

## Organic school meal systems – towards a more sustainable nutrition

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**Abstract.** Nutritional and health problems related to life style alarm European governments. The interest in school meals as a lever for change is increasing because young people reside longer in public institutions and their often unsatisfactory eating patterns might be counterbalanced by healthy school food. Organic food contributes to sustainable nutrition, and hence is an interesting starting point for healthier menus and food education. The research project ‘innovative Public Organic food Procurement for Youth’ (iPOPY) studies efficient ways to implement organic food in public serving outlets for young people. The project has four explorative work packages studying policies, supply chains and certification, the young consumers’ perception and learning about sustainability and organic food, and health effects of organic menus in Denmark, Finland, Italy, and Norway. Finland and Italy serve a warm school meal daily for all pupils, whereas Denmark and Norway rely on packed lunch from home. Italy and Denmark have ambitious goals for organic food in schools, whereas Finland and Norway have not (yet). Political decisions are required, but not enough, to ensure well functioning organic school meal systems.

**Key words:** organic food, public procurement, policy, supply chain

### INTRODUCTION

Rising obesity rates among European children, malnutrition and diseases related to food intolerance cause concern, and call for new food serving approaches. Schools are increasingly becoming a food arena for public engagement (Mikkelsen et al., 2005). Initiatives for reforming publicly organized school meal services and improving their quality mushroom across Europe, with successful programs e.g. in Rome (Morgan & Sonnino, 2008). The EU has recently decided to implement a daily free fruit school program (European Commission, 2008), aimed at improving the health of young people. Public food serving is utilized to achieve healthier eating and more sustainable consumption patterns; expecting that habits achieved during youth will be long lasting.

Organic food has a great potential to support a sustainable development. Organic production has less negative impacts on the environment, and organic food may have a higher quality (e.g. Brandt & Mølgaard, 2001). Organic school meals provide an opportunity to increase the health and well-being of the pupils, and may be used as an

approach to inform them about sustainable nutrition. The introduction of organic food in catering often implies that more focus is set on healthy eating (Mikkelsen et al., 2006). Due to relatively high premium prices on meat, organic food strategies often include ‘less meat, more vegetables’-adaptations, which are usually nutritionally and environmentally sound. Danish consumers using more than 10% of their food budget for organic products spend relatively more on fruit and vegetables, and less on meat, coffee and butter (Krarup et al., 2008), which demonstrates a close relation between organic eating and healthy eating. However, public procurement for sustainable nutrition and the use of organic food is still an untapped potential (Morgan & Sonnino, 2008). Coordinated and well informed efforts are required to overcome the hindrances posed by lack of funding, personnel resources, appropriate supply chains, infrastructures like school kitchens and dining rooms and not least, to root the changed food system among all the involved actors. 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. The main goal 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. Public organic food procurement for youth (POPY) is defined in iPOPY as follows: *‘Public organic food procurement for youth comprises all activities with regard to procurement in public food services for children and young people up to 25 years in schools and other public institutions for youth, such as day-care centers, universities, hospitals, and military facilities. The meal system is organized and its costs are carried, at least partially, by the public institution in question. Youth, or their parents, may need to pay for the food, at least in part. The food contains organic products conforming to EU-Regulations on organic production’* (Noelting et al., 2009). Schools are the most important public setting for young people, and this paper presents experiences achieved during the introduction of organic school meals in some European countries with highly diverse school food systems, with a special focus on the Nordic countries Denmark, Finland and Norway.

## MATERIALS AND METHODS

POPY is a complex phenomenon, demanding an interdisciplinary and multi-perspective research approach. In iPOPY, four explorative work packages analyze policies, organic supply chains and certification, the young consumers’ perception and participation, and health effects of organic menus. A separate work package manages the project and synthesizes the final conclusions. Both qualitative and quantitative research methods are used, in accordance with the various research questions. Data are collected in Denmark, Finland, Italy and Norway by structured and open questionnaires, interviews, focus groups and observation, from statistics, public websites and reports. Relevant cases of interest are studied in all countries, mostly municipal school meal systems, but also a congregation, a group of military camps and a music festival. The multiple methodological approaches allow for a comparison between countries and an interdisciplinary integration of results, and contribute to generate a holistic understanding of POPY. The basis for this paper is national reports from the four mentioned countries, and results from the case studies.

## RESULTS AND DISCUSSION

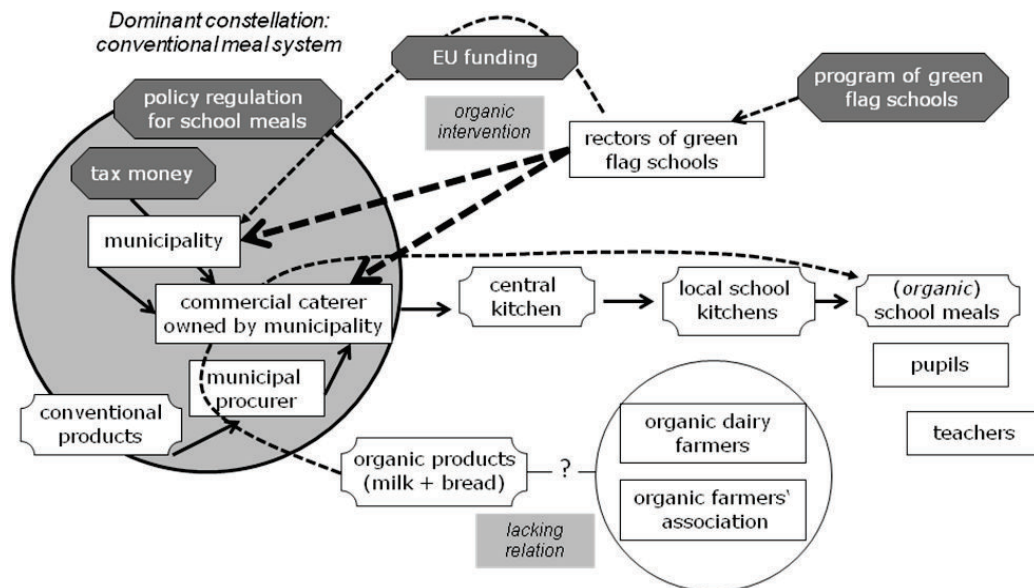
*Overview of school food systems:* Significant differences were revealed among the countries by reports on national school food systems and how and to which extent organic products are utilized (Bocchi et al., 2008; Hansen et al., 2008; Løes et al., 2008; Mikkola, 2008). Strategies, structures and practices in the meal systems vary considerably. A full meal service is offered to Italian and Finnish pupils, and is a well rooted and popular practice in these countries. In Denmark and Norway a packed lunch brought from home is complemented by an additional food service. Due to food culture traditions and a high awareness about environmental problems, Italy has become a pioneer in Europe to use organic and local products in school meals, whereas in Finland, both economic restrictions and lack of interest limit the use of organic products in schools. In most Danish and Norwegian municipalities, the only organic school food offered is subscription to milk with a premium price, and in Norway, even this is only offered in a few regions. However, some large Danish municipalities have established ambitious school meal systems emphasizing organic food. An important structural difference among the countries is that school lunch is fully paid by tax money in Finland, whereas the meals or food items are only subsidized in the other countries.

The variation between the school meal systems in these four countries represents the total variation found within this sector, at least for European conditions. Central factors for the use of organic school food have been identified as active local stakeholders, food quality requirements, management of organic supply chains, and complementing educational programs.

*Italy – best practice, but organic is expensive:* The city and province of Piacenza is a ‘best practice’ case of Italian organic school meals, further described by Bocchi et al. (2009a). In Piacenza, political decisions to support local, sustainable food production and protect the environment resulted in a detailed call for tender where ambitious shares of various organic products were requested. The call was well suited for the already established and efficient cooperative network among the local organic producers. The caterer could offer even higher organic shares than demanded in the tender, and achieved a contract for five years. However, several factors hamper a broad utilization of organic school food even in Italy. The main constraints are economy; premium prices, lack of extra funding, pressure to reduce public costs, and logistics; lack of appropriate products, products not always available (Bocchi et al., 2009b).

*Finland – deeply rooted school meal systems are difficult to change:* The Finnish school meal system is well developed, with a long history. The meals are free, and the menus are based on national dietary recommendations (Mikkola, 2008). Changes towards organic school food do not have a high priority, but there are initiatives fostering organic school food. One example has been analyzed (Fig. 1) with the methodology of constellation analysis (Noelting et al., 2009). The (anonymous) municipality has appointed a large semi-commercial catering company owned by the municipality, serving about 100 schools. A central kitchen prepares the main dishes and delivers them to school kitchens where salads, pasta and rice are prepared. All kitchens are supplied by the municipal procurement office. Three rectors, applying for a ‘Green flag’ school environmental scheme, proposed organic food as an element to receive the flag. They discussed with the catering company and the administration for education,

and organized EU funding to pay the premium price. The process took more than one year, but finally, organic bread and milk replaced conventional products in the three schools. The organic food was bought by the central procurement office on the open market. No specific organic supply chains were established. A more active promotion and support from organic producers could have facilitated the efforts of the initiators (Fig. 1).



**Fig. 1.** Constellation of an organic school food intervention.

*Denmark - organic initiatives are competed by the packed lunch:* Denmark has no national regulations or funding for school meal services, but some municipalities have used much funding to develop locally adapted school meal systems, often including organic food. The capital Copenhagen (52 primary schools) has established a large centralized kitchen (KØSS) producing meals to be heated and sold in school tuck shops by pupils organized by a teacher. In the city of Roskilde (19 schools), the meals are produced by a local organic catering company, and staff is hired to serve the food at the schools. The rural municipality of Gladsaxe (16 schools) employs kitchen operators to prepare lunch at single schools, and a municipal coordinator is responsible for their education and supervision. Although the organic share of the food is satisfactory, little food is sold in any of the municipalities (He and Mikkelsen, 2009). On average, less than 25% of the pupils buy the meals. The traditional lunchbox has shaped the eating style of Danish school children for a very long time, and it is a challenge to develop an efficient and committed meal organization at the schools. The schools do not promote the meals, and the staff complains about extra work without resources. Danish school meal systems have failed to create a significant ownership among the pupils, and to integrate the organic message into the curriculum (Mikkelsen 2009). It should be further studied why the subsidized school lunches in Italy are very popular, whereas in

Denmark the majority of the pupils stick to the packed lunch even where cheap and high quality warm dishes are offered.

*Norway - perceptions of food related to context:* In spite of ambitious national aims for the consumption of organic food, 15% by 2015 (LMD, 2009), school meals are not much utilized to achieve this goal in Norway. With respect to healthy school food, the well developed fruit subscription schemes are worthy of mention. Norway was the first European country to introduce a daily free school fruit in public schools, in 2007. Good arguments for this decision were found in an intervention study documenting a long-lasting increase in the pupils' daily intake of fruit and vegetables after a period of free fruit serving at school (Bere et al., 2007). However, so far only schools with a lower secondary level (class 8–10) get funding for free school fruit. Organic fruit has been served with success in some municipalities where local distributors have been available. However, it has been very difficult to organize a funding of the premium price in the public free fruit scheme, and hence some distributors had to close down.

The way organic food was included in the curricula has been examined in four Norwegian primary schools (Marley, 2008). Organic food was introduced in the schools either by fruit and milk schemes, or by the schools' own initiative. Whereas teachers and school administrators supported organic food because of environmental benefits, the pupils generally drew stronger links between organic food and health. It was important to have an enthusiastic staff member initiating the organic food program, but a larger consciousness among the pupils was achieved when a broader range of school staff was involved. Involving the pupils, through school or community gardens, preparing meals and farm visits, promoted their interest in organic food.

A study of the annual 'Øya' music festival in Oslo, serving organic food since 2003, shows that POPY is very sensitive to its context (Roos et al., 2009). Experiences with organic food were explored among young festival participants. Festival food was regarded as 'body fuel', not gastronomy, and it was crucial to get much food for the money. Organic food was closely linked with premium price, and sometimes with low quality due to long shelf storage. The informants were not convinced that exposing organic food at the festival would necessarily impact people's preference for buying organic food later, because a festival is seen as a limited case, insulated from everyday life. Some hypothesized that it might even be negative for everyday consumption of organic food if it becomes closely associated with festivals, convenience food and eating out of home.

## CONCLUSION

A political decision setting goals for the consumption of organic food, either on a national or a local level, will foster the introduction, or increased use of organic food in public food serving systems. However, as shown by the results discussed here, such decisions are not sufficient to ensure increased organic food consumption. Committed actors are required, as well as increased cooperation and creativity among actors along the whole supply chain from field to dining room. There are a lot of practical problems to tackle, which demand enthusiasm and go-ahead spirit. Last but not least, introduction of organic food in public settings for young people implies a good opportunity to

inform and educate about food production, quality and culture and to initiate learning processes for sustainable nutrition (Mikkola et al., 2009). Integrating the (organic) food in a larger effort to increase the sustainability of the school, municipality or other relevant unit may take time, but in the long run it will likely be more effective than only offering the food without any education, information or other efforts to root the organic initiative among the daily users.

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