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# Organic school meals in three Danish municipalities

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Organic school meals in three Danish municipalities

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*Sammendrag:*

Et sunnere kosthold er viktig for å forhindre at barn blir overvektige. I denne sammenheng kan økologisk skolemat være en effektiv strategi for å tilby sunn mat til barn. Mål med denne studien var å se nærmere på dagens situasjon av økologisk skolemat i Danmark ved å gjennomføre en case-studie i tre kommuner på Sjælland, der landets mest utviklede modeller for organisert skolemat finnes. Disse kommunene har til felles at salg av økologisk mat ved barneskoler ble introdusert for noen år tilbake, men tilnærmingen er ganske forskjellig. I København ble et stort sentralkjøkken etablert, hvor også økologisk mat tilberedes. Maten blir varmet opp og solgt gjennom kiosker på skolene. I Roskilde er det et samarbeid med en økologisk matleverandør og maten selges i skolekantiner. I Gladsaxe tilbereder og selger deltidsansatte maten i den enkelte skolen. Disse ansatte har fått opplæring om økologisk mat av en kommunal koordinator. Basert på intervjuer med sentrale informanter i de tre kommunene beskriver rapporten de involverte aktørene, barrierer og framtidige planer for å øke forbruk av økologisk mat i skolemåltidene. Likheter og forskjeller mellom kommunene blir diskutert. De største utfordringene for økt forbruk av økologisk mat i skoler er knyttet til manglende infrastruktur i skolene, som kjøkken og spiserom, og at systemene som ble utviklet hittil ikke er særlig forankret blant elevene, lærerne, andre skoleansatte og foreldrene.

*Summary:*

In order to prevent children and young people from becoming obese, healthier eating patterns are urgent. Organic school meals may be an effective strategy to provide healthy food to children. The purpose of this study was to take a closer look into the current status of organic school meal systems in Denmark, by conducting a case study of three municipalities in the Zealand region that have the most developed models for school meals service in this country. These municipalities have for some years introduced organic food for sale in their primary schools, with three quite different approaches. Copenhagen has established a large central kitchen, producing partly organic food that is heated and sold in tuck shops at the schools. Roskilde cooperates with an organic catering company, delivering food to be sold in school canteens. Gladsaxe has part-time employed staff preparing and selling food at each school, and these people are educated about organic food by a municipal coordinator. Based on interviews with key informants in the three municipalities, the report describes the involved actors, interactions among actors, and barriers and future plans regarding an increased consumption of organic food in school meals. Similarities and differences between the municipalities are discussed. The main challenges for an increased consumption of organic food in schools are related to lack of infrastructure in the schools such as kitchens and dining halls, and that the school meal systems developed so far are not well rooted among the pupils, teachers, other school staff and the parents.

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Anne-Kristin Løes

Picture frontpage, Tina Olsen:  
School food at Værebros in Gladsaxe, Denmark



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## 1. Foreword

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One of eight transnational research projects in the European CORE Organic programme (<http://ipopy.coreportal.org/>), iPOPY (innovative Public Organic food Procurement for Youth) aims at suggesting efficient policies and instruments for increased consumption of organic products in public food serving outlets for youth (Løes, 2008). Organic foods are produced without pesticides and synthetic fertilizers, and processed with restricted use of chemical additives as compared to conventional foods. Hence, organic foods are considered as a healthier choice for consumers, and also as environmental friendly. The iPOPY project is carried out in 4 European countries, Italy, Denmark, Norway and Finland. This report will contribute to the first part of working package 5 (WP5) in the iPOPY project. WP5, "Nutrition and health", will explore whether organic conversion of public food systems will lead to changed dietary patterns that in turn may result in healthier eating among young consumers in school settings. The first part is to undertake studies in the primary schools in Denmark where organic food is being introduced into school meals.

Bent Egberg Mikkelsen  
Leader of WP5  
January 2009

## 2. Introduction

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During adolescence, food habits, physical activity habits and the general life style of young people are easily influenced by the environment including parents, friends, advertisements, television, food availability and societal impact. The meal patterns formed during adolescence tend to track into adulthood and since the prevalence of overweight and obesity is increasing among youth, it is imperative to develop effective strategies to influence the eating habits and lifestyle of children and adolescents (Samuelson, 2000). The school has become one of the preferred settings for environmental strategies aimed at improving the eating patterns of children. This is due to the fact that school is both an arena for food praxis and for learning and therefore eating patterns can be influenced both through the food environment and through educational and curricular classroom activities. At the same time, Danish schools have increasingly become the object of sustainability strategies through organic school food procurement policies that seeks to create a more sustainable public food provision (Hansen et al, 2008).

Thus school has increasingly become an arena for politically driven food focused strategies that involves both food supply, preparation and serving as well as curricular interventions. Unlike the situation in other European countries such as Italy, Sweden, Finland and the UK, school food in Denmark has traditionally been the responsibility of the family, but the emerging healthy eating strategies and sustainability strategies has pushed the family in the background. Instead, public actors try to take a lead in the Danish school meal sector (KØSS/Copenhagen Organic Healthy School Meal, 2000).

Although public provision of food is official government policy (Regeringsgrundlaget /Political Platform for the Danish Government, 2007), there are at present no national regulation of the pupils' food provision at school. Instead, the food provision at school in Denmark has become an arena for experimentation in which municipalities and schools seek to develop their own local solutions, and in which actors involved, sometimes involuntarily, seek to make their own sense and meaning of these solutions.

How do these local solutions come into being, and how do they become shaped? What roles do specific local contexts and stakeholder conditions play? What role does the organic food agenda play? What role does the healthy eating agenda play? And do these agendas interact? And most importantly, will these agendas in their locally shaped form be able to deliver "value for money", and eventually be able to pursue goals of societal importance?

Answers to these questions are highly relevant, as school food innovation projects are sweeping the country. The current research seeks to apply an actor network theoretical perspective in order to understand the mechanisms that to shape the school meals in Danish schools these years. We have chosen three significant and outstanding innovative municipalities as our research cases; Roskilde, Copenhagen and Gladsaxe. In these municipalities, all situated on Zealand of Denmark, the municipal administrations have tried to combine an organic procurement strategy with a healthy eating strategy. We take as a point of departure the position that the emerging school food and nutrition systems can be regarded as a technology.

In all municipalities, there is an offer of warm/hot meals for the pupils with reasonable prices; there is an adopted public organic procurement (POP) policy and a defined food & nutrition policy (FNP) in the municipality that set out the political ambitions regarding the school meals. However all municipalities have chosen different approaches, which makes it relevant to compare the shaping processes in each case to another.



## 3. Background

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### 3.1 Organic school meals in Denmark

In order to discern the organic school meals service in Denmark, it is necessary to be aware of the history of school meals in the country. Between about 1880 and 1930, the school meals in Denmark were given mainly to children from poor families. At that time it was common not only for poor children to get warm meals during school days, but also for other poor Danish citizens to receive a simple meal from a so called “soup kitchen”. However, in 1937 the Hygiene Commission in the country evaluated that school meals were poor nutrition. Therefore, at the end of 1930s’ the warm school meals were gradually substituted by sandwiches, in Danish called “et smørrebrødsmåltid”<sup>1</sup>. The new meal system was also called Oslo lunch, because this concept was developed in the capital of Norway. From about 1950, the schools started to pay more attention to nutritional issues regarding school foods, and started to offer milk and vitamin pills to the pupils during school days. The aim was to improve the eating habits for next generations. During the time of financial growth in Denmark, the end of 1960s’ to the end of 1970s’, the concept of school canteens and tuck shops started to appear. In the other words, free school meals were disappearing, and gradually replaced by systems where the children were treated as consumers, and the school meals were still provided with nutritional foods but cheap. In 1980s’ and 90s’ almost all school meals were offered by payment. The Law of School Meals (Loven om Skolebespisning) has expired in 1990s’ and replaced by Law of Preventive Health Measure for Children and Youngsters (Lov om forbyggende sundhedsforanstaltninger for børn og unge.) (Benn, 2002).

Today however, it is not that common to find a school which offers warm meals to the pupils. There are only 20-25% of the Danish public schools that have a school food service (Hansen et al, 2008). Even where the school has a canteen, the lunch box brought from home is often more popular, or the pupils prefer to leave the school area and buy some food nearby. Lunchboxes brought from home are the most common and traditional way for children to have lunch at the Danish schools.

In most cases, parents prepare lunch boxes with a variety of cold food such as sandwiches, salads and snacks. Even when the parents prepare a child’s lunchbox, the content is not necessarily of a high nutritional quality. If the parents have unhealthy eating patterns, this will have a major influence on their children. Further, in today’s modern society, busy parents have less time to prepare nutritional meals, convenience and fast foods become an inclination. In the last 30 years, the number of overweight and obesity children and young people in Denmark has increased by a factor of 3 (Mikkelsen et al, 2004). The increase in other nutrition-related diseases is also alarming (Mikkelsen et al, 2004).

Who can, and should, ensure that the diet and daily food intake of children is nutritionally sound? The parents are of course the main responsible, but public bodies may support and guide them in their efforts. Obviously, healthy school meals play a crucial role in implementation of policies such as ambitious goals for what the children should learn at school, and also to help children to shape healthy eating habits. Even though Denmark was the first European country to introduce legislation for organic agriculture back in 1987, various concepts of organic school meal systems have been developed, but are still slowly running (Dahl et al, 2006). Several municipalities in Denmark have established policies themselves in order to offer paid lunch meals at schools, and commonly organic food is involved. Based on the case studies of organic school meals in Roskilde, Copenhagen and Gladsaxe, the following sections illustrate how some important organic school meal systems works locally in Denmark.

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<sup>1</sup> “et smørrebrødsmåltid” is “usually consists of a piece of buttered rye bread (rugbrød), a dense, dark brown bread with the topping, then among others can refer to commercial or homemade cold cuts, pieces of meat or fish, cheese or spreads” (Wikipedia: <http://en.wikipedia.org/wiki/Sm%C3%B8rrebr%C3%B8d>).

## 3.2 Organic food in Denmark

Denmark has had a long tradition of organic farming, and over the years organic food production has attracted great attention from politicians, authorities and organizations. Effective certification procedures have given Danish organic products a high degree of credibility. Credibility plays an important role in the marketing of organic products. Organic food products are a widespread trade in Denmark, and the products are sold mainly through supermarkets, fairs, subscription sales, and farm outlets.



In Denmark the organic label is the commonly called “Ø-mærket” (in English: the Ø label, organic is spelled as “Økologisk” in Danish). The Ø label is public and was introduced already in 1990 (Danish organic, 2008). More and more Danish people buy organic food. The Ø-label is not only used on Danish domestic, but also on imported products. The imported organic foods have to be certified by the Danish organic

authority before they can be sold in the country.

Even though Denmark has a high production of organic food, it is necessary to import many organic products. The economic importance of organic food has increased for the last 4 years (Table 1).

**Table 1 Turnover of organic food products in Danish retail shops from 2005 to 2008.**  
[Danmarks statistik/Denmark’s statistic, 2009]

Year	2005	2006	2007	2008
Danish kroner (DKK) (1EUR = 7.4 DKK)	2 285 173	2 701 330	3 601 547	4 628 805

The prices of Ø-label products are relatively high, especially for meat products. Also the assortment of organic products is not as varied as for ordinary products in Denmark. The most common and affordable organic foods are dairy products, potatoes, carrots, eggs and vegetables. Dairy products constitute half of the annual total turnover of organic foods (Danish organic, 2008). The demand for organic vegetables and fruits is rapidly increasing. Based on the expanding and relatively mature organic market in Denmark as compared to some other European countries, it is surprising that the organic school meal programs in Denmark are not developing faster to become more popular and widespread than has been demonstrated by the three municipalities studied here. We will now present the three cases, and then discuss possible explanations for this situation.

## 4. Methodology

The interviews were intended to be a time of dialogue between the municipality official and the first author of this report. Questions concerning the school meal service in that municipality were asked according to an interview guideline (Appendix A). The whole process was recorded. The interviews were mainly divided into three parts: general questions, public organic food procurement (POP) policy, and food & nutrition policy (FNP).

POP: Public Organic food Procurement policy refers to a policy, in which a specified amount of specified food is expected to be organic. The policy is practiced in public organizations offering food.

FNP: Food & Nutrition Policy is a set of written and adopted principles that aims to fulfill nutritional needs of pupils at schools, and ensure availability and accessibility of healthy food.

Which informants to contact, and their contact information was arranged by Bent Egberg Mikkelsen and appointments were made by e-mail. The interview guideline and web based questionnaire were sent to the informants before the interviews, to help the interviews running smoothly and efficiently.

After the three interviews were accomplished, a stepwise methodology for analysis of interviews was applied.

- 1<sup>st</sup> step transcribe the recorded conversation from interviews into words. Keep it for later reference.
- 2<sup>nd</sup> step arrange the transcript according to the interview guideline, in order to get a better overview and keep informative messages.
- 3<sup>rd</sup> step interpret the spoken word, now add the theoretical perspective.

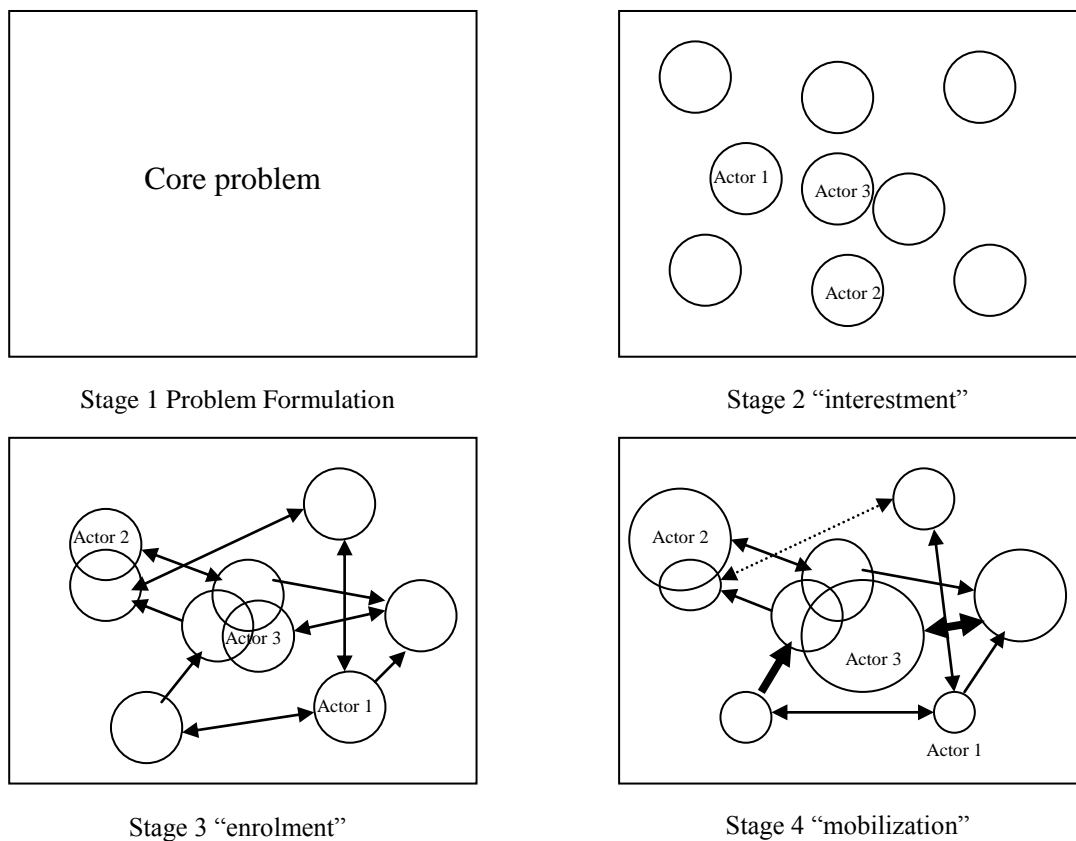


Figure 1. Actor Network Theory (ANT) illustrated by "translation" process.

By literature study, the Actor-Network Theory (ANT) (see Figure 1) was applied in the analysis of interviews to unfold the infrastructure of the school meals service in these three municipalities. ANT was initially developed and applied by a group of scientists studying the sociology of science in Paris (Spira, 2002). The aim of ANT is to explain the complex network in social settings (Pouloudi et al, 2004). To illustrate the actors' network, a stepwise translation procedure is useful (Fig. 1) as described by Spira (2002): "the process which generates the ordering effects such as devices, agents, institutions or organizations is known as translation". The resulting diagrams (Fig. 2-4) were used to analyze the study cases.

In this report, the "translation" process of the actor network was utilized to unfold the infrastructure of the school food service space in the municipalities. The first stage is the statement of a core problem, in this case to define the central actors in the shaping process of the school meal programs, to reveal what goals and other factors that influence them to achieve the aim (that the pupils should consume organic school meals). The second step is to distribute and lock each actor into a proper group, here the municipality bureaucracy, the school, or the food provision. Step three is to illustrate important interactions and relationships among the central actors in the three mentioned groups. The last stage demonstrates possible movements among the actors, which is called a mobilization of the process (Spira, 2002).

## 5. Analysis

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### 5.1 Organic school meals program in Roskilde municipality

In the municipality of Roskilde, our informant was Mads-Peter Klink Engelhardt, who works as a manager assistant in the school and children administration. Currently his main job responsibility is to develop the FNP as well as the practical food serving for primary schools in Roskilde. By 2008 there were 19 primary schools in Roskilde with 9.136 pupils. The answers of Mats-Peter Klink Engelhardt to the questions posed to him during the interview are shown as Appendix B.

#### 5.1.1 *Involved actors*

##### **Policy environment**

Engelhardt told that they have a POP policy in Roskilde, and it has been running for 7 years since 2001. **The city council of Roskilde**, which is responsible for all affairs in Roskilde, has been and still is the key actor during the adoption process, and they have a group of politicians deciding what policies they should carry out at schools. Afterwards the **school and children administration** will compose the content of policy, and within this administration, Engelhard is responsible for the school meals. The policies point out that the schools have to provide healthy school food, which is to be recommended by a professional food expert. Engelhard's department is also responsible for financial support to the schools in order to arrange the meals. Some funding is also used for training of school persons who are responsible for meals.

##### **School environment**

The school administration is the main actor at each school, and communicates directly with other actors in the organic school meal service. Engelhardt mentioned that the school administration at each school hires one person to work as a **school coordinator** and this person cooperates with his department and also the catering company. The **school administration** will set up the eating facilities for pupils, and the school kitchen. The teachers don't have any responsibility for the organic school meal service and have not utilized the meals to perform any nutritional education during class activities. Actually he doesn't think the teachers, **pupils** and **parents** know the content of the policies in relation to the school meals.

##### **Supply chain management**

In Roskilde, all primary schools offering organic lunch meals have these meals centrally prepared by the same **catering company**, which only deals with organic food. The catering company is a private local firm called Frydenholm, and they have their own professional **nutritionist (food expert)**. They are not allowed to serve unhealthy food according to the POP policy, so the catering company plays a vital role to ensure the healthy meals in the schools. They purchase organic food from local **wholesalers** through the year.

### 5.1.2 The actors' network

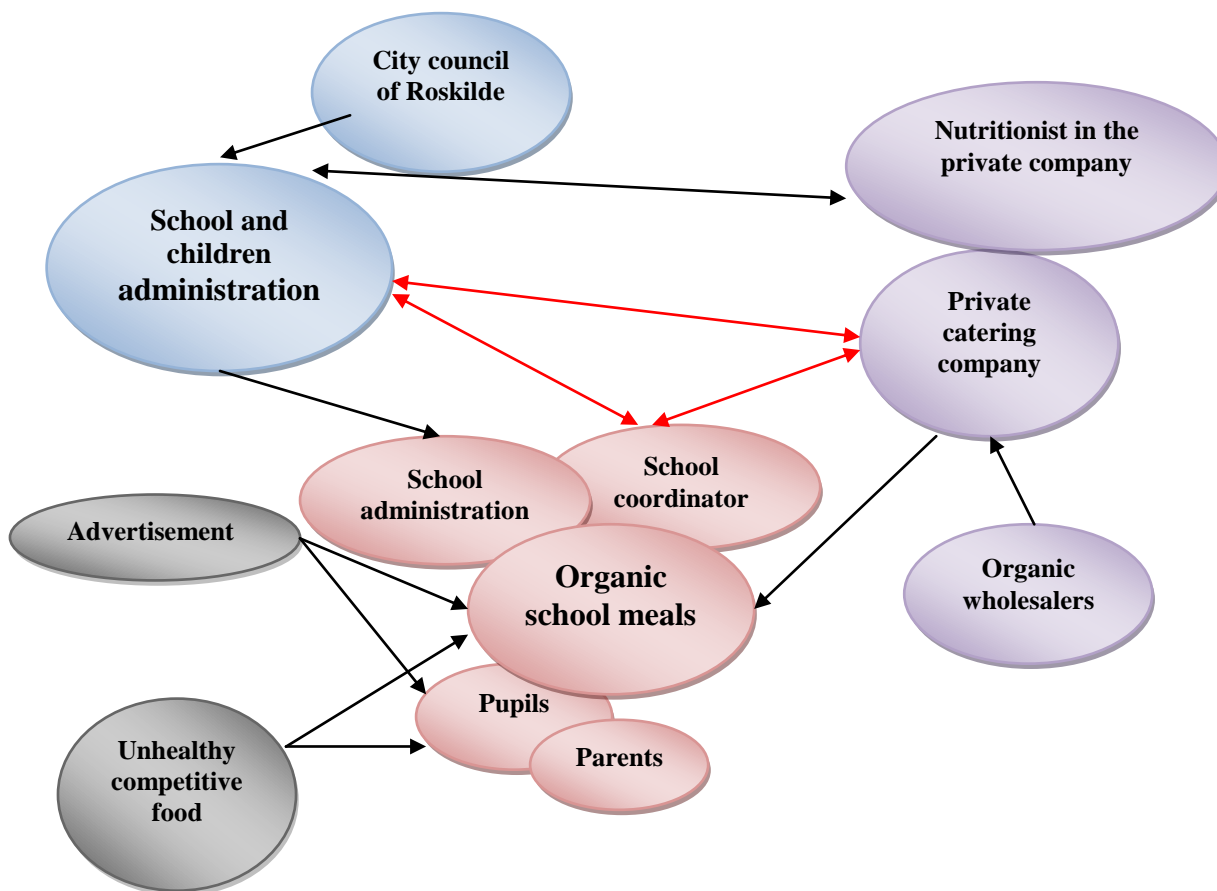


Figure 2. Involved actors in the organic school meal program in Roskilde.

Engelhardt told that the main aim of the POP policy is to promote the health of pupils, and benefit the environment. In the municipality of Roskilde, the school meal program started in 2001, and organic food was involved right from the start. 10 of 19 primary schools currently offer warm lunch meals with organic ingredients, already achieving 92% of the school food. The other nine schools do not offer school meals yet.

The school food coordinators have a food education, and are hired by the school administration to work as a coordinator for the meal serving at each school. The coordinators cooperate closely with the municipality (Engelhardt) and the catering company. Food is delivered daily from the central kitchen to the schools and sold in canteens; the school coordinators are responsible for the kitchen operations.

After the city council decided the POP policy, the school and children administration in the municipality established the cooperation with the local organic catering company about the school meals. The organic catering company decides the whole menu as suggested by the nutritionist, e.g. fat content (30% max). Engelhardt and his department will usually not evaluate whether the menus are accordance with the public expectations; they trust that the company is reliable.

### 5.1.3 Barriers and future

Even though the municipality has offered the organic school meals for several years, it has not been as successful as expected. During the interview, Engelhardt mentioned that very few pupils, only 5-20 % buy and eat school meals. However, the pupils are too young to decide alone if they should buy food at school. The parents have a large influence on the decision and it seems that they prefer to prepare lunchboxes rather than let the school take care of the children's meals. The explanation for this,

according to Engelhardt, is that the meals are not free of charge. Even if one dish normally cost around 20 DKK (2.9 EUR), Engelhardt believes that this is too much for the meal service to attain large popularity.

Other probable reasons may be that lunchboxes have been a well established tradition in Denmark for many years, and the parents may have little trust in school food since they have not any experiences themselves about what school meals are. Further, they are not well informed about the organic policies of the municipality. Engelhardt also mentioned as a practical problem that the school coordinators have poor knowledge about organic food.

In spite of the limited success so far, Roskilde municipality plans to extend the organic school meal service to the remaining nine primary schools. In the future, the FNP which Mads-Peter Klink Engelhardt is developing will hopefully contribute to more healthy and sustainable eating patterns in the primary schools of Roskilde.

## 5.2 Organic school meals program in Copenhagen municipality

In the municipality of Copenhagen (the capital of Denmark), the project “Copenhagen Healthy School Meals” started in 2002 as part of the Dogme project (Dahl et al, 2006). Dogme 2000 is a close and fixed cooperation between municipalities wishing to make an extra effort for sustainable development. In Denmark, the Dogme cooperation covers the five municipalities of Albertslund, Ballerup, Fredericia, Herning and Copenhagen (Dogme, 2000). The interview was performed with Astrid Dahl (Appendix C), a project assistant in the children and young people administration, which interestingly is organized as a part of the department of sustainable development in the municipality of Copenhagen. One of her main tasks is to administrate the school meal program.

### 5.2.1 Involved actors

#### Policy environment

Astrid Dahl is a new employee in the **administration of children and youth**. She states that Copenhagen has both a POP policy and a FNP in the school meal system. The driver for the implementation of the organic school meal service in Copenhagen is the cooperation with the other four municipalities in the **Dogme** project. The initial motivation was mainly to promote the health of children, but afterwards the **municipality of Copenhagen** would also like to improve environmental issues. Astrid Dahl mentioned that some pupils don’t have breakfast and lunch during the school day, and hence they cannot concentrate in the classes and have worse learning ability. Astrid Dahl told that the national nutritional guidelines for school meals which are offered by **FVST** (Fødevarestyrelsen - The Danish Veterinary and Food Administration) are becoming stricter, but that the guidelines are not mandatory. In addition to Astrid Dahl, the administration of children and youth has a **product manager** dealing with economy and a **food expert** working on the menus that are also involved in the school meal program.

#### School environment

All the 52 primary schools (total 30.756 pupils) in Copenhagen offer organic food for sale during school hours, and the **teachers** are the main actors at the school level. Astrid Dahl explained that actually most primary schools in Copenhagen don’t have a canteen but a small tuck shop. So in the schools they don’t have eating facilities for the pupils. She assumed only 5 schools have eating facilities. The **school administrations** have assigned a teacher from their own school to the tuck shop, who will work together with some **pupils from the 6th grade** (13-14 years) to prepare and sell the school lunches. The **parents** can read about the school meals on the school website, including that the food is partly organic. It is also possible that they are informed about the green policies of Copenhagen as this has been much emphasized for many years. The parents can order food by the **school website** or give money to children to buy the food in the tuck shop.

#### Supply chain management

Astrid Dahl told that there is only one **public central kitchen** in Copenhagen to prepare lunches for all the 52 primary schools. This central kitchen was used to prepare food for elderly people, and was enlarged to cook school meals. A **coordinator** in the central kitchen decides the amount of food which

will be sent to different schools. Actually the schools can't choose if they want organic food, because this is from day to day the central kitchen's decision. The central kitchen has its own **food expert** who works on the menu. The **kitchen manager** in the central kitchen is in charge of the economy. The **organic suppliers** have to show the certifications to the kitchen manager.

### 5.2.2 The actors' network

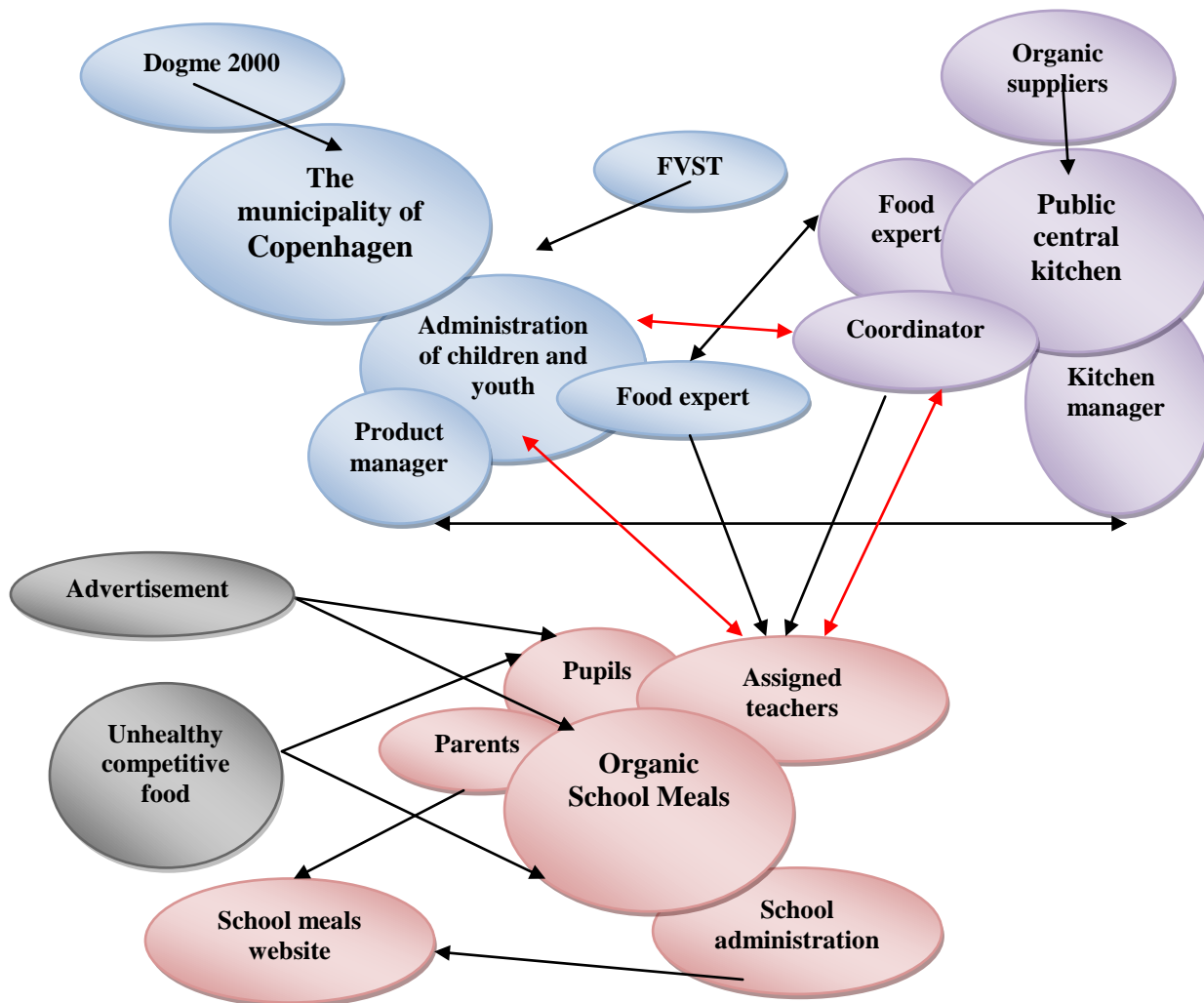


Figure 3. Involved actors in the organic school meal program in Copenhagen.

Astrid Dahl explained that currently they only have 50 % organic ingredients in the school meals, so they cannot advocate the use of organic food on posters or at the website. However, the schools can tell that organic food is included in the lunch meals. The Dogme project has decided to do more for the environment. (Dogme, 2000) The project aims to have 75% organic food by weight in every dish served or offered by the participating municipalities.

A professional food expert in the municipality of Copenhagen is responsible for teaching the assigned teachers how the school meal project works, how to operate professionally in the tuck shops and how to deal with hygiene aspects. The coordinator from the central kitchen is also part of the training programme. This person will mainly introduce how the school must cooperate with the central kitchen, such as to fill in the papers related to what and how much food they sell each day.

Each assigned teacher is trained every half year at the municipality, and it takes around four hours. The pupils who help with the lunch are trained by the assigned teachers at school. Generally they are trained during the 5th grade to work during the 6th grade. On the financial aspect, Astrid Dahl's



department supports the school meal project by paying for the training and teachers' working hours during the lunch break. The tuck shops in the schools have a very low budget, but receive some support from the municipality.

A practical example: Before lunch break, the assigned teacher comes to the tuck shop and prepares the sale, counts the sandwiches and puts them on the shelf, and then heats some sauce in the microwave oven, but only mixes sauce and rice/pasta when pupils buy it. The public central kitchen offers various foods so the pupils can choose either cold food like sandwiches or warm meals. Some primary schools sell a lot of food, especially schools that are not located close to shops selling fast food.

Astrid Dahl mentioned that the younger pupils' parents care more than older pupil's parents and some of them even call her and ask about the organic school meal project. For example, they wonder if their children can still eat if they are allergic. Astrid Dahl thinks that the schools should support the project by giving assigned teachers more time to work with the school meals, so that they would not only do the paper work but also find time to promote school meals among pupils.

The public central kitchen produces all the food and sends it out to the schools every day. The kitchen produces mainly warm meals with low fat and with organic ingredients. To avoid high intake of sugar, the pupils may only buy 2 boxes of yoghurt per day. The coordinator carefully measures how many meals of various type that are sent to the schools and how much gets returned, to reduce the waste in the long run.

The central kitchen decides the menu because they have their own food expert. According to Astrid Dahl, the municipality is responsible to lay down the principles of the menu. Sometimes the food expert in her department has some suggestions on the menus and of course they will look at it to check that the principles are respected. Once in a while, the product manager of the municipality meets the kitchen manager in the central kitchen, but they mostly talk about economics. The central kitchen has to buy certificated organic products, and that is why the organic suppliers have to show certifications to the kitchen manager before the purchase.

### **5.2.3 Barriers and future**

On average, only 20 % of the pupils buy the (partly) organic school meals that are served daily at the schools in Copenhagen municipality. This is well below the aim of the KØSS project, especially when this 20 % of food includes yoghurt, bread etc. The pupils have to pay for the meals, the lunch break is too short, and there is a lack of attractive eating places. Astrid Dahl explained that Copenhagen municipality just closed down the tuck shop in one school because there were not enough pupils buying the food. Actually the only customers were a few teachers. Among the older students it may be more popular to leave the school to eat than to use the tuck shop, because this implies the opportunity to be in a group without being controlled by adults, and maybe smoking.

The Copenhagen schools are not really responsible for the organic school meal service because this project is just an extra thing that the school has to do. Astrid Dahl discussed this fact, referring that the schools commonly think that the meals are a job that the city hall should take care of, so they don't pay much attention to it. Additionally there is no motivation for schools to promote the school meal programme among the pupils. Food not sold is returned to the central kitchen, and the school gets money in return. Hence, there is no economic incentive to increase the amount of food sold.

The assigned teachers responsible for the tuck shops find it quite stressing to have to register the returned dishes correctly in a paper. They need to get more working time allocated to this task. The working attitude of the pupils at the tuck shop is more or less affected by their teachers. If there is not a positive attitude from the teacher or the school, the pupils will be negative too.

Astrid Dahl believes that the pupils don't care much if it is organic or healthy food, or about environmental issues. Also the schools are not allowed to promote the organic issue due to the legislation from the Danish organic authority. For the moment, Astrid Dahl and her colleagues are looking at the new nutritional recommendations from FVST. They try to adjust the KØSS menu, but it is

quite hard when it comes to practice. For example, the guideline suggests the menu to include fish, but the pupils don't like to eat fish so the dishes are just returned. If school meals were free, the pupils might have been more interested to try them. Young people are usually very economic, and do not want to waste their money. Hence they prefer to buy the food they are familiar with instead of trying some new taste.

Equal to the municipality of Roskilde, the municipality of Copenhagen has not carried out any monitoring steps for the POP policy, and has no formal communications with other municipalities on the issues of organic school meals.

In the future, the municipality will run a new organic school meal program in all 52 primary schools in Copenhagen. In this new model, each school will be responsible for the sales of school meals. Astrid Dahl and her colleagues will also try to integrate the KØSS project better in the school society, making the teachers more motivated, and the meals and serving more attractive to older pupils. However, this is a really ambitious project, Astrid Dahl said.

### 5.3 Organic school meal program in Gladsaxe municipality

The municipality of Gladsaxe is one of the school meal precursors in Denmark. The interview was held with a health consultant, Teresa Dominicussen, in the administration of children and culture in the municipality of Gladsaxe (Appendix D). Teresa D. has worked within this position for one year, and her main job is to take care of the health for children in Gladsaxe municipality. She used to work in Bagsvær primary school, which was the first school in Gladsaxe to build a big kitchen to make real school meals. Teresa D. has lots of experiences with school meals, and now her project is to help the Gladsaxe schools to build more school kitchens.

#### 5.3.1 *Involved actors*

##### **Policy environment**

So far the school meals in Gladsaxe do not include much organic ingredients. Teresa D. estimated the organic share to be only 15%. There is no POP policy yet, but Gladsaxe has a FNP, and it has been operated for a year. Teresa D. and her colleague represent the **administration of children and culture**. They will give the first idea about the project they would like to develop to the **health department** in the municipality. The **politicians in Gladsaxe** decide whether the policy or project will be carried out finally, since they support financially. Teresa D. mentioned that she helped **DFVF** (Danish Institute for Food and Veterinary Research) to revise the national nutritional guidelines, because she has many practical experiences with school meals. Moreover, she works also with some Danish industries through the **Food Lab** project (Food Lab, 2008) in order to develop new products, such as **Arla Foods** and **Rynkeby Company**. Currently the school meals have just a few organic ingredients, but Teresa D. works to increase the organic share in the school meal service.

##### **School environment**

Most of the schools in Gladsaxe have a school kitchen and their own "**Dinner Lady**". The dinner lady is in charge of everything in the school kitchen, and she also hands in the payment of the school meals to the **school administration leader**. When the school hires a dinner lady, both the school administration leader and the **school headmaster** will join the interview. The **teachers** are responsible for the **nutritional education** for the **pupils**. Teresa D. explained that in the Gladsaxe schools the headmaster, dinner lady and even **school nurse** know about FNP. They also spread the policy among the **parents** of pupils through the school parties. However, Teresa D. also mentioned, they still have two schools that do not yet have their own kitchen.

##### **Supply chain management**

Most of the schools in Gladsaxe prepare food by themselves, so catering companies and public kitchens are not any relevant issue here. The dinner ladies buy the school food themselves from **suppliers** or **supermarkets**. The two schools that don't have their own kitchen yet get food from a **private catering company**.

### 5.3.2 The actors' network

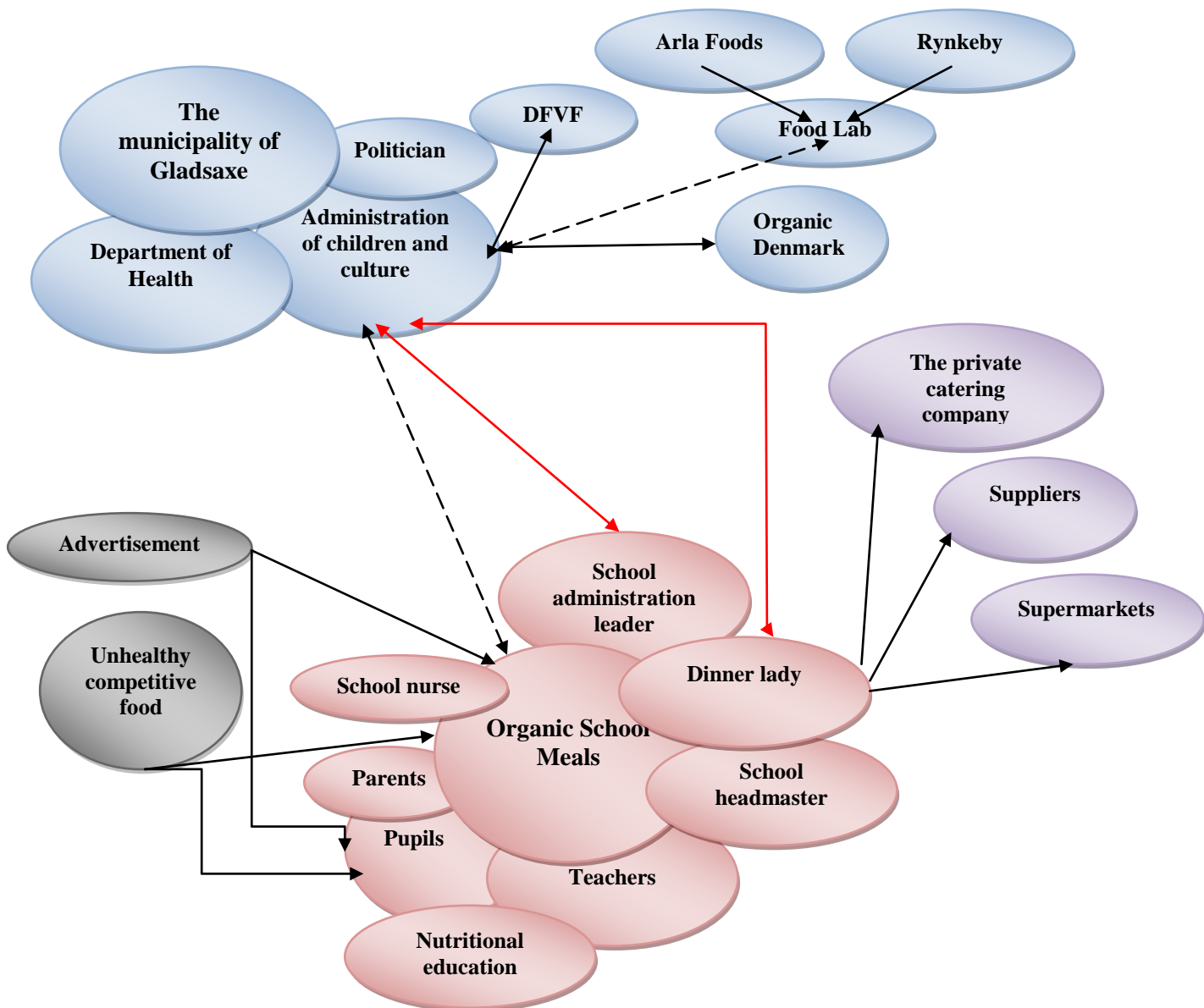


Figure 4. Involved actors in the organic school meal program in Gladsaxe.

In the municipality of Gladsaxe, the initial motivation for the implementation of the school meal program was that more and more pupils don't have lunch during the school time. Especially the older pupils get up late and hurry to school, so they don't prepare any lunchbox at home. During lunch time, they would like to stay in a group to smoke or buy some fast food. The health issue is certainly also a motivation, Teresa D. said. The situation in Gladsaxe is now getting better since the school meal program has been running for 5 years. 14 of 16 (total 6.348 pupils) the schools in Gladsaxe have their own kitchens and prepare the lunch for pupils. Some of the kitchens are still old but the municipality is going to build new kitchens in all schools in the future.

As mentioned, the municipality of Gladsaxe has not established a POP policy, but the main actors in the schools know about the municipal FNP. However, the process of adopting the FNP was not so easy. Firstly, the health department in the municipality handed out the project to Teresa D. and her colleagues, because they knew more about the schools. Then they needed to present their first ideas and also make budget estimations for the health department. Afterwards they had to discuss it with the politicians, because they are the decision makers and give the financial support. The politicians were positive and then Teresa D. and her colleague sent the project idea to the schools. Some schools agreed to the idea, others were negative. After receiving many comments and suggestions from the

schools, they made a concluding report and gave it to the politicians. Finally, the politicians decided to carry out this project. Teresa D. and her colleague spent half a year on writing the FNP and starting the implementation, from January 2007. The project has not only been to develop and accomplish the FNP, but also to develop recipes. Different seasons have different recipes. Teresa D. explained that they classified the food by seasons.

The dinner ladies will buy or cook food according to the recipes in the FNP. For example with respect to bread, Teresa D. tells the dinner ladies that it has to provide 6g fiber per100g. Then the dinner ladies either must buy bread according to this standard, or make it in accordance with the recipe.

The number of dinner ladies per school depends on the amount of pupils. Normally bigger schools have two dinner ladies and smaller have one. The dinner lady is a crucial actor in the school meal service. These people buy food from supplies or supermarket, they cook, they sell meals, and they also do the cleaning. They collecting the payment from the pupils and give it to the school administration leader every day. The dinner ladies even design the menu according to the guideline, because they know how much vegetables the pupils normally eat for lunch. Teresa D. looks at the menus and suggests changes if required.

Teresa D. mentioned that the school administration leaders were drawn more into the school meal service about two years ago, because it was a lack of contact between them and the dinner ladies. Most of them don't use email. Hence, the municipality (Teresa D.) teaches these leaders how to administer the school kitchens. If they or the dinner ladies have any problems or questions, the school administration leader can reach Teresa D. by phone or email. At the beginning of the month, Teresa D. will assign the task of school food to the schools. The school administration leader makes a monthly report regarding how the school meals were appreciated this month, and may also give some suggestions.

The municipality is responsible for the payment and teaching of the dinner ladies. In the past, the dinner ladies hired by the schools were housewives with no professional food education. Now the municipality actually asks some of them to stop, because they are too old-fashioned to fit with the new school meal program. Teresa D. discussed that today they employ more dinner ladies with education, or in the bigger schools, one old dinner lady works together with a new dinner lady.

Teresa D. and her colleague take care of training practices and they have a handbook as guideline about how to arrange the kitchen, how to buy food and what to buy, how to make a recipe, etc. As the schools employ dinner ladies they usually prefer to invite Teresa D. to the interviews. Each year Teresa D. has four meetings with the school administration leaders and the dinner ladies.

Danish schools teach a subject called home economics. The Gladsaxe schools promote this subject more or less as a nutritional education. The teachers still teach cooking but are also focussed on teaching about health. Teresa D. explained that the pupils in Værebroskole School cook food for all pupils and school staff daily. The pupils in one class are divided into three groups, and each class works for three weeks per year with the cooking tasks. The teachers teach the pupils how to cook the meals and also about hygiene issues. This is a good way to engage the pupils and the teachers in the school meal program.

Teresa D. mentioned that they also teach the schools to communicate with the parents. Before, most parents tended to believe that school meals were rather bad, and did not want their children to eat them. Since the schools have increased their information through newspapers, school websites and the school balls, the parents are more positive now, especially the schools that are really emphasizing the meal service like the Værebroskole School.

One part of the cooperation with some Danish industries such as Arla Foods and Rynkeby has been to develop better products. For instance, most yoghurt has a high content of fat and sugar, and Arla Foods has tested new and healthier yoghurt in some of the schools in Gladsaxe. Hopefully this new product will be on the market in the near future.

A large NGO called Organic Denmark (Økologisk Landsforening) is actively promoting organic school meals, and has offered to inform about organic food in the schools. They would also like to talk with the dinner ladies, the teachers and the pupils in Gladsaxe about how to use organic food. It is discussed that Økologisk Landsforening and Gladsaxe municipality can run a project together to promote the organic meal program in each school. Teresa D. and her colleague have also helped DFVF revise the national health guidelines. During this work, people at DFVF discussed with some of the dinner ladies in Gladsaxe about their practical experiences.

### 5.3.3 *Barriers and future*

In the municipality of Gladsaxe the only regulation concerned with organic food is to use the organic food where this is possible. Currently an organic share in the school meals of about 15 % is achieved by using organic dry products such as flour and pasta, but also carrots, potatoes and some milk. The pupils are mostly not willing to pay more for organic food normally; children care more about the taste and look of the food, than the health or environmental issues. Gladsaxe aims at increasing the share of organic food, and Teresa D. thinks they may have POP policy in 2009. So far, a general FNP is more focussed. It is difficult to implement more policies at the same time, it is better to carry out one policy at the time, step by step. Hence, Teresa D. explained that they have not yet paid much attention to the organic share, partly because there is currently no extra money for organic food. Actually they would rather use more money on training of the dinner ladies.

Another reason for the low organic share is that the dinner ladies are not used to organic products, and then it is really hard for them to learn how to make an organic meal. For instance if there is a fixed organic share to achieve, e.g. 15 %, how will they make a dish with organic ingredients? How many percent of the organic potato, meat or vegetables should be in the dish to achieve the share? Can they use a bit more conventional butter than originally planned if they need to, etc?

In spite of all the efforts done by the municipality to ensure nice school meals, on average only 25 % of the pupils in the Gladsaxe schools buy the school meals. Teresa D. considers the situation to be that in fact, the municipality actually doesn't want the lunchbox to disappear. The aim of the school meal program is rather to serve the pupils who don't bring lunchboxes. The municipality is reluctant to take over the responsibility of children's food from the parents.

Teresa D. thinks that the most difficult part is to make one policy (FNP) running smoothly in all the schools. Some schools have a big kitchen, others have a small one. Some recipes can't be used in the small kitchens, and some dinner ladies were not able to understand the policy. It is hard to command people to follow a policy if they are not motivated, and motivation is very dependent on people's personality and values.

Since Gladsaxe made this policy and presented it on the internet, lots of other municipalities want to know more about it, and some want to visit the schools. Teresa D. and her colleague try to respond as much as they can, but this is hard because they are already busy. However, this is one reason why they participate in the Food Lab, to share their experiences. Teresa D. thinks that if the government gives a central statement and enough support for the school meal program, the school meals will become more popular in Denmark, since a lot of people actually want them.

In the future, the municipality is going to build new kitchens in all the schools in Gladsaxe, and hire more dinner ladies with high education, so that they can design the menu by themselves. Maybe they can also teach the pupils about health and nutrition. The municipality also plans to let more pupils help with the cooking. Teresa D. mentioned that they want to create a school meal credit card, through cooperation with the national credit card center. It is embarrassing for the children from poor families who can't afford the school lunch if they are the only ones having such a card. A card for everybody, that some children get for free and others pay for, may be a good solution.

## 6. Discussion

### 6.1 A comparison of the organic school meal system in three municipalities

The most important similarities and differences among the organic school meal programs in the three municipalities are shown in Table 2. Even though the schools in these three municipalities already have offered organic school meals for a few years, the meals are still not as popular and widely used as expected.

**Table 2 Comparison of the involvement of actors in the organic school meal systems in Roskilde, Copenhagen and Gladsaxe.**

Organic school meals		Roskilde	Copenhagen	Gladsaxe
Policy level	POP policy	☺	☺	☹
	FNP	☺	☺	☺
School level	Coordinator/administrator	☺	-	☺
	Kitchen operator/dinner lady	-	-	☺
	Teachers	☹	☺	☺
	Pupils	☹	☹	☹
	Parents	☹	☹	☹
	Nutritional education	☹	☹	☺
Prepared school meals layout	Public kitchen	-	☺	-
	Catering company	☺	-	-
	School site kitchen	-	-	☺

☺ Effectively involved in the organic school meal program

☹ Not effectively involved in the organic school meal program

In Roskilde, POP and FNP are not well-known among teachers, pupils and parents. The school meals in Roskilde have the highest organic ingredient (92%) content involved. This is pretty closed to the 95% standard rules required by the Danish national certification system (Danish organic certification system, 2009). A certification of the Roskilde school meals would contribute to highlight the school meals programme in this municipality. The public authorities should do an effort to explain to the parents the organic policy behind the school meals, and try to convince them from a nutritional and environmental viewpoint. As shown by the large consumer demand and increasing market for organic products, there are plenty of Danes who really care about the environment and animal welfare.

Additionally, Roskilde municipality should realize the importance of nutritional education at schools and develop parts of the organic school meal policy in order to promote the health of children, which is the issue they care most about.

The municipality of Roskilde has established a good supply chain in the school meal service. The private central kitchen takes care of everything such as the menu, organic ingredients in the dishes and all nutritional issues concerned, but they need to produce some written documentation for the monitoring steps linked to the school meals. This shortcoming also exists in the Copenhagen and Gladsaxe school meal service systems. Just like the school administrators and “dinner ladies” in Gladsaxe schools, the school coordinators in the schools of Roskilde also have a demand for training courses, so the municipality should arrange such training in order to obtain full knowledge regarding how to arrange the school meals for the pupils.

Differing from Roskilde and Gladsaxe, the school administrator in Copenhagen is always a teacher from the local school. As described earlier, they are not only meal coordinators but also responsible for selling the school meals. This is an effective way to get teachers involved in the school meal program. On the other hand, it is a challenge that these teachers are not given enough time resources for this task. The schools should take over more responsibility for the meals. The organic school meals should not be regarded as something just between the municipality and central kitchen; on the contrary, the schools should play a vital role in it. The municipality has developed the policy, the central kitchen carries out the practices, and so the schools should act as promoters and implement the policy. They should try to catch all the inherent opportunities to introduce the organic issues and school meals to the parents and pupils, and try to motivate more pupils to eat in school.

Although some pupils help with the selling at tuck shops at schools in Copenhagen, there are still not many school meals sold. In all three municipalities, around only a quarter of the pupils have organic school meals daily. This is not impressive, as compared to the amount of work put into the programs by the municipalities, kitchen workers and school staff.

The municipality of Gladsaxe invests many resources to provide all schools with their own kitchens and eating facilities for the pupils. A proper school kitchen with a cozy eating environment will attract more pupils than tuck shops. The kitchen also offers pleasant working conditions for the dinner ladies. Food delivered from a central kitchen may get cold or lose nutrients by reheating. Cooking at the school site will provide healthier warm meals, less waste and more flexible serving practices. In Gladsaxe, the FNP is spread throughout the schools, and even introduced to the parents. The nutritional education makes the pupils more aware of health and brings more pupils to buy the meals as compared to a few years ago. However, the municipality of Gladsaxe has the lowest share of organic ingredients among these three municipalities, who all are examples of Danish municipalities that have really made big efforts to introduce (organic) school meals for their pupils.

In the schools in Gladsaxe, both the school meal administrator and dinner ladies are working together with the municipality in a school meal’s board. In this board, the schools and the municipality share and distribute work, but schools can also share their ideas with other schools. Such a school meal board is a very important part of the school meals program because it connects policy, school and supply chain levels together, and should be organized also in other municipalities.

## 6.2 Organic food intervention in the school meals

School meal dishes for sale are a new concept in Danish schools, and organic food is an even newer issue. Hence, organic school meals are a big challenge in any school’s daily life. From these case studies, we can see that all three municipalities more or less have a fixed share of organic food in the school food provision. Roskilde and Copenhagen municipalities have involved organic food right from the beginning of their school meal programs. Even though they have adopted the POP policy for some years, the issue of organic food in the school meals is not widely spread in the school environment, and not either outside (among the parents). In other words, young consumers don’t know that there are organic ingredients in the school meals, so the provision of conventional school meals & organic school meals means no difference for them. On the other hand, when so little attention is paid to the food

being (partly) organic, it will be hard to study effects that organic food interventions in school meals may have, for instance to improve healthy eating habits among the youth.

One reason that the schools don't promote organic issues might be that organic is more acknowledged for being environmentally friendly than for positive health effects, and the environmental benefits of organic food is not that directly related to food serving to the pupils as an acknowledged health benefit would be. Another reason is that the standard requirement that 95% of a whole dish has to be composed of organic ingredients to use the term organic in the information about the food serving limits the schools' attempt to advocate the organic issue. Generally organic products, school meals included, are more expensive than conventional products. The three municipalities don't offer school food for free, but they try hard to keep reasonable prices. In spite of cheap meals, though, most pupils still prefer to bring their lunchboxes than to buy the meals. That there is a price to pay at all is likely one of main reasons why few pupils eat the school meals, but this should be further studied.



## 7. Conclusion

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The purpose of this study was to take a closer look into the current status of the organic school meal program in three Danish municipalities that have used much time and resources for these programs, with quite different approaches. What can we learn from the case studies? The study showed that the current status of organic school meals is not very positive in any of the municipalities, if it comes to the volume of organic food consumed. The traditional lunchbox has shaped the eating style of Danish school children for a very long time, and is likely to be the main barrier to increase the utilization of the organic school meals among the pupils in all three municipalities. As this is a main barrier in three municipalities that have really tried hard to implement a school meal service, it is likely to be a main barrier also in other Danish municipalities. Another important reason, according to the interviewed informants, is probably that the (partly) organic school meals are not free of charge. Further, all the informants explained to us that schools don't take enough responsibilities for the lunch meals, even if these matters seemed to be better handled in Gladsaxe than in the other municipalities. The schools should do more to promote organic school meals among pupils, teachers and parents. Finally, it is a pity that these experienced municipalities don't make much effort to inform other municipalities about their knowledge. When each single municipality works alone on such issues, the work gets less efficient. A national fund where municipalities could apply for some money to inform about their experiences and establish a network could have been a good solution to this.

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# Appendix A: Interview guideline

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## 1. Interview information

The main aim of the interview is to test questionnaire and acquire your recommendations or comments on it in order to obtain eventually an ideal web-based questionnaire. Based on the questionnaire, according to your job experiences, we also would like to ask you some questions about school meal system in your region. The whole interview is mainly divided into 3 parts, general questions, **Public Organic food Procurement (POP) policy**, and **Food and Nutrition policy (FNP)**.

**Interviewee:** (include name, title of job, organisation and address)

**Interviewer:** Chen He

**Interview date:** dd-mm-yyyy

**Interview place:** (probably interviewee`s office)

**Interview type:** one to one interview

**Interview time:** 45mins

## 2. Interview questions

### 2.1 General questions

- Please describe your job function and main responsibilities, currently working task.
- Do you have an overview of how many schools have lunch meal systems based on hot/warm prepared meals in your region? Where are the meals produced (on school site or centrally?) If the school meals prepare centrally, do you still have a school kitchen site and staff? Who are the staffs? Who hire them? Is the staffs trained? How many of the school use organic ingredients? What is the percentage of organic ingredients? (Approximately).
- What are the drivers/motivations for the implementation of (organic) school meal systems? (e.g. health, environmental consideration, a service to the pupils and their parents etc)

### 2.2 POP policy

*Definition of POP policy: Refer to a policy in which a specified amount of ingredients are organic according to EU-regulations and which are practiced in public organizations serving food.*

- How many years have POP policy been in operation since it was adopted?
- How long time did it take to implement? (Could you describe how it was adopted)
- Who was the key actor during adoption process? In other words, who decided? Who is the person responsible for carrying out POP policy? (by municipal government, by school board or other external promoters and internal promoters or key actor) Are you the same department as the key actor?
- Could you describe how it was implemented? (municipal support, consultant support, no support)
- Can you mention some characteristic problems that schools deal with during the implementation and operating of an organic lunch meal system? What is the main barrier now?
- Do you have a suggestion as to how these problems can be solved?
- Do the teacher, pupils and parents know the POP policy? What is teacher role in the POP policy? Do they learn nutritional education to the pupils?
- From your point of view, how to achieve an effective POP policy on a local level?
- What do you think of national level decision to organic food consumption affect on local level? And why?
- Who decide the menu? How do you know if the menu reaches your expectation?
- How is the ratio between pupils who eat at schools or don not eat at schools? (If a big difference, why the parents would rather pack lunchbox than pay school meals for children?)

- Do you have any monitoring steps for POP policy? How they are exactly implemented? (Are the monitoring based on estimates and if so from whom? Or on exact date from invoices etc? How are monitoring data used (reports, statistics)
- Is the food serving outlets using organic produce subject to certification? If so how are certification done?
- Are organic wholesalers locally or internationally?

### 2.3 FNP

*Definition of FNP: A set of principles to provide nutritional needs of pupils at schools and ensure availability and accessibility of healthy foods.*

- Do you have a FNP in the schools?
- If you have FNP, is it written?
- Do you have FNP before start offering organic food?
- How many years have FNP been in operation since adopted?
- Could you describe the policy making in relation to your FNP?
- Who had the main role during adoption process? In other words, who decided? Who is the person responsible for carrying out FNP? Is the same actor as POP policy?
- Could you describe the content of FNP? (e.g. general or specific)
- Do the teacher, pupils and parents know the FNP policy?
- Do you think that POP policy and FNP are working together conduce to healthy and sustainable eating in public food system?
- In your opinion has the healthiness of the school meal offer changed after your implemented a FNP, in what direction?
- How about eating facilities at schools? Music around, long line waiting or eat in a group?
- Do you have vending machine at schools? What can sell by vending machine?
- What is the attitude of pupils for the POP policy and FNP or school meals service? Are they happy with the offer?

### 2.4 Extension questions

- What is your or your institution future plan for organic school meals?
- Do your institutions communicate with other institutions or municipalities in order to promote school meals system together? If no, why?
- Why school meals system in DK is not common?
- Would you like to be anonymous in the report?

# Appendix B: Transcription of interview 1

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## 1. Interview information

The main aim of the interview is to test questionnaire and acquire your recommendations or comments on it in order to obtain eventually an ideal web-based questionnaire before we perform in Norway, Finland and Italy. Based on the questionnaire, according to your job experiences, we also would like to ask you some questions about school meal system in your region. The whole interview is mainly divided into 3 parts, general questions, **Public Organic food Procurement (POP) policy**, and **Food and Nutrition policy (FNP)**.

**Interviewee:** (Mads-Peter Klink Engelhardt, manager assistant in school and children administration in the municipality of Roskilde)

**Interviewer:** Chen He

**Interview date:** 20-11-2007

**Interview place:** (Ringstedgade 16, 4000 Roskilde)

**Interview type:** one to one interview

**Interview time:** 45mins

## 2. Interview questions

### 2.1 General questions

- Please describe your job function and main responsibilities, currently working task.  
I am an assistant to the management of administration of child care and school and so on. One of main projects is food policy and service.
- Do you have an overview of how many schools have lunch meal systems based on hot/warm prepared meals in your region?  
We have 19 primary schools in the Roskilde region and 10 of these schools have warm meals.
- Where are the meals produced (on school site or centrally?)  
We have a contract with an externally place where they make the food. But the schools cook a bit, so the food come to school a bit prepared. And the schools have their own kitchen and heat up mainly.
- How many of the school use organic ingredients? What is the percentage of organic ingredients? (Approximately).  
All of them are mainly using organic ingredient and percentage is 92%.
- What are the drivers/motivations for the implementation of (organic) school meal systems? (e.g. health, environmental consideration, a service to the pupils and their parents etc)  
Health care is the mainly motivation. Back to 2002, politicians decided to have organic food involved in the school meals.

### 2.2 POP policy

*Definition of POP policy: Refer to a policy in which a specified amount of ingredients are organic according to EU-regulations and which are practised in public organisations serving food.*

- How many years have POP policy been in operation since it was adopted?  
6 years
- How long time did it take to implement? (Could you describe how it was adopted)  
Don't know. This was politicians` decision.
- Who was the key actor during adoption process? In other words, who decided? Who is the person responsible for carrying out POP policy? (by municipal government, by school board or other external promoters and internal promoters or key actor)

The City council in Roskilde decided to adopt it. They are responsible for all affairs in Roskilde. They are a team working together. They are the decision makers. Financial support is from my department.

- Could you describe how it was implemented? (municipal support, consultant support, no support)  
They don't inform pupils that they have organic food in the lunch because this is not main object for the school meal. The main objective is to serve meals and secondly is to ecological.
- Can you mention some characteristic problems that schools deal with during the implementation and operating of an organic lunch meal system?  
The person who is working on the school meals in the school environment is not well-educated/experiences with food background. School administration is responsible for hiring this person. The other reason is financial problem, because one kitchen cost already 1-2 million kroner. This is something deal with tax.
- Do you have a suggestion as to how these problems can be solved?  
The suggestion is to educate this person, and this is also responsibility for the municipality.
- Do the teacher, pupils and parents know the POP policy? What is teacher role in the POP policy? Do they learn nutritional education to the pupils?  
No, they don't know.
- Who decide the menu? How do you know if the menu reaches your expectation?  
A local private catering company decided the menu, and only one catering company in Roskilde. You can't have unhealthy food in the school, only can serve healthy food. Most schools don't have vending machines but it is not mandatory.
- How is the ratio between pupils who eat at schools or don not eat at schools? (If a big difference, why the parents would rather pack lunchbox than pay school meals for children?)  
Around 5%-25% pupils eat at schools daily. The main reason is that the school meals are not free of charge. It costs 15-20 kroner for one dish. This was quite stable percentage over the last 6 years.
- Do you have any monitoring steps for POP policy? How they are exactly implemented? (Are the monitoring based on estimates and if so from whom? Or on exact date from invoices etc? How are monitoring data used (reports, statistics)  
No, we don't have any monitoring steps, just based on trust.
- Is the food serving outlets using organic produce subject to certification? If so how are certification done?  
This catering company is only deal with organic food, so the company is the certification.
- Are organic wholesalers locally or internationally?  
Organic food is coming from local companies or also partly from international company in winter.

### 2.3 FNP

*Definition of FNP: A set of principles to providing nutritional needs of pupils at schools and ensure availability and accessibility of healthy foods.*

- Do you have a FNP in the schools?  
Yes.
- If you have FNP, is it written?  
This is processing now.
- Who had the main role during adoption process? In other words, who decided? Who is the person responsible for carrying out FNP? Is the same actor as POP policy?  
As the same as POP policy, which is the city council.
- Could you describe the content of FNP? (e.g. general or specific)  
Fat content has to be max 30% in one dish. The catering company decided the menu and city hall promoted to the schools. The nutritionist is from this catering company. We don't evaluate the menu and just depend on the oral trust.
- Do the teacher, pupils and parents know the FNP policy?

No, they don't know.

- Do you think that POP policy and FNP are working together conduce to healthy and sustainable eating in public food system?

Yes, I think so.

#### 2.4 Extension questions

- What is your or your institution future plan for organic school meals?

We are going to offer rest 9 schools with organic lunch meals.

- Do your institutions communicate with other institutions or municipalities in order to promote school meals system together? If no, why?

We don't promote the policy to other city councils because this is just local responsibility.

- Why school meals system in DK is not common?

It is traditional thing don't school meals. On the other hand, children are also happy with school meals. If the meals are free, there probably will have a lot of pupils to eat the school meals.

- Would you like to be anonymous in the report?

I don't mind.



# Appendix C: Transcription of interview 2

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## 1. Interview information

The main aim of the interview is to test questionnaire and acquire your recommendations or comments on it in order to obtain eventually an ideal web-based questionnaire before we perform in Norway, Finland and Italy. Based on the questionnaire, according to your job experiences, we also would like to ask you some questions about school meal system in your region. The whole interview is mainly divided into 3 parts, general questions, **Public Organic food Procurement (POP) policy**, and **Food and Nutrition policy (FNP)**.

**Interviewee:** (Astrid Dahl, project assistant in children and young people administration, department of sustainable development in the municipality of Copenhagen.)

**Interviewer:** Chen He

**Interview date:** 28-11-2007

**Interview place:** (Island brygge 37, 2300 Copenhagen)

**Interview type:** one to one interview

**Interview time:** 1.30 hours

## 2. Interview questions

### 2.1 General questions

- Please describe your job function and main responsibilities, currently working task.  
I just started to work in august this year. I am a project assistant but I have my own working package. We have only 3 people and we have meeting on Monday morning and have to discuss what we should do this week. In general, we are doing the administration work of school meals programme. We made some material and some information for the pupils' parents regarding the school meals and it usually 3 times a year, also change menu, and make new poster, a lot of work on it. Then follow the nutritional guideline and this is becoming strict. This nutritional guideline which made by DFVF is very in details, such as this food item that can be offered or not. You can't add this, etc. What the menu should be. But this is not mandatory policy.
- Do you have an overview of how many schools have lunch meal systems based on hot/warm prepared meals in your region?  
There are 52 primary schools and up to 10<sup>th</sup> grade. They all offer both cold and warm meals. The pupils can choose sandwich or warm meal. The kitchen works a lot on warm meals, such as not fat or less fat, but the pupils may only choose 2 yoghurts.
- Where are the meals produced (on school site or centrally?)  
We have only one central kitchen for 52 schools, and one coordinator, and the kitchen produces all the food and sends out to the school every school day. One lesson before lunch break one teacher comes and prepares the sell. The teacher counts the sandwich and puts on the shelf, then starts to heat some source in the small cup, but only mix it with rice or pasta when the pupils buy it. The coordinator decides how much school meal should send to this school or that school.
- If the school meals prepare centrally, do you still have a school kitchen site and staff?  
It is no cooking at all, and no canteen on school site.
- Who are the staffs?  
Pupils and teachers from 6<sup>th</sup> grade are working in the tuck shop of schools. This is a very small tuck shop with 1 or 2 microwaves.
- Who hire them? Is the staffs trained?

The schools hire their own teachers. The teachers are trained by the municipality, which train them how to deal with hygiene. Someone educated with food background in the municipality will train the teachers about how the school meals programme works and how to fill some paper work, such as how much they sold today. The training course is only one time and it takes 4 hours, and the municipality paid as supplement. The municipality is also paying for teachers who working during the lunch time. It is about an hour. New model of school meals programme will substitute the old one in one year. The coordinator from the central kitchen is also part of training, such as tell more details about how to fill the paper.

- How many of the school use organic ingredients? What is the percentage of organic ingredients? (Approximately).  
The schools can't decide if they have organic food in the school meals. The authority asks you to prove the 95% food have to be organic. If you can't prove 95%, you can't say that this is organic food, can't put the mark on the poster. We have only 50% organic food involved, but you can mention you have organic food in the meals. We are also part of another cooperation which is Dogme2000. Based on agenda 21, the municipality decided to do more for environment. We decided to have 75% organic ingredient in one dish, this is based on the weight you buy the product. 95% organic rule is made by the national certification system. But this 95% organic food is not only to do with school meals, but with all organic food in DK.
- What are the drivers/motivations for the implementation of (organic) school meal systems? (e.g. health, environmental consideration, a service to the pupils and their parents etc)  
At the beginning it is something like an aim, because the Dogme2000. Then we would like to get healthier children as well, because some kids don't have breakfast so that they can't concentrate in the school and worse leaning ability. But mainly motivation is Dogme2000, which is mainly for environmental issue.

## 2.2 POP policy

*Definition of POP policy: Refer to a policy in which a specified amount of ingredients are organic according to EU-regulations and which are practised in public organisations serving food.*

- How many years have POP policy been in operation since it was adopted?  
I don't know. Maybe it was from 2000. Last 7 years were not so successful, therefore, we are going to change a new model but more expensive school meals.
- How long time did it take to implement? (Could you describe how it was adopted)  
I don't know. It is not my department.
- Who was the key actor during adoption process? In other words, who decided? Who is the person responsible for carrying out POP policy? (by municipal government, by school board or other external promoters and internal promoters or key actor) Are you the same department as the key actor?  
I don't know.
- Could you describe how it was implemented? (municipal support, consultant support, no support)  
The children pay for lunch, and the municipality pay for teacher who is working during the lunch. The municipality support this project. Tuck shop in the school is very low budget and support also from the municipality. The schools should give the teachers more time for doing this project. The children also have to learn from the teacher who trained by the municipality. The food that can't be sold can return to the central kitchen but the teachers have to register in the paper. Sometimes the teachers are stress so they may register wrong information. So the municipality have to pay more than they have to pay. They suggest that the pupils should be trained at 5<sup>th</sup> grade in order to work at 6<sup>th</sup> grade. They can learn how to work together as a team; also learn to be polite and responsible. This is a good thing for the pupils. But also if it is not positive attitude from the teacher and school, children will be negative as well. We just closed one school because the older pupils would rather leave school to eat or being a group

and smoke together than eat at the school. So there is not enough young consumers, actually only the teachers bought the meals.

- Can you mention some characteristic problems that schools deal with during the implementation and operating of an organic lunch meal system? What is the main barrier now?  
In the school the pupils may not know that it is organic food. The pupils don't care if this is organic or healthy food or good for the environment. We are not allowed to promote organic aspect either due to the 95% law. We can't say that this is organic school food. School meals are a new thing and a big challenge. It is not part of Danish culture that has a school meal. The traditional way still affects a lot. The schools are not really responsible for the school meals service, because they think this project is just an extra thing for them. They think this is something that the municipality should take care, so they don't put much energy on it. But new system will make each school to be responsible. Now there is no motivation for school to promote the school meals among the pupils. The schools just think if the pupils don't buy the food, they can send it back to the central kitchen and get money back. Only the teacher self who is work in the tuck shop is responsible for it.
- Do you have a suggestion as to how these problems can be solved?  
We have to train the employees, right person who standing in the tuck shop. Besides, we have to let more and more parents to know.
- Do the teacher, pupils and parents know the POP policy? What is teacher role in the POP policy? Do they learn nutritional education to the pupils?  
The parents can read from the website of school meal. They can read about organic issues. They might know about it, and they can order the food for their children through the internet or give money to children. Some parents care about our school meals, and some even called and asked about school meals. I think the younger pupils' parents care more than the older pupils' parents.
- Who decide the menu? How do you know if the menu reaches your expectation?  
The central kitchen decides the menu. We have some suggestions sometimes since we have a food expert here. Right now we are looking at new recommendations from DFVF. How can we try to adjust our menu? It is quite hard, for example, if the guideline suggest we should sell fish to the pupils, but the pupils don't like to eat fish so the dishes have to be returned. So we sell but none buy. If the school meals are free, there may be more children would like to try it. But now the pupils don't feel like to try it, they want to buy the thing they know they like it, in other words, they don't want to waste money. The central kitchen used to prepare food for old people. They built more capacity in order to cook the school meals. The central kitchen has own food expert. We are responsible for the principle, and the central kitchen carries it out. Of course they communicate about the menu with the municipality. The food expert in the municipality will look at it according to the principal. We have a product manager who meet the manager in the central kitchen, but they mostly talk about the economies.
- How is the ratio between pupils who eat at schools or don not eat at schools? (If a big difference, why the parents would rather pack lunchbox than pay school meals for children?)  
It is around 20%. These 20% pupils choose the foods which are also including yoghurt, bread etc. They have to pay for the food, and the schools give too short lunch break, moreover, there are no eating facilities. Only 5 schools have facilities. This has been a tradition in DK to have lunch in classrooms. The tradition is the first, paying is the second. It may be better if there is an eating place and cosy atmosphere. But the schools in Copenhagen have too little space to have canteen.
- Do you have any monitoring steps for POP policy? How they are exactly implemented? (Are the monitoring based on estimates and if so from whom? Or on exact date from invoices etc? How are monitoring data used (reports, statistics)  
No, we don't have. Once a while we measure how much organic we have, it is not really involved in the programme.

- Is the food serving outlets using organic produce subject to certification? If so how are certification done?  
Yes. The central kitchen has to buy the certificated organic products. The organic suppliers have to show the certifications to the kitchen manager in the central kitchen.
- Are organic wholesalers locally or internationally?  
I don't know.

### 2.3 FNP

*Definition of FNP: A set of principles to providing nutritional needs of pupils at schools and ensure availability and accessibility of healthy foods.*

- Do you have a FNP in the schools?  
Yes.
- If you have FNP, is it written?  
Yes. We update once a year.
- Do you have FNP before start offering organic food?  
I don't know. Maybe the FNP was after POP policy.
- How many years have FNP been in operation since adopted?  
Maybe also 5 years.
- Could you describe the policy making in relation to your FNP?  
I don't know.
- Who had the main role during adoption process? In other words, who decided? Who is the person responsible for carrying out FNP? Is the same actor as POP policy?  
I don't know. It is maybe the project manager or assistant.
- Could you describe the content of FNP? (e.g. general or specific)  
The central kitchen knows more about it, such as reduce fat, sweets and so on.
- Do the teacher, pupils and parents know the FNP policy?  
No, I am not sure. Maybe they know. We put this on the website.
- In your opinion has the healthiness of the school meal offer changed after your implemented a FNP, in what direction?  
We can't offer unhealthy food, so even a burger has to be a healthy burger. But you can discuss what health is.
- Do you have vending machine at schools? What can sell by vending machine? No, we don't have it. But I don't know if it is allow or forbidden. We sell some healthy snacks, such as fruit, nuts and some small carrots at schools, but not many pupils buy it, because it is not a common for pupils to buy at schools.
- What is the attitude of pupils for the POP policy and FNP or school meals service? Are they happy with the offer?  
Some of the schools sell a lot of food because the school don't have any fast food shops around, or the pupils are from upper classes families.

### 2.4 Extension questions

- What is your or your institution future plan for organic school meals?  
We plan to make it better and try to integrate much more with the schools, so that make them more responsible for school meals. We are going to get more the older pupils to eat in the schools. This is a really ambition project.
- Do your institutions communicate with other institutions or municipalities in order to promote school meals system together? If no, why?  
Not really about the school meals but organic food. This is the local responsibility. We have some phone communications with other municipalities, but not organized.
- Why school meals system in DK is not common?  
I think it is mostly because of the tradition.
- Would you like to be anonymous in the report?  
I don't mind.

# Appendix D: Transcription of interview 3

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## 1. Interview information

The main aim of the interview is to test questionnaire and acquire your recommendations or comments on it in order to obtain eventually an ideal web-based questionnaire before we perform in Norway, Finland and Italy. Based on the questionnaire, according to your job experiences, we also would like to ask you some questions about school meal system in your region. The whole interview is mainly divided into 3 parts, general questions, **Public Organic food Procurement (POP) policy**, and **Food and Nutrition policy (FNP)**.

**Interviewee:** (Teresa Dominicussen, health consultant in the administration of children and culture in the municipality of Gladsaxe.)

**Interviewer:** Chen He

**Interview date:** 10-01-2008

**Interview place:** (Rådhuset 2860 Søborg)

**Interview type:** one to one interview

**Interview time:** 1.30 hours

## 2. Interview questions

### 2.1 General questions

- Please describe your job function and main responsibilities, currently working task.  
I work as a health consultant and I take care all of healthy issues for the children. I have been here for a year. I just started to do the school meals project. My job is to develop something for school lunch. I used to work in Bagsvær Skole where they first made a big kitchen to make a real school lunch. It used to get food from the kitchen for old people, they also make some food for the schools, they decided to build this big kitchen and cook food at the school. They have so many experiences and they want to use it at other stores. I start to help the schools here to build new kitchen. The old kitchen used to be not so nice, small window and door, and the dinner lady handed out the food. I have a colleague who being here for many years and work together with me. We made some rules with DFVF (DFVF is located in Gladsaxe) together, such as the health guideline. They made 3 group foods, healthy school, on the way to be health school and unhealthy food. This is just like our handbook. We help them to make the rule. DFVF also talked with our dinner ladies. We have dinner lady at each school, if they have any questions and problems, they will contact with me. We work with Arla. We meet them at Food Lab. It was a private company. We told about which kind of yoghurt we would like to offer to the pupils, and they tested them in some of our schools. Hopefully it will show on the market. we also work with Rynkeby and help developing new products.
- Do you have an overview of how many schools have lunch meal systems based on hot/warm prepared meals in your region?  
We have 16 primary schools. Some of them have dinner made at school kitchen and some of them have school food from outside. We still need the schools to build their own kitchens. They have still small place where sell the food. We are going to let them prepare their own school food. Now there are only 2 schools left, which don't have kitchen. One of them the food is from a private catering company. The dinner lady just sells it. And the other buy bread from the catering company, they make single products like sandwiches, pasta etc.
- Where are the meals produced (on school site or centrally?)  
14 on school site, 2 produced on out site.
- If the school meals prepare centrally, do you still have a school kitchen site and staff?  
Yes, we have school kitchen and dinner ladies. Each school has its dinner lady. This is depending on how many pupils they have at schools. The big schools have more time to make

food so they have 2 dinner ladies, and small ones have one. Because not all the pupils eat the school meals so don't have to make food for all of them.

- Who are the staffs?

Dinner lady is responsible for cooking school food, buying food from supplies or supermarket, plan dinner, cook dinner, sell food, clean. They take care of everything. We pay for them. They bring money to the school administrator, a person in all schools take care economy. In the school, this person contact with me. But I contact with both this person also the dinner ladies. Most dinner ladies don't have emails, therefore, it is difficult to get contact with the dinner lady. We made this person position 2 years ago. We are now also train them how to work in this position, e.g. administered for kitchen. I often communicate with them. If they have any problems, they will call or email me. Each month I need to write the plan that they have to do for this month. For example, this month you should have this kind of bread. When the month is over, they will write to me and tells how was going or maybe come with some good ideas.

- Who hire them?

Many years ago we hired them but now we ask some of them stop because they are no longer qualified. Now we hire more dinner ladies with education or at some big schools, an old dinner lady with a new dinner lady. The school hires the dinner lady but the school often ask me to be in the interview. The leader of school will also come for the interview.

- Is the staffs trained?

We also teach them how to cook. My colleague and I take care of the training. We have a handbook regarding the training of dinner lady, how to arrange it, how to buy it, what should buy and how to make a recipe. In the past, the dinner ladies just some housewives, they don't have any education. The new dinner lady who is educated we still train them. Now we are talking about that we could organise them all together and talk about to develop a project and try it out. Actually late of this month I will have a meeting with the biggest organic union in DK, Økologisk Landsforening. They mentioned that they could come and tell about organic food in the schools. Maybe we can run a programme together in each school. We can talk with dinner lady about how to use organic food. They can also talk with the teachers, the pupils, and the leader. Next year we have new Agenda 21 plans and this is more about organic food. This is something you have to lift up in the future. I have 4 meetings with dinner ladies yearly.

- How many of the school use organic ingredients? What is the percentage of organic ingredients? (Approximately).

It is about 15%. This 15% is not for one dish but for the whole kitchen. Most of organic ingredients are dry stuff, such as pasta, flour, milk, yoghurt, carrot and potato, etc. The organic meat is too expensive. We work on Agenda 21, which should use organic food where is possible. The only rule about organic food now from our politicians is to use organic food where is possible. It is difficult for dinner lady to use organic products because they are normally old-fashion and no education background. It is easy to say that you have to buy organic food, but it is hard for them to learn how to cook organic food. If you have to make food from basis, it is a lot difficulties, could I use a bit more butter or something?, how to make up a dish?, how much potato, meat or vegetable in the dish? There is a lot knowledge that they have to learn and it is not so easy. We are working for a plan for 2009, where it is stricter with organic food. Currently we don't work enough on organic food; it is maybe why the schools don't use much. On the other hand, if it is organic school food, the dish will be more expensive, so the pupils may not pay for it. The kids are more care about the taste and the look of food.

- What are the drivers/motivations for the implementation of (organic) school meal systems? (e.g. health, environmental consideration, a service to the pupils and their parents etc)

The experiences of more and more pupils don't have lunchbox at schools. The other is to offer health lunch.

## 2.2 POP policy

*Definition of POP policy: Refer to a policy in which a specified amount of ingredients are organic according to EU-regulations and which are practiced in public organizations serving food.*

- How many years have POP policy been in operation since it was adopted?  
We don't have the policy about how many organic ingredients in the food. I think we will have it in 2009. We won't put extra money for organic food instead of we would like to put the money on training dinner lady.
- How long time did it take to implement? (Could you describe how it was adopted)  
Don't have.
- Who was the key actor during adoption process? In other words, who decided? Who is the person responsible for carrying out POP policy? (by municipal government, by school board or other external promoters and internal promoters or key actor) Are you the same department as the key actor?  
Don't have.
- Could you describe how it was implemented? (municipal support, consultant support, no support)  
Don't have.
- Can you mention some characteristic problems that schools deal with during the implementation and operating of an organic lunch meal system? What is the main barrier now?  
Don't have.
- Do you have a suggestion as to how these problems can be solved?  
Don't have.
- Do the teacher, pupils and parents know the POP policy? What is teacher role in the POP policy? Do they learn nutritional education to the pupils?  
Don't have.
- Who decide the menu? How do you know if the menu reaches your expectation?  
The dinner ladies design the menu according to the guideline. They know how many vegetables or other food items the pupils eat for lunch. They put the designed menu on the website of school. I can go and look. I will comment on it. In the future, maybe we will hire new dinner lady with high education, so they can design good menu by themselves. They maybe can teach student about health and nutrition as well.
- How is the ratio between pupils who eat at schools or don not eat at schools? (If a big difference, why the parents would rather pack lunchbox than pay school meals for children?)  
It is around 25% pupils who eat at schools. Most of the pupils are at 5<sup>th</sup> grade and upper. The rest of pupils have brought lunchboxes. For us as the municipality, it is ok for children have their own lunchbox. We don't want lunchbox disappear. We want to serve the pupils who don't have lunchbox. Actually we think lunchbox have some healthy food as well, such rugbrød (rye bread). The parents prepare for the lunchbox. We don't want to take over the responsibility of children's food from the parents. It is parents' responsibility. Money is also a problem.
- Do you have any monitoring steps for POP policy? How they are exactly implemented? (Are the monitoring based on estimates and if so from whom? Or on exact date from invoices etc? How are monitoring data used (reports, statistics)  
Don't have.
- Is the food serving outlets using organic produce subject to certification? If so how are certification done?  
Don't have.
- Are organic wholesalers locally or internationally?  
There is a company which is only deal with the organic food.

## 2.3 FNP

*Definition of FNP: A set of principles to provide nutritional needs of pupils at schools and ensure availability and accessibility of healthy foods.*

- Do you have a FNP in the schools?  
Yes. They started to make it long time ago, maybe 5 years ago.
- If you have FNP, is it written?  
Yes
- Do you have FNP before start offering organic food?  
Yes.
- How many years have FNP been in operation since adopted?  
My colleague and I made this policy, and operated one year ago. We spent half year on writing the policy/handbook and also the recipes. The school leaders, school nurses, the school dinner ladies, and also the parents can have it too. The recipes are for different seasons, because I classified the food by seasons. They can buy foods according the standard or make it by the recipes in the handbook. This year is more on products you buy, and next year we will work more on how to put products together into one meal, how much meat in the dish. Because it is difficult to let them to take policy in one time, have to learn it step by step.
- Could you describe the policy making in relation to your FNP?  
Some of the schools have a big kitchen and some have a small kitchen. Some can prepare complicated meat and some cannot. Hence some of the recipes the small schools can't use. It was difficult to make one policy to run smoothly in all schools. Someone can't understand the policy.
- Who had the main role during adoption process? In other words, who decided? Who is the person responsible for carrying out FNP? Is the same actor as POP policy?  
We have a health department, where a small group people to hand project out to each department. We gave them our ideas on the school meals programme because we know the schools. They also think it was a good idea. Then we presented a bit about this and also budget estimate. Afterwards we sent it to the politicians, they decide every policy and this is how the system works in Denmark. They think this was a good idea. We sent it out to all schools and got their comments. Some of the schools maybe like and some schools think it is too big project. Finally we wrote all reflections from schools to the politicians. Then the politicians decided to carry out the project, and support.
- Could you describe the content of FNP? (e.g. general or specific)  
It is in the handbook.
- Do the teacher, pupils and parents know the FNP policy?  
The schools have to teach children to choose right product in the canteen. They have responsibility to make it work. I don't do it for them but they can contact with me if they have problems. I train them to do it themselves. The school is to follow the policy we made and put more students eat there. The parents are more positive now. We told parents through different ways. We also teach the schools how to communicate with parents, such as papers or internet. But children can't order food from internet. We now cook the school foods carefully and we promise that we have good school food. They were not positive before because they did not think school food was good. Maybe in the future we can have a lunch card and contact with national credit card centre. This is for the poor families' children who cannot offer the school food. It is awkward for the children can't pay for lunch in the school, and also not funny for another students know it. The municipality might pay for it by lunch card and none notice at the schools. We have nutritional education through the whole period of primary school. It is not put a special lesson but mix with other lessons. We have a lesson which teach cook but also learn about health. Now we are more focus on teach about health. They have a week when school build like teach on different classes; low grade and old grade 1st and 5<sup>th</sup> mix and do some projects. They can also do about health. We had our classes about health; I was helping with the teaching. A school called Bærebroskole, where the pupils cook at kitchen for other pupils, from 3<sup>rd</sup> to 8<sup>th</sup>, age 9. They cook for a week, and each class has 3 weeks a year. They divided into 3 groups, and the teachers with another 2 groups will teach them something, and the group at canteen will cook. The teacher will tell how to cook the food. They have to learn about hygiene too. I helped the teachers how to teach the pupils about it.



- In your opinion has the healthiness of the school meal offer changed after your implemented a FNP, in what direction?  
We have not done that by research yet, but we interview each pupil at 9<sup>th</sup> grade, regarding health and weight issues. They are stable weight and we can see that more pupils eat at schools.
- How about eating facilities at schools? Music around, long line waiting or eat in a group?  
We pay for the kitchen. A new kitchen costs around 1 million kroner. We have a new big kitchen. I was there yesterday, it costs 8 million. We have the warm meal, and also salad bar. The dinner lady gives potato and meat, and vegetables the pupils can themselves as much as they want, in order to let them eat more vegetable. We don't have much yoghurt in the canteen, because in Denmark the yoghurt contains too much sugar and fat.

#### 2.4 Extension questions

- What is your or your institution future plan for organic school meals?  
The big thing is that we organise dinner lady in another way. Second is to ensure reach the nutrition guideline. Third is to build more kitchens. Last is to encourage more pupils help with cook in the schools.
- Do your institutions communicate with other institutions or municipalities in order to promote school meals system together? If no, why?  
A lot of other municipalities called and wanted to know about our handbook. We have it also on the internet. Some of the municipalities want to visit the schools in Gladsaxe. Sometime we show them, but sometime we are too busy to do it. We try to do as much as we can. That is why we spend time on food lab.
- Why school meals system in DK is not common?  
Because the government and also the traditional way. The government does not give enough money or attention on it, but actually a lot people want it. We need a central statement from the government, so it is possible to spread the school meals in DK.
- Would you like to be anonymous in the report?  
No, I don't mind.

# Appendix E: Web based questionnaire

Print out of the web-based questionnaire<sup>2</sup>:

Udfyld spørgeskema

Page 1 of 6

[Til Oversigt](#) | [Print venlig](#) | [Log ud](#)

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## iPOPY

Your answers are important to us and as a token of our appreciation; therefore, we invite you to participate in small lotto where we draw a winner among the answers. The winner can choose freely to be invited at no cost to visit school food system in either Denmark, Norway, Finland or Italy. The questionnaire is divided into 8 parts and approximately takes 15 minutes to complete. We thank you in advance!

### 1 - Personal information

In order to facilitate contact with the winner of lotto, we need to ask you to fill in some personal information. This information will treat with strict confidence and won't be given to any third party.

<b>1.1 First name</b>	<input type="text"/>	Max. 250 letters
<b>1.2 Last name</b>	<input type="text"/>	Max. 250 letters
<b>1.3 E-mail address</b>	<input type="text"/>	Max. 250 letters
<b>1.4 Phone number (e.g. +45 56 22 78 45)</b>	<input type="text"/>	Max. 250 letters
<b>1.5 Which country are you from?</b>	<input type="radio"/> Denmark <input type="radio"/> Norway <input type="radio"/> Finland <input type="radio"/> Italy	
<b>1.6 Organisation name</b>	<input type="text"/>	Max. 250 letters
<b>1.7 Department name</b>	<input type="text"/>	Max. 250 letters
<b>1.8 What is the type of your organisation?</b>	<input type="radio"/> Private <input type="radio"/> Public <input type="radio"/> Other	
<b>1.9 If you answer 'other' in the above question, please specify here.</b>	<input type="text"/>	Max. 250 letters
<b>1.10 What is your current position?</b>	<input type="radio"/> Municipality official <input type="radio"/> School administration <input type="radio"/> School food caterer <input type="radio"/> School kitchen operator <input type="radio"/> Other	
<b>1.11 If you answer "other" in the above question, please specify here.</b>	<input type="text"/>	Max. 250 letters

### 2 - Public organic procurement policy (POP)

<http://teamb.esvar.nu/asp/formular.asp?Skmid=65>

2008-1-22

<sup>2</sup> The questionnaire was available at:  
<http://teamb.esvar.nu/asp/formular.asp?Skmid=65>

Definition of POP: Refer to a policy in which a specified amount of ingredients are organic according to EU-regulations and which are practised in public organisations serving food.

**2.1 How was your POP adopted?**

Voluntary program  
 Compulsory program  
 Don't know

**2.2 How many years did the school has a POP operated on school meal system?**

<1  
 2  
 3  
 4  
 >5

**2.3 Which institution has adopted POP in your case?**

National government  
 Local or regional government  
 School administration  
 Other

**2.4 If answer 'other' in the above question, please specify here.**

Max. 250 letters

**2.5 Do the school have any monitoring steps for POP in order to guarantee the application of organic food?**

Yes  
 No  
 Don't know

**2.6 If answer 'yes' in the above question, please specify here.**

Based on the evaluation of officials  
 Based on the inspection of school administration  
 Based on the involvement of pupils' parents  
 Based on the kitchens' own inspection  
 Other

**2.7 If answer 'other' in the above question, please specify here.**

Max. 250 letters

**2.8 Please estimate the average of organic share budget in your country in relation to school meal (e.g. 10%)**

Max. 250 letters

**2.9 What kind of strategy do you suggest for organic procurement policy implementations so that increase the organic food consumption in youth through school (public) meals?**

Max. 500 letters

**3 - Food and nutrition policy (FNP)**

Definition of FNP: A set of principles to provide nutritional needs of pupils at schools and ensure availability and accessibility of healthy foods.

**3.1 Do your school have a food and nutrition policy?**

Yes  
 No

Don't know

**3.2** If answer 'yes' in the above question, please specify for how many years school has FNP.

<1  
 2  
 3  
 4  
 >5

**3.3** Which institution has adopted FNP in your case?

National government  
 Local or regional government  
 School administration  
 Other

**3.4** If answer 'other' in the above question, please specify here.

Max. 250 letters

**3.5** Which elements are involved in the FNP (more ticks allowed)?

Fresh vegetables availability  
 Fresh fruits availability  
 No fatty snack  
 No fast food  
 No fizzy drinks  
 Free drinking water access  
 Nutrient calculated menus  
 Menus complying with official guidelines  
 Publishing of an annual FNP report  
 Staff training

**3.6** Do your school have a health policy (i.e. Health Promoting School or similar)?

Yes  
 No  
 Don't know

**3.7** Does FNP include in classroom activities in the school?

Yes  
 No  
 Don't know

**4 - Serving practice I**

How is your meal provision set up/configuration?

- 4.1** Tuck shop (Bod, kiosk)
- In house  
 Contracted
- 4.2** Prepared food layout
- School site  
 Downtown site

**5 - Serving practice II**

- 5.1** Are menus prefixed or decided by users in the school?
- Prefixed  
 On demand

5.2 Do your school meal service has to comply with official nutritional guidelines?	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Don't know
5.3 Do your school have a nutrition group, committees, school nutrition action group or similar?	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Don't know
5.4 Are menus nutritionally calculated on a regular basis?	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Don't know
5.5 Do your school have designated sit down eating facilities outside classrooms?	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Don't know

### 6 - Serving practices III

Please specify in which direction your serving practices have changed in relation to availability of following items over the past 5 years.

6.1 Fresh Vegetables (e.g. Lettuce, Cucumbers, Carrots, Tomatoes Green beans etc)	<input type="radio"/> More <input type="radio"/> Same <input type="radio"/> Less <input type="radio"/> Don't know
6.2 Fresh Fruits (e.g. Apples, Pears, Peaches, Oranges, Grapefruit etc)	<input type="radio"/> More <input type="radio"/> Same <input type="radio"/> Less <input type="radio"/> Don't know
6.3 Meats (e.g. Chicken, Pork chops, Steaks, Fish, Lean hamburger etc)	<input type="radio"/> More <input type="radio"/> Same <input type="radio"/> Less <input type="radio"/> Don't know
6.4 Whole grain products (e.g. Whole grain bread, Whole grain pasta, Whole grain cereal, Oatmeal etc)	<input type="radio"/> More <input type="radio"/> Same <input type="radio"/> Less <input type="radio"/> Don't know
6.5 Beverages (e.g. Free cold drinking water, 100% Fruit juice, Tomato juice, Herb tea etc)	<input type="radio"/> More <input type="radio"/> Same <input type="radio"/> Less <input type="radio"/> Don't know
6.6 Low fat dairy (e.g. Low fat milk, Low fat yoghurt, Low fat sour cream, Low fat cream cheese etc)	<input type="radio"/> More <input type="radio"/> Same <input type="radio"/> Less

6.7 If your serving practices have changed, please give an account of the reason.

6.8 If you answered other in the above question, please specify here.

6.9 Are these changes to your knowledge associated with a POP (if any)?

Don't know  
 In order to cut expenses  
 In order to meet nutritional guidelines  
 To meet user demand  
 Other

Max. 500 letters

### 7 - Serving practice IV

Please specify in which direction your serving practices have changed in relation to availability of following items over the past 5 years

- 7.1 Deep fried food (Pommes fries, Chicken nuggets, Fish fingers, Hamburgers, etc)
- 7.2 Sausages
- 7.3 Chocolate / Chocolate Bars
- 7.4 Candy
- 7.5 Chips
- 7.6 Cake
- More  
 Same  
 Less  
 Don't know

**7.7 Fizzy drinks**

Less  
 Don't know

More  
 Same  
 Less  
 Don't know

**7.8 If your serving practices have changed, please give an account of the reason.**

In order to cut expenses  
 In order to meet nutritional guidelines  
 To meet user demand  
 Other

**7.9 If you answered other in the above question, please specify here.**

Max. 500 letters

**8 - Comments and feedback**

**8.1 Do you have any comments or questions to this questionnaire or IPOPY?**

Max. 500 letters

When you have finished answering, just press the button below and your answers will be submitted.

Gem besvarelse

## The iPOPY project

The aim of the project “innovative Public Organic food Procurement for Youth - iPOPY” (<http://www.ipopy.coreportal.org/>) is to study how increased consumption of organic food may be achieved by the implementation of strategies and instruments used for public procurement of organic food in serving outlets for young people. Supply chain management, procedures for certification of serving outlets, stakeholders' perceptions and participation as well as the potential of organic food in relation to health and obesity risks will be analysed. The research project is a cooperative effort between Norway, Denmark, Finland and Italy (2007-2010). German researchers are also participating, funded by the Research Council of Norway. The iPOPY-project (2007-2010) is one out of eight transnational pilot projects funded by the CORE Organic funding body network within the context of the European Research Area.

More at [www.coreorganic.org](http://www.coreorganic.org)

### Project contributors:

**Norway:** Bioforsk Organic Food and Farming Division and SIFO, National Institute for Consumer Research

**Germany:** University of Applied Sciences, Münster and Center for Technology and Society, Berlin Institute of Technology

**Denmark:** DTU, Technical University and DTU, National Food Institute

**Finland:** University of Helsinki, Ruralia Institute

**Italy:** State University of Milano, Dep. of crop science and ProBER (Association of organic and biodynamic producers of the administrative region of Emilia Romagna)

**Project manager:** Anne-Kristin Løes, Bioforsk Organic Food and Farming Division, Norway

## iPOPY Publications:

*Bocchi, S., R. Spigarolo, N. Marcomini and V. Sarti; Bioforsk Report, Vol. 3 No. 42 2008, iPOPY discussion paper 3/2008, Organic and conventional public food procurement for youth in Italy.*

*Hansen, S.R.; H.W. Schmidt, T. Nielsen, N.H. Kristensen, Bioforsk Report Vol. 3 No. 40 2008, Organic and conventional public food procurement for youth in Denmark.*

*Løes, A.-K., M. Koesling, G. Roos, L. Birkeland, L. Solemdal, Bioforsk Report Vol. 3 No. 43 2008, iPOPY discussion paper 4/2008, Organic and conventional public food, procurement for youth in Norway.*

*Mikkola, M.; Bioforsk Report Vol. 3 No. 41 2008, iPOPY discussion paper 2/2008, Organic and conventional public food procurement for youth in Finland.*

*Strassner, C.; A.-K. Løes, N.H. Kristensen and R. Spigarolo, R (eds.), 2009; Proceedings of the Workshop on Organic Public Catering held at the 16th IFOAM Organic World Congress, 19th June 2008 in Modena, Italy.*

*Nölting, B., C. Strassner and A.-K.Løes; Bioforsk Report, Vol. 4 No.7 2009, iPOPY discussion paper 1/2009, Constellations of public organic food procurement for youth.*

**All publications can be downloaded from the website:**

[www.ipopy.coreportal.org](http://www.ipopy.coreportal.org) and  
<http://www.orgprints.org/> (enter “iPOPY” as keyword)