies by the Danish government. Since the Organic Action Plan 2020 launched a nationwide public kitchen conversion drive, the courses developed between KBH Madhus and HRS for kitchen conversion have now been standardised across the country (MVFM, 2012).

An external academic report ‘Project Basiskost’ that evaluated the TMF Dogme pilot projects, stressed how important it was to assign clear roles and responsibilities to ensure accountability and follow-up of tasks (Jensen & Mikkelsen, 2006). KBH Madhus went one step further stressing clear roles and responsibilities for management, institution staff and kitchen staff in its 5th Kitchen Promise – ‘Responsibility and job satisfaction’, and assessed kitchens based on their performance in this area.

Implement action plan

Typically, KBH Madhus would implement a 2-year program for registered institutions which would include the following deliverables, a mix of relevant courses and consulting:

- *Annual rating: self-rating, judges, and report*
- *Annual restructuring plan*
- *4-6 week annual kitchen courses*
- *week annual meal courses for “hosts”*
- *Annual management seminars / courses*
- *15-20 hours of annual counselling*
- *Manual*
- *Online consulting and knowledge*

Recognition (Praising not shaming)

A key part of the reinforcing the conversion is the provision of incentives for meeting the objectives with regard to culinary quality, meal culture, organic proportion etc and both TMF and KBH Madhus integrated recognition into their kitchen conversion program. KBH formalised the process for recognition which was enabled by their guiding framework Kitchen Promise indicators. Kitchens were evaluated at the start of the process to establish a baseline, and consequently they could apply for another evaluation. If they made scored well in all criteria they would receive a ‘Kitchen Promise’ Diploma. For kitchens that had

made significant progress in one of the Kitchen Promise indicator categories, they would be awarded a kitchen promise category diploma (KBH Madhus, 2008). This award was to provide incentive for all the relevant stakeholders in the institution and to raise the status of kitchen staff. These awards were given out at an annual award ceremony and party that became known as Diplomfest, which was held at the Copenhagen City Hall, where the Lord Mayor was often the host, demonstrating the political commitment from the highest levels to the kitchen conversion program (KBH Madhus, 2011). As a participant observer I participated as an audience member

3.3.6 Proving the model through pilot projects

According to KBH05 the 4 Dogme Organic pilot projects proved that the conversion approach developed by Agger could be used to achieve the 75% organic food at no extra cost to the food budget. Following the conclusion of the pilot projects the various administrations in the City of Copenhagen embraced the Dogme Organic kitchen conversion program.

"...we could show them [SUF] that there was plenty of money for buying organic if you would give them the right food and you would stop the food waste..

Well the interesting thing about the report about it was that we got that Administration interested in one particular thing in the report which said that the people working in the kitchens and in the elderly homes, were very happy with the organic food. That made sense.

And then they said, Okay, if our employees like what you're doing, which was getting back to cooking normally and not just taking the scissors and cutting a bag and putting some frozen things, if our employees are happy, then go for it.

And then we could change the rest of them. The rest is history actually."

KBH05 talked about how decision makers in SUF were extremely supportive of continuing the kitchen conversion. This was correlated by a TMF report "Results of 'Dogme Organic the project for nursing homes in Copenhagen Municipality year 2004-2005' (pilot project)" (Christensen & Hastrup, 2005). Not only could they achieve organic conversion at no extra cost to the food budget, but:

"All pilot projects under Dogme have shown that the participating institutions get a number of side benefits as a result of the change process that the ecological conversion creates. It does not just affect the kitchen employees and the choice of supplier" (Christensen & Hastrup, 2005, p. 12)

These 'side benefits' included increased cooperation and communication within institutions, improved job satisfaction, knowledge sharing and continuous improvement between institutions and kitchens through network forums, increased focus on meal culture (Christensen & Hastrup, 2005; Jensen & Mikkelsen, 2006). The beneficial outcomes are supporting the achievement of other objectives, as evidenced by this excerpt.

"the greater interdisciplinary collaboration has helped it ecological restructuring on the way, it has also increased awareness generally on food and meals in relation to the residents" (Christensen & Hastrup, 2005, p. 3)

"the contagious nutritional benefits that seem to be associated with ecological benefits are being investigated further" (Mikkelsen, 2006, p. 41)

Piloting the conversion approach in different kitchen contexts was a low risk way of proving that the conversion approach, could deliver the intended objective while generating additional benefits. The pilot projects also provided insights around how culinary quality, nutrition and meal culture could be addressed with the process used for organic conversion, allowing for further refinement of the conversion

method. The results from the pilot projects also gave the necessary ‘ammunition’ for politicians to continue to support and fund a full-scale transition.

3.4 Sustained political and funding commitment for kitchen conversion

Interviews and documentation reviewed regarding the political and funding commitment revealed that political commitment and funding for kitchen conversion program was sustained despite evolving political motivation (see section 3.2 for more details).

The Social Democrat party has held the Lord Mayorship and the corresponding political influence it entails since Copenhagen’s first mayor was appointed in 1938. According to Informant KBH10, despite the power struggles and disputes over the budget the commitment to the organic conversion “.. it’s been an unbroken sort of ambition...” KBH05 also describes how it was the fact that they had a political decision, and commitment to a percentage, and eventually a date which came in 2005. Both KBH10 and KBH05 describe how crucial the political commitment was for the initiation and throughout the project.

TMF Dogme Ecology Project 2001-2008

TMF’s Dogme Organic Office that executed Copenhagen’s kitchen conversion was funded by DKK 2 million annually from 2001-2004 to directly for the conversion consulting to all of CC’s public kitchens with a DKK 2 million lump sum allocated for coordination and auditing of the whole Dogme 2000 project from 2001-2004 (Jensen & Mikkelsen, 2006). The Dogme Organic Project was awarded an additional 5 million annually from 2007-2009 to continue the work of converting the kitchens (CC, 2007).

BUF’s KØSS 2000-2007

BUF received a budget of DKK 30 million spread over 4 years comprised of DKK 10million of municipal financing and DKK 20 million of external funding. After 2004 the “operating subsidy lapses and the schemes at the individual schools must be self-financing” (CC, 2002), to both implement

KBH Madhus raising culinary quality and developing new school food concept 2007-2008

Copenhagen House of Food was announced in 2006 and setup in 2007 with the mandate to raise the culinary quality of the food and establish a school food program successor to the KØSS initiative. The municipality awarded 4 million for setup costs, and an annual budget of DKK 6.3 million to address culinary quality.

In order to establish Copenhagen's Madhus, the parties have agreed to set aside...6.3 mill. DKK annually on the operating side in the period 2008-2009 for the implementation of initiatives which implement the [City Council's] decision of 20 June 2006 on the establishment of a food house in Copenhagen (CC, 2007, p. 20).

KBH Madhus assigned responsibility for implementing public meal initiatives and organic conversion 2009-2010

With the 2009 budget, KBH were given assigned the responsibility for managing organic transition component of the kitchen conversion program, this was combined with its existing mandate to consult with the kitchens to raise the culinary quality. So, by 2009, KBH Madhus were assigned responsibility for the kitchen conversion program for all kitchens, to drive a transition to deliver multiple municipal objectives. “With the adoption of the 2009 budget, the Citizens' Representation decided to hand over the ecology task to Copenhagen House of Food” (CC, 2009b, p. 2). They received an annual DKK 4.76million for managing the kitchen conversion program to both deliver an organic and culinary transition and an additional DKK 1.2 million annually for special development initiatives for SUF’s central kitchens (CC, 2009b).

With the 2010 Budget additional annual operating grants of were committed, for further development and implementation of the EAT School Food program (DKK 3.8 million), and for ongoing organic transition (DKK 4.9million) both of which would be supported by the implementation of the Kitchen Promise indicator system, which was allocated a one off DKK 2.1 million grant (CC, 2009a)

Unfortunately due to the financial crisis started in 2008, in 2010 the 2011 Budget agreement announced cuts to the operating budget of KBH Madhus, which was 10.5 million in 2010, and would scale down to 9.2 million in 2011, and DKK 8.2 million from 2012 onwards.

KBH Madhus and the Organic Action Plan 2020 (2012-2014)

2011 signified another major shift, KBH Madhus was successfully lobbied together with Organic Denmark for the Social Democrats to establish a nationwide kitchen conversion program. They became a key partner in developing and implementing the Organic Action Plan 2020. The payment scheme required municipalities to partner with external conversion consultant agencies, and consequently Copenhagen House of Food separated from the municipality to become an independent organisation. This allowed it to receive state funds, and act as conversion consultants for multiple municipalities. According to KBH08, KBH10, the separation of Copenhagen House of Food from the municipality was necessary for it to be able to participate in implementing the nationwide kitchen conversion program and transition numerous kitchens across the country. Consequently KBH Madhus received DKK 28.9 million in funds over 2.5 years for transitioning the kitchens of other municipalities, but also the KMS central kitchen in Copenhagen and another 18 kitchens in BUF's educational institutions (KBH Madhus, 2013)

3.5 National policy inspired by Copenhagen's transition

The Organic Action Plan 2020 was an ambitious organic policy that applied instruments to both stimulate demand and boost supply. The kitchen conversion program of Copenhagen's public kitchens inspired the key policy instrument for stimulating demand. The program also directly benefited from the subsidies of policy instrument to fund more kitchen conversions in Copenhagen, as well as indirectly benefiting from the other national policy instruments to boost the supply and offerings of organic food.

At a national level, the Social Democrats commissioned the collaborative development of innovative organic policy both during the Social Democratic cabinets led by Prime Minister Poul Nyrup Rasmussen (1994-2001) and again with the Social Democratic led cabinets of 2011-2015. Consequently Denmark is the biggest consumer of organic food in Europe (Daugbjerg, 2020). The Social Democratic governments have consistently engaged with various interest groups interested in developing the organic sector. These interest groups were organised into the Organic Farming Council which evolved to become a 'major forum' for policy development. They were instrumental in the development of the *Organic Action Plan* (1995) – for the promotion of organic food production in Denmark and *Organic Action Plan II* (1999) for growing organic, use of organic food in professional kitchens and for promotion of organic exports (Daugbjerg, 2020). The Organic Action Plan 2020 was another example of collaborative policy development and KBH Madhus was a key partner in the design of the kitchen conversion program, the key policy instrument for driving demand for organic, that would both support and be supported by the other policy instruments boosting production and supply.

3.5.1 Leadup to the 'push' and 'pull' Organic Action Plan

Copenhagen had successfully prototyped and refined a kitchen conversion approach and program that enabled full scale organic transition at no extra cost to the food budget that was largely supported at all levels of the municipality throughout the 15 years of the transition. They experimented and demonstrated the approach successfully for all sizes of kitchens in all types of institutions (KBH05, KH08)

for the entire municipal food system. According to Daugbjerg (2020), Copenhagen's "experiments did not go unnoticed" (p. 15) and became a foundation for a proposed national kitchen conversion program that would form a key component of the Social Democrats election campaign. KBH10 both mentioned how the incoming Minister for Food, Agriculture and Fisheries (MVFM) had a close working relationship with KBH Madhus' Anne-Birgitte Agger and Organic Denmark's Paul Holmbeck. Consequently, the minister was "...very tuned into the whole issue of using the organic conversion as a sort of tool for quality improvement in the public kitchens in general" (KBH10).

The Social Democrats then attempted to launch the kitchen conversion program as the key component in their policy in 2011 that would both boost supply ('push') and stimulate demand ('pull'). The previous state government's ambition for doubling of the area being farmed organically would be supported by a significant rise in baseline demand that would be delivered by a mandate that every municipal, regional and state public kitchens had to reach 60% organic food (Daugbjerg, 2020). However, the demand for a mandatory conversion faced significant resistance (KBH01, KBH05). Finally, the Ministry of Finance sunk the mandatory kitchen conversion program as explained by Daugbjerg (2020):

Making the participation mandatory was strongly opposed by the Ministry of Finance as it feared that local and regional governments would use such a requirement to demand that the state compensated them for any extra expenditure associated with participation in conversion projects (Daugbjerg, 2020, p. 16).

3.5.2 The Organic Action Plan's kitchen conversion program and supporting measures

The resistance led to the kitchen conversion program component of the policy being redesigned to be an opt-in rather than mandatory program. The connection between the MVFM minister, KBH Madhus, Organic Denmark combined with their experience developing, refining and implementing Copenhagen's kitchen conversion program, saw them take roles as 'core partners' in designing the program, whose joint proposal directly inspired the voluntary kitchen conversion program that was the key component in the relaunched in the push/pull Organic Action Plan 2020 policy in 2012 (Daugbjerg, 2020).

"In October 2011, the Copenhagen House of Food and Organic Denmark put forward a joint proposal for organic conversion of kitchens in the public sector which influenced the design of the government conversion programme"

"The DVFA recognised the two organisations' expertise in kitchen conversion and considered the proposal a realistic policy model to meet the Minister's original aim that 60 percent of the food served in public institutions should be organic by 2020" (Daugbjerg, 2020)

"While the range of partners listed in the project plan was expanded from the initial to the final version, the core partner remained Organic Denmark. It was involved in eight of nine tasks specified in the project plan. The Copenhagen House of Food was involved with specific expertise in three of the tasks and with involvement in seven tasks" (Daugbjerg, 2020)

The kitchen conversion program would apply to public kitchens in municipal, regional and state institutions and be supported through various measures and financed with a pool of subsidies worth DKK 28 million/yr. from 2012-2014 (Daugbjerg, 2020).

"The government will: Make funds and tools available for a changeover of public kitchens, and where state, regions and municipalities in project cooperation in turn commit to work for and prioritize the use of the tools for a conversion of their public kitchens to minimum 60 pct. ecology." (MVFM, 2012, p. 12)

Supply side push measures and supporting subsidies included: stimulating organic farm conversion (DKK 16 million/yr.), stimulating creation of new products by processors (DKK 10 million/yr.) and promotion of Danish organic exports (DKK 10 million/yr.).

3.5.3 Copenhagen House of Food's role in the implementation of the Organic Action Plan

The Copenhagen House of Food became a selected partner on the working group together with Organic Denmark for developing the materials on best practice tools, methods, processes and models, that would be used as a resource kit to guide other municipality-conversion consultant partnerships to convert their kitchens.

The DVFA, Organic Denmark and the Copenhagen House of Food were the main providers of such information (Daugbjerg, 2020, p. 14).

They would review 5 leading municipalities to determine best practice, of which Copenhagen was the main case for inspiration and prepare the groundwork for the launch of the kitchen conversion program. The insights generated and documented by the working group would be utilised to establish a national training program and kick off an activation roadshow targeting decision makers and kitchen staff. Motivation tactics utilised for motivating Copenhagen's institutions to participate became crucial knowledge.

Municipalities and regions had to make partnerships with external conversion consultancies. Kitchens had to achieve the 60-90% silver mark DVFA Organic Cuisine Label before being able to apply for subsidies. This was a measure to ensure that state subsidies actually went towards achieving the objective. This required partnerships that could finance the transition before being reimbursed through state subsidies so this saw "Organic Denmark and the Agriculture and Food Council became the main contractors often in collaboration with the Copenhagen House of Food" and other conversion consultants such as 'Øko ++' to be eligible for state subsidies. (Daugbjerg, 2020).

Daugbjerg, described the kitchen conversion program component of the Organic Action Plan 2020 as essentially "the scaling up of local kitchen conversion initiatives mainly in the Municipality of Copenhagen to the national level" (Daugbjerg, 2020, p. 14). That gives an idea of the significance of the organic and culinary transition that occurred in Copenhagen.

3.6 Sourcing the Ingredients - Procurement Innovation

From interviews with KBH01, KBH08 and KBH10 Copenhagen's innovation of its procurement agreement and active engagement with wholesalers was crucial to both scale up the supply, create new markets and push suppliers to deliver the desires of the kitchens. It was possible to use the procurement agreement as a leveraging tool, due to the sheer purchasing power of Copenhagen's municipal food system. The procurement officer (PO) responsible for writing the procurement agreement and engaging with the wholesalers was also placed within the municipal food system in an ideal position. This allowed to have their mindset influenced and understand how the procurement agreement could be a lever for change.

While the original motivation was to preference farmland in Zealand, there were a number of barriers that made it very difficult to preference organic food from that region both with regard to tender rules from the European Union and structural issues with regard to inadequate supply chain infrastructure.

The primary procurement innovation was through adjusting the scoring criteria to incentivise quality and diverse offerings of food and enforcing various criteria such as seasonality and organic halal in the technical specifications. The raw material quality evaluation was another procurement innovation that was developed with a transparent process to help meet the needs of the kitchens and also send a signal to suppliers that taste, smell, texture, and aesthetics do matter. There are also number of quality control measures (rules) that ensure that suppliers will comply with the procurement agreement. The tendering process is another procurement innovation that informants believe enables a constructive communication between wholesalers and the PO on how to write the procurement agreement to enable them to deliver the needs and desires of the kitchens.

3.6.1 The procurement agreement

The City of Copenhagen's procurement agreement governs the services and product specifications that the supplier has to meet and hence what is available for purchase by public kitchens. However kitchens are still free to purchase what they like, as KBH10 and KBH01 stressed, the procurement agreement does not guarantee that the kitchens purchase organic, it merely defines what is available for purchase and the terms of service. As one informant reflects, *"there's a big difference between the tender contract in the drawers that you have, to what's actually happening in reality"*.

As such, it has been crucial that the procurement officer and conversion consultants cooperate and translate the needs of the kitchens while at the same time actively engage with the market to develop a procurement tender that reflects the needs of the kitchens. It was also found essential that the conversion consultants work with the kitchens in developing menus, and hence their purchases, so that the wholesaler receives consistent and significant enough demand signals to confidently do what it takes to scale up their supply (KBH08 and KBH01).

3.6.2 The status of food supply in the early years of the transition

When the municipality first started demanding organic back in 2000, the organic market was rather underdeveloped and it was more oriented towards delivering to the private consumer market, not the private and public professional kitchens of the food service sector (Interview with KBH10). So according to KBH10 back in 2003, you would have basics available such as flour, milk, grains and some vegetables, but there was minimal if any organic meats, specialised or fragile vegetables and if you could get it, it was frozen. According to KBH01, when the organic conversion started, kitchens first made funds available through waste reduction and changing the meal composition, they went 100% for those organic products that was already available, such as the flour, milk, potatoes, cabbage etc. KBH05 reflects that in the early years of the conversion, kitchens would first target the lowest DKK/kg products as this raised the %

organic for the lowest cost. This is also confirmed by the internal report by TMF on the Dogme pilot projects (Aaberg, 2006).

3.6.3 Scaling up supply and creating markets through active engagement with wholesalers

Still according to interview with informants and various documentation specific to the case, there were various areas where there were gaps in what the wholesaler were able to supply, such as their being no organic halal meat. so the procurement officer in collaboration with conversion consultants used active and continuous engagement with the wholesalers, which KBH01 and KBH10 called market dialogue. The market dialogues were about giving wholesalers forewarning about the demands from upcoming initiatives such as raising the organic consumption in Nursing Homes, which use a lot of meat. Instead of just suddenly surprising the wholesalers with a tender specification demanding organic meat, let them know ahead of time so they have time to make contacts and understand how to source when the time comes to put in an offer.

“But back then it was we still had all the elderly homes there, were still around 20 to 30%. There. We just told them all about this. We said these, they're going to come real fast. The organic meat it's going to become an issue within the next couple of years”

Later on, there was also a desire for sourcing organic halal slaughtered meat, due to the diverse background of citizens consuming public meals. When the municipality first engaged the supplier they got a response:

“That doesn't exist. That's not going to happen. It's not do-able”

They had organic meat, they had halal meat, but they did not have organic halal slaughtered meat. But if the municipality wanted to reach 90% organic KBH01 asserts - *“we actually had to build that market”* so the procurement officer would say:

“Okay, listen, if I have to reach 90% organic, I have to have this meat... I will put it into my tender, I will not make it as a minimum criterion. But I will give you extra points [in the awarding criteria]”

“So, I met them half a year later to something similar to that – So how about that organic halal slaughtered meat”

To which the supplier responded

“No problem at all, of course”

According to KBH01 and KBH10 the municipality has been crucial for pushing the creation of new markets, whether it is pushing the boundaries on organic halal, what sustainable fish is or pushing for a much greater range of apples than just pink lady and granny smith's.

3.6.4 The role of the procurement officer and where they are within the public meal system

According to my interviews, the procurement officer was interested to use the procurement agreement as a lever for pulling the wholesalers due to several factors. These factors include their position within the municipal organisational structure and the fact that the conversion consultants pushed them to see how the procurement agreement could be a lever for change.

The procurement officer (PO) resides within the Children and Youth Administration (BUF), which make up 60% of the municipal food purchases. Copenhagen's PO is able to focus solely on the procurement of food and is close to those delivering services and the impact of the procurement agreement on those people and that service delivery. This was clearly a unique characteristic for a PO to be within an administration

that is responsible for service delivery. Typically, POs are based in the Finance Administration and “...are often not responsible for service delivery” (KBH08) resulting in them being distant from those being impacted by their procurement agreement. They are also responsible for buying a lot more than just food as KBH08 expressed:

“They have to buy everything, if they are not a ‘foodie’ it is very difficult to convince them to spend time on it... food is the most annoying part” (KBH08)

When it comes to typical POs being able to respond to the needs and desires of the kitchens “the information flow has a hard time reaching the procurement officers desk, when there are good ideas on how to do things differently” (Interview with KBH01).

This is especially true for smaller municipalities that cannot afford to have a PO dedicated to look into how to turn their procurement agreement into a lever for driving sustainability. They are also typically based in the Finance administration, resulting in them having a mindset and goals that are “focused on saving money” (KBH08). This is very different to the mindset and goals being cultivated by the conversion consultants as an informant from Copenhagen House of food expressed “we see food as an investment in something else,” not just as a line item on a spreadsheet. It is clear from reviewing their strategic documents and reports that they are driven to take an interdisciplinary approach to achieve synergies in the public food system, using food and the joy of food to educate and facilitate healthy habits, and socialising. In referring to CC’s PO, KBH08 mentions that they are “so committed to it, its [their] case now... there are probably 5-6 procurement officers in Denmark where we could say the same”.

Informants expressed how unless POs have exposure to someone who can shift their mindset it is unlikely they will see the procurement agreement as a lever for change. This was explained by KBH01, “[POs] tend to be a bit square, looking at the cool facts... what is a simple good contract, how to write it so nobody will find any faults” and unless POs meet someone who can open their eyes “saying you can do more, you can actually use your contract as a lever for change” they are likely to just “do business as usual.”

So the fact that CC was able to have a dedicated PO for food, that sits close to the kitchens, working closely with innovative conversion consultants has assisted in CC pushing the wholesalers to change, while supporting the kitchens to deliver their goals.

3.6.5 The power of the municipal food system to influence the food supply

According to informants the contract with CC for the supply of food to its kitchens is a big deal for wholesalers. The municipality’s scale, consistency, and communication of its demand has driven the wholesalers to evolve the supply of new organic products while also bringing down the prices. While private professional kitchens make up the majority of the food service sector (72% in Denmark – Grass to Guest report). The scale and consistency of demand empower the procurement innovation to incentivise wholesalers to figure out how to source products, to make the connections with upstream suppliers and develop the pathways to offer it in their bid to the municipality.

According to KBH01 and KBH10 CC can and has stimulated the creation of new markets that can then benefit the rest of the food service sector and broader private consumer market. Public kitchens represent a significant baseline demand for wholesalers such that they can supply the market at economies of scale, so now if a cafe wants to buy something organic it is easier and cheaper. CC was the main pioneer before the national scale up of demand for organic from public kitchens with the Organic Action Plan 2020. It was used as a showcase municipality, and Copenhagen House of Food, the conversion consultants from 2009-2016 developed their models through their work with the City of Copenhagen’s public meal system. While CC’s procurement has not been the only influence on stimulating a greater range and quantity of organic products that has brought the price down, KBH01, KBH10 and KBH08

provided numerous examples of where CC's procurement agreement has pushed the food wholesalers and pioneered the creation of new markets. The other influences on stimulating supply and stimulating demand have been driven by the national government through national policy and various other actors such as Organic Denmark have been actively stimulating both greater supply and greater demand/consumption (Daugbjerg, 2020).

3.6.6 Connection between the kitchen conversion and sourcing the food

The procurement agreement has never preferred directly buying organic from the regions where Copenhagen sources its drinking water supply, nor can it specify certain SMEs to purchase from. KBH08 and KBH01 explain that preferencing the regions was not possible with location criteria, due to EU rules,

"You can't make those promises as a municipality. Because of EU Regulations" (KBH08)

"So that's really important point to notice is that if you say we want to buy local, because we want to support our local economy, then the [EU] commission will say no, that's not legal" (KBH01)

But also, they express that potentially it is not necessarily the best way to efficiently support existing organic farms and drive conversion of conventional farms to organic

"you have the rules within the EU for a reason. So it's like it's because we have the inner market and it's and that's something that we have to respect But I'm not sure that sustainability wise it'd be such a huge improvement if all our vegetables were just like one kilometre down the road. I'm not sure that I mean, there was too I'm afraid sometimes it becomes too romantic. intuitionistic and also bordering on some protectionism...."

Rome, for instance, they had issues where they were defining sort of 25 kilometres. Yeah, sort of, like there was one strawberry producer within that and he raises prices. to the roof... and maybe my cousin is a producer so I extend the radius to 30 kilometres" (KBH10)

"respect the market...."

KBH01, KBH08 and KBH10 all expressed other ways to facilitate the wholesaler to source more directly from producers while not contravening EU rules by specifying: a 'Freshness' criteria that would require delivery within a short time span since harvesting, such as 24hr. It would also be possible to preference certain farms/regions by requesting specific varieties of foods that are only grown by those farms/regions.

But according to informants KBH08 and KBH01 tender criteria is not the only barrier preventing shorter supply chains from being incentivised to supply the public kitchens but the SMEs are outcompeted on price, service, convenience. The wholesalers offer daily deliveries (convenience) which the public kitchens are used to and they offer documentation for monitoring and measuring compliance to municipal goals (service). The reality is the SMEs do not have access to supply chain infrastructure nor are they coordinated to collectively utilise such a supply-chain infrastructure to collect, bundle the volumes, aggregate orders from the various farm products and distribute those mixed orders. So, uncoordinated and without access to a collective supply-chain infrastructure SMEs cannot compete on price, service and convenience. SMEs cannot consistently deliver daily, the large quantities and diversity desired by large customers at an affordable price (Boncheva & Gichinga, 2020, p. 117, 124-125).

3.6.7 Technical specifications and scoring criteria

As the goals for the kitchens have changed, so have the goals for the supply of food. The procurement specification has had to adjust accordingly, including the mandatory service and product technical specifications and the incentivising scoring criteria for awarding the contract. The procurement officer has used a combination of mandatory constraints and incentivising scoring criteria to push the suppliers to deliver what is needed for the kitchens and institutions to deliver their goals. For the kitchens to meet their goals the procurement agreement needed to push the wholesalers to support the delivery of those goals and consequently the demands on the wholesalers has evolved, see Figure 6.

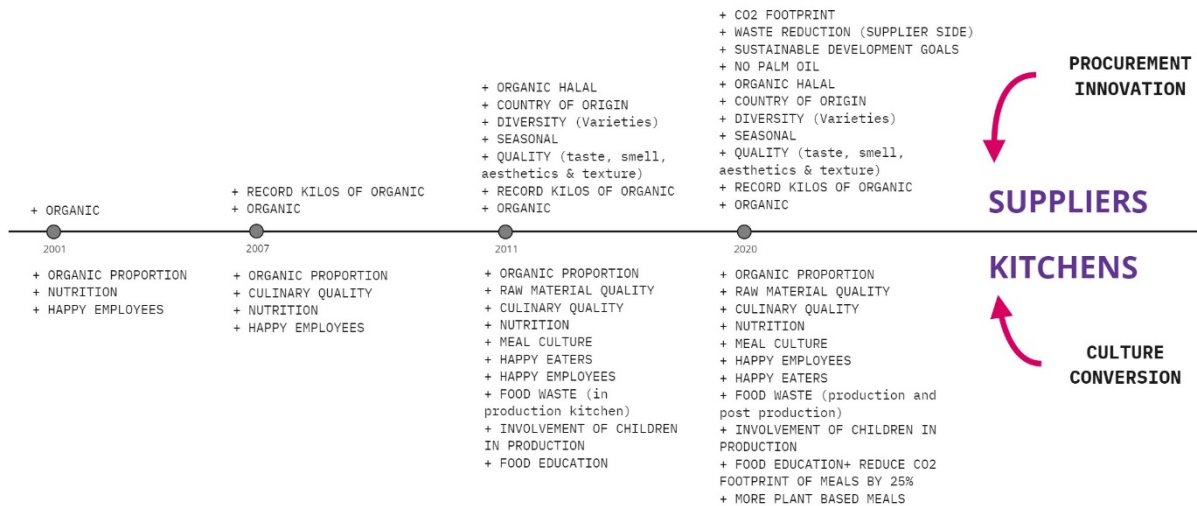


Figure 5: Shifting goals for the kitchens, institutions and the wholesalers

According to informants KBH01 and KBH05 in the early years of the transition, the technical specification was focused on maximising the offering of organic products. Later the procurement specification would demand much more of the suppliers such as more seasonal produce, an increased diversity of varieties, halal meat, minimal packaging, minimally polluting delivery vehicles etc. The technical specification lays out the mandatory criteria that the tender offer must meet for the supplier to be eligible to bid for the tender, if the wholesaler is successful the municipality will enter into a procurement agreement.

The following service technical specifications were mentioned by informants KBH05, KBH08 and KBH01 as crucial for being able to ensure compliance to the product technical specifications and monitor progress of the kitchens towards the goals for the public meal system:

- Provision of verification documentation for food
- On-time deliveries that match kitchen orders
- Recording country of origin to be sure of seasonality criteria
- Reporting of proportion of organic produce per order to kitchens (in kilograms)

Food technical specification minimum criteria:

- Compliance with EU Rules
- Organic Certification (DK Organic Label for DK produce, EU Green leaf label for EU produce etc)
- Nutrition Labelling
- Country of Origin
- Seasonality of produce (preference for food that is picked in season in the location it is grown)
- Organic Halal slaughtered meat

After wholesalers meet these minimum service and food technical specifications, the contract is not just awarded on lowest price. There is an additional scoring criterion that includes product range (Diversity of varieties in fruits, vegetables, flours etc) and quality (taste, smell, aesthetics and texture). An aggregate score is developed based on the following weightings price (40%), quality (35%) and range/diversity (25%) (Procura Plus, 2017) (Interview with KBH01).

When there was a desire to stimulate a new product market Copenhagen included additional scoring criteria incorporated into the aggregate scoring calculation. The organic halal slaughtered meat was one such market that did not exist and required stimulation. Wholesalers were concerned that they would not be able to meet demand if it was made part of the minimum criteria, so the procurement officer incorporated points for organic halal into the scoring criteria, not the minimum criteria. It was to send a signal that those wholesalers who cannot commit to supply will still be eligible to bid, but those who attempt to supply the organic halal meat will be rewarded. Organic Halal meat is now an established product line, so it has become part of the minimum criteria in the technical specification.

3.6.8 The evaluation of food quality

The quality score is based on a select sample of food that is evaluated by the Quality Evaluation panel. The procurement officer uses feedback and purchasing records from the kitchens to determine which the sample of food items that are to be evaluated. For example the food items that represent significant contract value (mass[kg]x price) such as canned tomatoes where there is a large degree of variation in quality and those food items where despite not representing significant contract value, have a significant impact on the final meal things such as basil. So after qualifying for the procurement tender, suppliers must be evaluated based on quality, so they submit a sample of fresh (perishable) and non-perishable foods to be evaluated by a Quality Evaluation Panel.

“The panel is comprised of specialists from university, the head chef of the central kitchen at BUF, selected other chefs from the municipal kitchens and most recently the procurement officer (PO) is including representatives from each of the suppliers to provide transparency to the tender evaluation process, of which the quality evaluation is a key component” (KBH01)

“it is important for [the PO] that they know that this is... a process they can trust and the best person that fulfill the criteria [the PO] puts will win” (KBH10)

The quality evaluation panel is charged with evaluating the taste, smell, aesthetics and texture. KBH01 describes the following elements of the evaluation process which are to ensure a fair competition:

1. The food samples are anonymised
2. The samples must be evaluated according to the characteristics defined in the tender specification that details the desired, taste, smell, aesthetics and texture, such as nutty rapeseed oil or crunchy lettuce
3. Where there is no specification on quality characteristics, the panel must evaluate it according to the ‘state of the art’ or ‘best practice’
4. The required characteristics are further explained by the PO
5. The PO is there to answer clarification questions
6. The panellists are not allowed to speak to each other or see each other’s scoring sheets

*“Is it crispy? Is it too soft or as it is supposed to be
How much water is in there?
How is the quality?
Does it taste like you're supposed to taste?” (KBH01)*

A final aggregate score for quality out of 10 is developed for each of the food items in the sample.

After the quality evaluation panel concludes each food item is given a relative total score integrating price, quality and range, which is then weighted according to its proportion of the total contract value. These relative aggregate scores are then summed to determine a score for each wholesaler supplier. The following formula for calculating the supplier score is based on a discussion with KBH01, but is indicative, it demonstrates how such criteria can be used to transparently determine who should win the contract.

$$\text{Supplier Score, } S_s = \sum \left(\frac{(fm_i * ps_i)}{\sum fm_i * ps_i} \right) \times \left(40p \left(\frac{\min(ps_i)}{ps_i} \right) + 35p \left(\frac{\min(qs_i)}{qs_i} \right) + 25p \left(\frac{\min(rs_i)}{rs_i} \right) \right)$$

Where:

fm_i = mass of food item 'i' [kg]

ps_i = supplier price for food item 'i' [DKK]

qs_i = quality score for food item 'i' [out of 10]

rs_i = range score for food item 'i'

p = points

Each supplier will then be given a total score out of 100. This approach to tender scoring is the primary tool used to preference both quality and diversity (of product offering). For the 2020 tender the PO wants to incorporate a number of new criteria into the aggregate tender score formula such as

- Supplier side waste reduction
- The UN Sustainable Development Goals
- CO₂ footprint

3.6.9 Quality control and dealing with non-compliance

There were a number of enforcement mechanisms to ensure that the procurement specification was complied with. Informants mentioned that the procurement agreement does not necessarily reflect the reality on the ground when it comes to meeting the specifications such as, on-time delivery, that the food is actually organic, and that the quality is not deviating too far from what was tested in the supplier sample during the tender evaluation. The municipality has had some bad experience in the past with a supplier who over promised and under-delivered, to the point that the contract was terminated. As a result of that experience they have established some quality assurance measures.

One measure is that within the first 3 months of the procurement agreement being implemented, the conversion consultants will go un-announced to randomly check scheduled deliveries, to check that they have delivered what is ordered, on time and that it meets the specifications. Kitchens are also able to submit complaints to the procurement officer to follow up. If the issues are not rectified by the wholesaler after being notified and serious issues continue to be experienced, then the municipality is able to terminate the agreement and go to the next best scored wholesaler (Interviews with KBH01 and KBH10).

Another measure for quality control, is that it is possible to report the wholesaler to the Danish Veterinary and Food administration (DVFA) who does the inspections related to food safety and health, from farm to fork, including Organic Certification. So, if product is suspected as not being organic the DVFA can head over for a spot inspection and follow up accordingly. The fact that it is state based means that the investigation of a potential non-compliance is resourced by the state and does not incur a cost on those reporting the non-compliance.

“Then you can make alert them to say, okay, you don't know about the bananas and then they can go out and check so that you don't have to sort of check all the way back to Brazil and figure out” (KBH10)

Another quality control measure that can be utilised as part of the procurement agreement the municipality has scheduled quarterly control meetings with the wholesaler, where it is possible to address any issues.

3.6.10 The procurement tender process

Procurement agreements typically apply for 2 years and can then be extended for a year at a time up to a maximum of 4 years. This allows for review and for the municipality to walk away if it is not satisfied with the performance of the wholesaler. However, the general approach of the municipality towards the wholesalers is one of transparency, dialogue, and collaboration.

Before the end of a procurement agreement and the call for a new tender to supply the public kitchens, procurement officer is engaged in a dialogue with kitchens, to understand their needs and wants. One such example was explained by KBH10:

“when the kindergarten cooks come into to training, the teachers will say it's really important that the children get to see whole fish and that they get to taste all these different things and that you show them the or the diversity of the seasons and things like that”

Following extensive dialogue with the kitchens, the wholesalers are given a notice that a call for tender is approaching, during which time they have 14 days to ask questions, submit ideas and comments. They also have the ability to declare which ideas and comments are considered “commercial in-confidence” (Procura Plus, 2017 #215). A week later a draft tender contract and technical specifications is published. After which, the procurement officer engages in what they term ‘market monologues,’ separate meetings with each potential wholesaler to explain the thoughts behind what ended up in the final document (Interview with KBH01). To clarify how their comments, and ideas were integrated or why something was left out. The monologues are also an opportunity for the bidders to open up with some of their ideas:

“It is felt that these individual meetings resulted in more ideas being gained than possible in an open forum” (Procura Plus)

Following the market monologues a meeting is held with all the potential bidders present. Here the procurement officer is available to clarify to all the technical specifications, the documentation and answer questions. Potential bidders have until the following evening to submit comments after which the tender is published and call for tender is called.

“And it's important when you do all this kind of crazy new stuff in a tender, they need to understand why and they need to understand the thoughts behind it and the good ideas behind it.” (KBH01)

Just like incorporating representatives from potential wholesalers into the quality evaluation process, CC places strong emphasis on ensuring fairness, transparency so that the wholesalers see the process as legitimate and feel motivated to collaborate with CC to innovatively improve supply service they offer to the kitchens. KBH10 concurs with their opinion on the approach CC takes to the tender development process:

“you do it according to him in a way that's transparent to everyone and that it's explained what the criteria are up front so it's not always my cousin who gets the contract that would be weird”

4 Discussion

Copenhagen's public meal system was able to achieve its transition to 90% organic food as a result of number of crucial components that were self-reinforcing and needed to be applied as a whole package to achieve outcomes. As described in detail in the previous section, these crucial components were the people (the conversion consultant agencies and the procurement officers), the guiding framework, the kitchen conversion and procurement agreement tools, political commitment and funding that were leveraged by holistic conversion consultant agencies and Copenhagen's procurement officer to coordinate and implement a package of self-reinforcing of system interventions. The conversion agencies developed and refined a guiding framework inspired by the joy of food, that was used to guide mindset shifts and a kitchen conversion program that raised the competence of the staff to be able to cook organic, healthy delicious food from scratch. The procurement officer utilised the procurement agreement as a tool to drive the wholesaler to deliver food such that kitchens had what they needed to cook delicious, healthy and organic meals. The holistic conversion consultant activities were able to coordinate implement system interventions due to the legitimacy and funding that was provided by high level political commitment.

As mentioned in the introduction our socio-ecological system is undermining the ability of our earth systems and the survival of humanity. It is not enough for our communities to simply address the symptoms of a problematic system. We need to address the root causes of these problematic outcomes within our socio-ecological systems if we want it to generate positive outcomes rather than problematic outcomes. Our food provisioning system is driving multiple problematic outcomes and many actors recognise that it needs significant transformation.

To drive transformation, scholars consider our provisioning systems through the lens of systems thinking to understand the root causes generating the problematic outcomes and identify leverage points for change, that can be targeted for intervention. The International Panel of Experts on Sustainable food systems, an independent research and analysis body of scientists, professionals and practitioners from civil society did exactly that with their publication "From Uniformity to Diversity – A paradigm shift from industrial agriculture to diversified agroecological systems" (IPES Food, 2016). They conducted a rigorous analysis of the global food system and identified key leverage points and an associated list of self-reinforcing of 7 recommendations that can inform actors to intervene to transform the food system.

"Using public procurement to support local agroecological produce" was one of their 7 recommendations for transforming food systems. The purchasing power of city municipalities can be leveraged to provide stable, baseline demand, which can incentivise farms to transition their production practices, contributing in broader food systems transformation. This can be achieved by making direct agreements with farms to support the transition or like in the case of Copenhagen market signals are sent out, resulting in farms indirectly being incentivised to transition.

While the public meal system of Copenhagen did not support either local or agroecological produce for its kitchens, it still required a transition. Such a transition required more than simple substitution of ingredients.

4.1 Overcoming typical barriers

Assuming that the city has sufficient mandates and levers to take action, there are a number of barriers to taking action which were highlighted in research by Hawkes and Halliday (2017) which include; the **(B1) siloed nature of government and society**. While the municipality of Copenhagen does exhibit this barrier

the conversion consultants were empowered with access to all areas to work across administrations and across the various levels of the municipality.

Food affects many aspects of society and municipal government as mentioned previously and collaboration and action is required throughout the silos, but this is not facilitated with most conventional structures. Both MUFPP and IPES-Food strongly stress the need for an **'enabling governance environment,'** for engagement and collaboration across municipal agencies, which "...is crucial for developing ambitious integrated policy that yields synergistic outcomes..." (Hawkes, 2017, p. 7). It was also clear how important it was in the case of Copenhagen's transition to have conversion consultants that had a holistic overview to overcome the siloed nature of government and were legitimised by political support to be able to have that holistic overview.

However, according to findings from both Hawkes and Halliday (2017) and IPES Food (2018) **political changes at various levels of government** can significantly undermine support for interventions in the food system such as withdrawal of funding or support for things like a dedicated food governance body and various programs that support a holistic approach to intervening in the food system. This was also evident in this case study, political changes were responsible for the closure of the inhouse TMF Dogme Organic Office, but regardless, political commitment was maintained for the municipal objective of an organic transition. Political commitment was mentioned as a key enabler which correlates with the research in this case study (Hawkes & Halliday, 2017) as was the conclusion of others who researched Copenhagen's transition (Jensen & Mikkelsen, 2006).

While there is a danger in Denmark of municipalities not have significant legal protection over their autonomy to fund interventions in the public food system (Baldersheim et al., 2019), there was no evidence of what IPES Food (2018) describes as **Overriding higher level government decisions** can undermine the ability of municipalities to use their power to decide .

4.2 Relevance for others

The transition of Copenhagen's public meal system has demonstrated that it is possible to implement a set of crucial components to both pilot, scale up and scale out a public meal system transition. The insights from researching Copenhagen's transition can be utilised to implement an effective intervention in another municipal context.

Copenhagen leveraged its responsibilities for health promotion and preventative health to initiate firstly an organic and then later a culinary transition of its public meal system. A kitchen conversion program coupled with an innovative procurement agreement can roll out and showcase healthy sustainably produced diets while providing a base level of stable demand to sustainable farms. According to WHO's policy report, "there are specific opportunities where diet-related health, economic and environmental goals could be connected for co-benefits, such as through public procurement" (Parsons & Hawkes, 2018, p. 40). This is just one example of action that the municipality can take to deliver health and sustainability outcomes through driving food system interventions with public procurement in the forefront.

However it is very important to keep in mind that Copenhagen did not achieve its transition simply by changing the procurement specification in its procurement agreement and kitchen routines and practices, the municipality indeed unleashed holistic conversion consultant agencies to drive a culture conversion throughout the entire public meal system.

4.3 A systems thinking perspective on the transition of Copenhagen's meal system

The public meal system in itself is a system that can be analysed through the lens of systems thinking, Donella Meadows's iceberg model (2008). Because the demand was to transition conventional meals to organic at no extra cost, it was not possible to simply substitute conventional for organic. Savings would need to be found and this would require cooking from scratch and reducing waste.

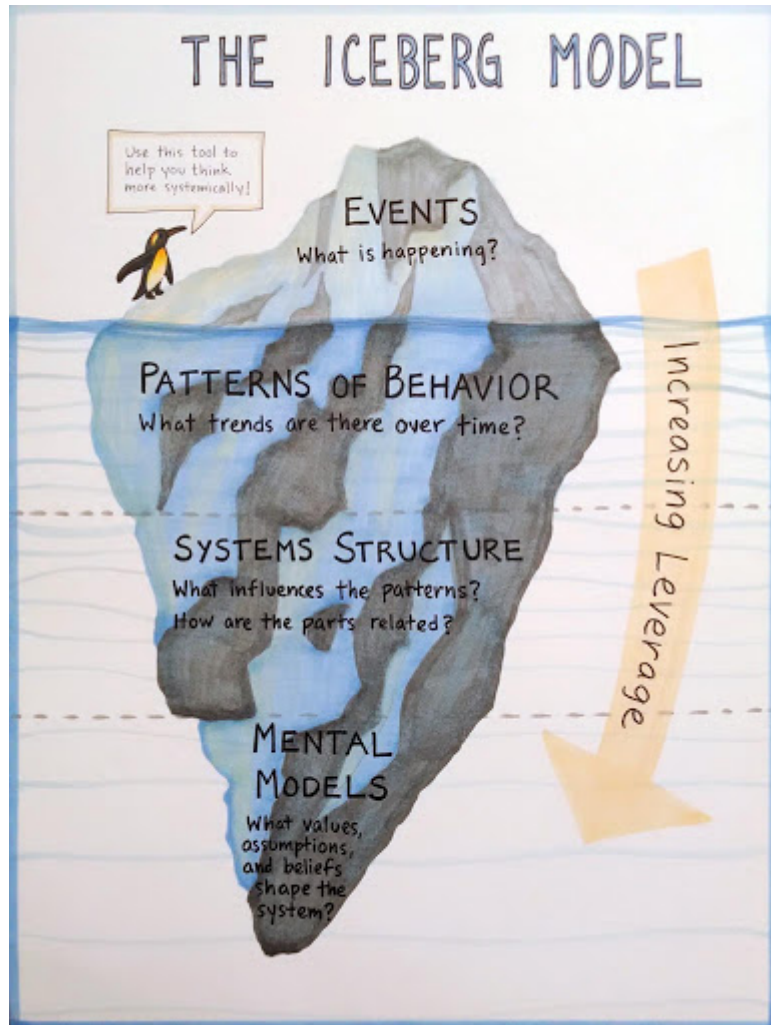


Figure 6: Meadows's Iceberg Model (2008)

The iceberg model is a useful visual framework adapted by System Thinking scholars, Meadows (2008) and Scharmer and Kaufer (2013) for understanding complex contexts that are generating problematic outcomes. According to (The Academy for Systems Change, 2018) it is "a valuable tool to encourage systemic thinking and help you contextualize an issue as part of a whole system." Figure 6 illustrates the model and the 4 tiers comprising of Events, Patterns of Behaviour, Systems Structures and Mental Models. Events can be thought of as the outcomes or symptoms of a system that are visible and on the surface. As we go deeper into the model, it is possible to see how events are linked to patterns of behaviour, systems structures, and mental models. These structures and mental models are usually hidden in the complexity but a systems thinking perspective encourages us to look for the underlying elements that are leading to problematic outcomes.

The underlying structures are defined by what Donella Meadows describes as system rules (incentives, punishments and constraints) and system goals (Meadows, 2008). These rules and goals are in themselves

shaped by the mental models which are also known as mindsets (Meadows, 2008). As interventions target deeper elements, Meadows (2008) argue that there will be increased leverage. The following section will discuss the findings of this thesis through the perspective systems thinking.

Before the transition began, the public meal system in Copenhagen had numerous systemic issues, such that it would be unable to respond to a directive to cook from scratch, reduce waste, buy differently and buy organic. The public meal system was generating conventional meals that were of poor culinary and nutritional quality (known as visible events in systems thinking). That was as a result of the cooks cooking food from processed foods and using frozen ingredients (known as patterns of behaviour). These patterns of behaviour were being incentivised as a result of both structural issues (lack of skills and knowledge about cooking from scratch, menu planning, etc) and mindsets within the municipal food system, as echoed in Meadows' (2008) work which is visual represented in the iceberg model.

According to my findings, the poor competence of the cooks, their lack of skills and training, lack of knowledge to be able to cook from scratch and how to change the menus to be use more plant-based foods and reduce waste all fit in the description of the Systems Structures by Meadows (2008). Furthermore, a lack of system of incentives or constraints (system rules) to preference cooking from scratch pattern of behaviour, goals to preference the creation of such a set of incentives and constraints, and training programs to improve the competency of its cooks can be viewed as structural issues within this system.

Why would that even matter in a system that merely saw food as fuel. My findings showed that problematic mindsets in Copenhagen's meal system pervaded the thinking of those people within it, from the eaters, to the kitchen staff to the decision makers. As reported in interviews, public food was simply expected to be bland and gross; kitchen staff were seen as and they saw themselves as low status 'kitchen ladies' not health professionals; the municipal meal system was seen as unimportant. Eaters did not expect much either, and when the government proposed mandatory meals in the day-care centers in Denmark, the proposal got thrown out because of people's real experience of terrible food. This was also due to the fact that they had trouble seeing that it could be delicious and healthy and it could spark joy. It was not clear to them the municipal food system could actually be a critical tool for driving better production practices, while delivering delicious meals that would nurture healthy and happy Copenhageners. Other municipal stakeholders that influence the meal system also struggled to see how the food system could possibly be relevant let alone helpful to achieving their agendas. These issues are in alignment with what Meadows (2008) describes as Mental Models.

According to Meadows, interventions are places to intervene in a system if you want to shift it, which she outlines in her book on "Thinking in systems – a primer" (Meadows, 2008). She describes how mindsets, structures, including goals and rules are some of the most effective places to intervene in a system. The work of the conversion consultants can thus be explained by Meadows (2008) as multiple interventions to the problematic structures, lack of rules, lack of goals and the problematic mental models within the municipal food system.

The efforts of conversion consultants focused on implementing a guiding framework that saw changes to the system goals (the Kitchen Promise sub-goals), changes to the system incentives and constraints (evaluation and recognition measures). Thus, kitchen staff could have clear guidance on how to operationalise the mindset defined by the Kitchen Promise guiding values. It also incentivised them to change their patterns of behaviour to cooking from scratch, nurturing meal culture, etc.

Furthermore, conversion consultants also addressed the lack of competence of the kitchen staff, by raising their competence through training and courses and in-person consulting in the kitchens to support the kitchen staff make changes to their own context with regard to menu planning, optimising kitchen processes etc. This empowered the staff to be able to cook from scratch, to change their menu composition and optimise their operational processes to reduce waste, cook with more greens, more potatoes, less

meat etc. I argue that changing goals, developing rules, providing training can be regarded as interventions that address the systems structure issues, and is in alignment with Meadows' (2008) perspective of intervention to the systems structures.

Finally I link the work of conversion consultants to addressing mental models as in the Iceberg Model. They put effort in in-person consulting, inspiration events, start-up meetings and introductory courses while including various actors throughout the public meal system from citizens, to decision makers to the staff on the ground. These interventions resulted in redefining what municipal food is, what it means to be a municipal chef, what it means to be an eater in the municipal system, and the importance of the municipal meal system.

Shift in mindset alone would not be enough if kitchen staff were not adequately trained, nor adequately resourced in terms of kitchen infrastructure, tools and equipment. The same goes for institutional staff, they need to be made aware of how they can facilitate the eating environment and be trained with the skills to do it, but as was the case in Copenhagen's schools, creating a proper eating environment for enjoying a meal required infrastructural changes. There is only so much a mindset shift and training could do to turn an ordinary classroom into a cosy eating environment.

Neither would an organic and culinary transition have been possible without an intervention on the rules governing the wholesaler's product and service delivery. For the kitchen to be able to cook differently - with fresh, organic, seasonal and diverse ingredients - the procurement agreement had to incentivise the wholesaler to change their structures to deliver what was desired by the kitchens. The informants expressed how the procurement officer also needed a mindset shift to see how the procurement agreement could be used as a lever for changing the food supply by adjusting incentives and constraints in the procurement agreement. The ability of the procurement officer to experience a mindset shift and feedback from the kitchens was also affected by where they sat within organisational structure of the municipality.

Combined with the changes to the mindsets, goals and rules, structural changes led to a conversion in culture, with staff having a different outlook on public food while kitchen staff were empowered to change their practices from slicing open bags to cooking from scratch and driving a transition from unhealthy meals made with frozen and processed ingredients to tasty, healthy meals made with fresh, high quality, unprocessed and organic ingredients.

Credit should be given to their work, as conversion consultants worked to ignite passion within the kitchen staff and demonstrate how the meal system was a critical municipal system that could deliver improvements for Copenhagen's citizens and for the environment where it sources its food. They ultimately sought to demonstrate how food could be more than just fuel. They helped reimagine and revive the role of a municipal chef from being seen as a low status, low skilled worker producing unhealthy food, to being a highly competent, proud and passionate public servant delivering tasty, healthy, organic food who is a critical proud component in the municipality's mission to facilitate a sustainable environment happiness and health for the citizens of Copenhagen.

4.4 The ripple effects

While the focus shifted to culinary quality, the kitchen conversion program for transitioning Copenhagen's public meal system to 90% organic was a proven success.

The stakeholders who gained knowledge and experience driving this kitchen conversion program went on to heavily influence the policy development and take leading roles in the implementation of the kitchen conversion program component the Organic Action Plan 2020. This was the case primarily for Copenhagen House of Food but also for some of the conversion consultants who were involved in TMF Dogme Organic office (see mention of Øko++).

While the municipality did not directly support the transition of production practices of farms in Zealand with its kitchen conversion program it inspired a nationwide kitchen conversion program, a key component of the Organic Action Plan. This Organic Action Plan also was stimulating demand (sub-components public kitchens and consumers) while boosting the supply (sub-components for farms, processors and wholesalers). It kick-started a series of system interventions, changing of mindsets, structures and goals.

5 Conclusion

This case was significant as it was an example of a transition that successfully converted the cultures of all types of public kitchens to 90% organic at no extra cost to the food budget while also delivering a culinary transition and multiple other benefits.

This research addresses a gap in literature for a holistic and in-depth investigation on how the Copenhagen public meal system was able to achieve a transition to 90% organic of public food at no extra cost to the operating budgets of kitchens. There is literature focusing on only certain components of the public meal system (Boncheva & Gichinga, 2020; Vittersø et al., 2008), the individual outcomes of the transition (Sørensen et al., 2016a) (Sørensen et al., 2016b), particular drivers of the transition (Sørensen et al., 2019), challenges and sustainability aspects of this complex phenomenon ; however the research did consider the entire meal system while taking into account that it was not just a conversion of practices but also a conversion of mindsets, rules and goals, leading to new kitchen cultures led by a holistic and competent team, which were all vital components of success (Barling et al., 2013; Mikkelsen & Lundø, 2016). An important lesson from the case of Copenhagen is the need to reinforce a change of practices with a change of mindsets and associated goals to produce a more permanent, impactful, and positive outcome. This was possible due to consultants adjusting their approach to the context when working with stakeholders from the different parts of the municipal food system to make it understandable while demonstrating how the kitchen conversion was beneficial and-or meaningful to the stakeholder.

With this thesis, I have striven to deliver an in-depth and systemic analysis of the organic conversion program of Copenhagen, considering the interventions executed at the multiple leverage points of the public meal system to shift the structures, the goals, rules and mindsets, while zooming out and seeing how these system interventions were interlinked, coordinated and implemented. I also considered why the political and funding commitment sustained the activities of the agencies over the period of the whole transition. It also looked at how the Copenhagen meal system transition inspired a nationwide kitchen conversion program policy instrument that was coupled with policy instruments to boost the supply of organic food. The conversion consultant agencies were key partners in both the design and implementation of this national kitchen conversion program.

Copenhagen has taken a vertically integrated approach to achieving the organic sourcing of food, both through their control of the procurement agreement and their control of the operation of the majority of the kitchens delivering meals for the public. Overall, what made this transition successful can be attributed to several characteristics described in previous sections: a competent team of conversion consultants and a procurement officer who had an overview of the entire food procurement system that drove the transition, a conversion/transition framework guiding both the operation of kitchens and the culture conversion process, tools for effective conversion, and lastly sustained political and funding commitment that financed the conversion consultants to coordinate and implement transition process. These attributes represent the crucial components of this transition process, and they may inspire the development of a coordinated program of system interventions in other municipal meal system contexts.

Public procurement represents a significant portion of the demand in the food system, depending on the size of the municipality it is large enough for wholesalers to want to adjust their product offerings to secure the procurement contract. This was evident in this research. Converting kitchens and procurement agreements to cook and source organic represents opportunity for public actors to leverage their purchasing power to drive the wholesaler to source and supply 'sustainable' products from 'sustainable' farms and processors. This represents an opportunity for municipal actors to leverage systems change that can drive the transition of production practices. The case of Copenhagen is an example of how changing the food purchases led to healthier, more delicious meals, and it demonstrates how municipal purchasing power coupled with culture conversion can lead to beneficial outcomes for the health of citizens while also

changing the mindsets and practices of the wholesalers. Furthermore, by creating demand for not only organic but also quality food, it helped set nutritional and culinary standards. Conversion of kitchens to purchasing and cooking organic in Denmark was a key driver of demand to support the other policy instruments of Denmark's largest national package of policy instruments to encourage a boost in farmland and production of organic products.

While Copenhagen initiated its transition out of a concern for the contamination of its drinking water sourced from the aquifers under the farmland of Zealand, the procurement agreement never specified that the food should come from that particular region. It is not easy to do that due to both EU tender rules but also the reality that the farms are not able to compete without access to a supply-chain infrastructure that facilitates the delivery of local produce.

During my research, I noticed there is lack of research that examines the effect of transitioning public meal and procurement systems on transitioning production practices on farms, also there is a lack of research on how or if it is possible to preference the sourcing of food from diverse agroecosystems at no extra cost to the food budget. The procurement agreements only specify that the wholesaler must document the country of origin, so it is difficult possible to trace kitchen purchases back to individual farms. However, municipal organisations are significant purchasers and their decisions can influence how food is produced and what kind of food is preferred. Therefore, future research is needed to understand what measurement tools and system interventions are necessary to enable public meal systems to steer their demand into stimulating transition of production practices of farmland to organic.

Further research is also needed to understand the impact of the City of Copenhagen severing their long term relationship with the conversion consultant agencies and tendering out these responsibilities to the ability of the agencies to coordinate and implement transitions to deliver new municipal objectives such as a 25% reduction in the CO₂ footprint of the food purchases. Further research is required to develop indicators and data traceability for food that can measure the stewardship of the land, considering ecological and social criteria, such that this could form an additional criteria in the procurement agreement.

Linking public procurement to drive landscape level change by preferencing long-term partnerships with particular regions should be the next natural step for municipalities to use their consumption to drive social and environmental restoration in the places it sources its food.

5.1 Limitations

While the case had already received significant attention for its transition to 90% organic food, at the time of beginning the research there was not substantial information on how they managed to initiate and sustain such a transition. Even though this was a set back in the beginning, it also compelled me to dig deeper and gain even more insights into the case.

As I proceeded into data analysis, it became apparent that I could interview more informants. However due to time restrictions, I was not able to hold more interviews with additional informants.

Another limitation was the overwhelming amount of data that I collected. I overcame this limitation by employing a novel technique called Giga Mapping.

5.2 Personal notes

The Agroecology program that I am a student of focuses on nurturing the agroecologist who is capable of approaching systems to bring about change. As an agroecologist, dissecting this case was meaningful to me in various ways, first I was able to apply my training on systems thinking and sustainability transitions. The novel giga-mapping technique allowed me to utilise systems thinking in a visually compelling, complex yet manageable way, which was also appreciated by the stakeholders who had never seen the entire process documented in this way as a whole. Secondly, I was able to demystify this process so that other

organisations, institutions or cities around the world could benefit in their own transition processes. Today, many municipalities are setting similar goals. Therefore this research might help these conversion/transition programs by offering a formulation of success through a thorough, thoughtful and inspiring investigation of the Municipality of Copenhagen's achievement of 90 percent organic in all public meals at no extra cost.

How did Copenhagen achieve a transition to 90% organic food

- Conversion consultants had to deliver multiple goals
- Motivations shifted from conversion of farmland to culinary culture and happy healthy Copenhageners
- In order to successfully achieve the goals of the municipality they needed to address both the kitchen and the eating environment. This required them to understand how to deal with the teachers and nurses who are responsible for curating the eating environment
- Each type of kitchen required a tailored approach to be able to deliver the goals while also delivering the organic conversion.
- To be successful in the organic conversion, the consultants had to align it to the goals of the various different institutional contexts
- Required them to navigate a complex mess of agenda, interests etc.
- Performance indicators for the new goals and recognition
- Constantly communicating....
- Pilot Projects
- Power to decide and Municipal Assets
- Embedded courses in subsidised vocational training system
- *Roles and responsibilities allocation a key element of quality management systems.*
-

Answer to RQ1

- Initiation and sustainment
 - Alignment with City/State Goals/Ambitions
 - Political commitment
- Pilot Projects
 - From case
 - From literature
- PROCUREMENT/SOURCING
 - A tool
 - Could be used to influence more
- POLITICAL COMMITMENT
 -
- OPERATIONAL TACTICS
 - Culture conversion necessary for ingredient conversion
 - Reduce Waste
 - Culture
 - Ingredients
- FUNDING

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Appendix

A. Interview Guide

The following questions were used to gain an understanding of the context around Copenhagen's leveraging of its powers and mandates to drive a transition to 90% organic food for all public meals.

1. How do you fit into the food space in Copenhagen
2. What is your role/relationship to this organic conversion project?
3. What is the criteria for sustainability in this project?
4. How did this transition happen
 - a. When did it start
 - b. What initiated it
 - c. How was the transition funded?
 - d. How do the departments work together for this transition
5. How did you win and maintain support for the program
 - a. What are the municipal goals and objectives that you met
 - b. What are the relevant policies to your work and this program
6. How dependent are you on the political situation?
7. How was/is this organic transition project evaluated for 'success'
 - a. What were the outcomes?
 - b. How much change in agricultural production has occurred

B. Information Letter

Request for participation in research project for master's Thesis

Copenhagen Public Meals Transition to 90% Organic Food

"Leveraging of powers, mandates and property ownership of public actors to initiate and drive interventions for Sustainability Transition in the Food System"

Background and purpose

The project is being conducted by Abel Crawford from Norwegian University of Science and Technology (NMBU). The purpose of the project is to contribute knowledge of utilizing government powers, mandates, purchasing power and property ownership to initiate and drive interventions for sustainability transition. Particularly by exploring how to implement a sustainable procurement system for public meals to improve the social and ecological indicators of a region and provide a baseline level of demand to enable producers and processors to transition to regenerative organic production. Abel will gather experiences from Copenhagen using a case study approach, where observation, collective systems-mapping and interviews are used as methods. System Oriented Design will be utilized as both a tool to identify research areas, research questions, to make sense of the complexity, and facilitate emergent properties from the Copenhagen context. The thesis will investigate the transition of Copenhagen Municipality's public meal service to achieve 90% organic food for all meals at no extra cost to the procurement budget. It will consider; What was the transition process? What were the ripple effects in the food system, and how the transition was achieved?

Who is responsible for this research?

Norges miljø- og biovitenskapelige universitet / Institutt for plantevitenskap is the institution responsible for the project

If you have questions about the study, please contact:

Anna Marie Nicolaysen (Supervisor) [+4767232787, anna.marie.nicolaysen@nmbu.no]

Abel Crawford (Masters Student) [+47 911 589 52 abel.crawford@nmbu.no]

Why are you being asked to participate:

Based on a preliminary desktop research, and in communication with the key-stakeholder you were recommended as a key contact for understanding the Copenhagen Public Meals Transition to 90% Organic project. The key stakeholder has provided your contact details (email) for me to communicate with you.

What participation entails

Participation in the project as an informant will mean that Abel Crawford will interview you based on your experience and connection with Public Procurement, Short Supply Chain and Public Food project initiatives in your city. These interviews are voluntary, and you can retract your participation at any time without giving a reason.

If consent is given, audio from interviews can be recorded. All information will be treated confidentially, and no individual informants or specific case details beyond affiliated city will be named in reports.

Any recognizable details of individual people will be obscured prior to eventual publication or presentation use of the files, and all files with recognizable individuals will be deleted at the end of the project (in 2020).

Voluntary participation

Participation in this study is optional, and you may withdraw consent at any time without giving any reason. Then all information from you or files containing audio, photo, or film of you will be deleted.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

The data collection will be used in the master's Thesis and potential scientific publications. Only the student, Abel Crawford and Supervisor will have access to the audio recordings of personal interviews during the research project. Audio Recordings will be stored on a secure server at the University. All personal data will be anonymized on the interview transcripts, where your name will be replaced with a code, and other personal information redacted. The codes will be stored separately from the transcripts and audio recordings.

You will not be recognizable in any publications.

What will happen to your personal data at the end of the research project?

The project ends on 30.08.2020. Upon completion of the project any audio recordings will be deleted.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent.

Based on an agreement with Norges miljø- og biovitenskapelige universitet / Institutt for plantevitenskap, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?

If you have questions about the project, or want to exercise your rights, contact:

- Norges miljø- og biovitenskapelige universitet / Institutt for plantevitenskap via Anna Marie Nicolaysen (Supervisor) [+4767232787, anna.marie.nicolaysen@nmbu.no] and Abel Crawford (Master Student) [+47 911 589 52 abel.crawford@nmbu.no]
- Our Data Protection Officer: Jan Olav Aarflot from the Research Support Services Office

NSD – The Norwegian Centre for Research Data AS, by email: (personverntjenester@nsd.no) or by telephone: +47 55 58 21 17

C. The origin of the conversion approach

This conversion approach according KBH05 and newspaper article by Syberg (2004) was developed by Anne-Birgitte Agger who had already used it to convert the kitchens of Copenhagen's City Hall and Roskilde's Business School ((Syberg, 2004). She later became the director of the Copenhagen House of Food, from its start-up in 2007 until 2018. Based on Agger's previous work the city contracted her to write the project proposal for the Dogme Organic pilot projects that would initiate the transition of the public kitchens. The proposal had TMF drive 4 different pilot projects (Interview with KBH05), and proving the conversion approach for a sample of each of the 4 types of kitchens in the: Daycare Institutions (BUF), Elderly homes (SUF), employee canteens (ØKF, TMF, and BIF) and Social Institutions (SOF) (Interview with KBH05).

D. KBH Madhus' guiding mission

The following excerpt is the guiding mission of KBH Madhus (KBH Madhus, 2008, p. 11)

- "That good food and healthy meals are made important parameters for municipal service and accountability.
- That food should be an important part of a fundamental care in the public institutions in Copenhagen municipality.
- That the food must suit the needs of the diners.
- Promoting good nutrition by knowing that the food is actually being eaten with gusto.
- That at all meals there is a host or hostess who is responsible for the food, the meal and the well-being of the diners.
- To elevate the dining experience through attention to the whole eating situation.
- That cooking and the food offerings are an integral part of the life of any institution or municipal enterprise.
- To make public meals play an active role in better public health and one necessary food formation.
- To promote food that is produced sustainably and organically, and where the raw materials origin is largely known to the diners.
- To create a higher culinary quality based on the municipal framework and with the motto "the art of the possible".
- To increase the prestige and job satisfaction in the kitchens where the public meals produced.
- To create a healthy and cheerful food culture in the public space"

E. The post Kitchen Promise criteria for assessing kitchens

- **Food infrastructure** - eg food distribution, investment and finances, as well as facilities for food processing, production and eating
- **Food** - eg raw material quality, culinary level and nutrition
- **The meal** - for example, the host, the meeting between people, food formation and the physical environment
- **Involvement of the children** - eg participation in production, preparation of meals, etc. Gets the new food habits and food education?
- **Organization** - eg collaboration, job satisfaction and communication and interdisciplinary work on food and meal-there

The analysis is based on both quantitative and qualitative data derived from interviews with children and staff, observations, questionnaire analyzes, excerpts from the Child and Youth Administration's systems and earlier reports and notes.

(KBHMadhus, 2018)

F. The Kitchen Promise Indicators

The following is a google translated excerpt from KBH Madhus' 2008 report "Generation Food"

"Ready to eat

- *The smell of food fills the room and whets the appetite.*
- *The dish is visually inviting.*
- *The good taste is ensured by systematic tasting.*
- *The menu varies day by day in aroma, appearance, taste, texture and choice of ingredients.*
- *The culinary quality of everyday food is high.*
- *The food reflects the institution's food and eating culture.*
- *Food safety is in order, and is not ensured at the expense of food quality.*

Raw product quality

- *The Danish season is a guiding principle for menu planning and purchasing.*
- *Variation in the use of varieties, species and carvings is great.*
- *At least 75% of the ingredients are organic.*
- *Sustainability considerations play a significant role in procurement.*
- *Finished goods only find their way to the kitchen if they are better than the kitchen itself can produce.*
- *Powder mixtures are not included in food production.*
- *Freshness rather than frozen.*
- *The kitchen staff knows the origin of the goods.*

Respect for the meal

- *There is time for everyone to eat, enjoy and digest the food.*
- *The meal is central and must not be disturbed.*
- *All meals have responsible hosts eating with.*
- *The space eaten in promotes the meal experience.*
- *The eater becomes involved, heard and respected at the meal.*

The right food for the right people

- *The food has the nutritional composition that the people need.*
- *The versatility of the diet is ensured through variation throughout the day and in the menu plan.*
- *There is awareness of and traded on the individual nutritional status and special needs.*
- *The public dietary recommendations are followed.*

Responsibility & job satisfaction

- *Management and employees work together to ensure the job satisfaction that is necessary to cook great food and host good meals.*
- *Management communicates visible, shared values around meals.*
- *Management takes full responsibility for the institution's meals.*
- *The employees take ownership of the individual meal.*
- *The professionalism in the kitchen and in the hospitality is sufficient to meet the requirements the good meal.*
- *Management works consciously with financial management for the benefit of better meals." (KBH Madhus, 2008)*

G. Copenhagen House of Food values

“Copenhagen Madhus’ mission is:

- *That good food and healthy meals are made important parameters for municipal service and accountability.*
- *That food should be an important part of a fundamental care in the public institutions in Copenhagen municipality.*
- *That the food must suit the needs of the diners.*
- *Promoting good nutrition by knowing that the food is actually being eaten with gusto.*
- *That at all meals there is a host or hostess who is responsible for the food, the meal and the well-being of the diners.*
- *To elevate the dining experience through attention to the whole eating situation.*
- *That cooking and the food offerings are an integral part of the life of any institution or municipal enterprise.*
- *To make public meals play an active role in better public health and one necessary food formation.*
- *To promote food that is produced sustainably and organically, and where the raw materials origin is largely known to the diners.*
- *To create a higher culinary quality based on the municipal framework and with the motto "the art of the possible".*
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