

## Towards sustainable food systems through innovative networks in public catering

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**Abstract:** Sustainability of food systems inherently implies food security, but in search for cost savings, the decision-makers tend to belittle the significance of food security, to overlook the various aspects of sustainability in statutory catering and to ignore the environmental, societal and cultural aspects of food. An extensive survey on the present status of statutory public catering shows, that although the severe natural circumstances present great challenges for food production in Finland, municipal public catering is still today largely based on domestically produced food. Thus, even in extreme circumstances national food security is possible. However, because food security is not seen as constituting an essential part of sustainable development (SD), the situation may alter in future. There is also large variation among Finnish municipalities as to how those involved in catering understand the concept SD, how SD has been accounted for and how it can be promoted in practice. In addition, there is very little direct co-operation between researchers, extension and practical actors of municipal catering. The results imply that in order to encourage sustainable food consumption, the concept of SD should be brought clearly into the context of public catering. The municipalities differ as to the foci and development needs. Therefore, there are no universal solutions, but the solutions need to be slotted to the prevailing local circumstances and reconciled in mutual understanding among the actors. Innovative networks involving municipal actors, researchers and an expert as a broker provide one promising channel for finding the local way to improve sustainability of public catering. This study aims at reconnecting people to the origin of food in their own surroundings and encouraging them to actively promote sustainable food systems and sustainability in public catering through empowerment of the actors within innovative local networks. The presentation captures the results from the survey and discusses future perspectives of increasing sustainability within public catering in light of first experiences from the actors' innovative networks.

**Keywords:** municipal catering services, school catering, food education, education for sustainable development, contextualisation of sustainable development

### Introduction

The overriding challenge in the present day world is to address the current social, cultural, economic and environmental problems that are evident at scales ranging from local to global. The concept "Sustainable Development" (SD) has been introduced to integrate the different dimensions and to search for balance among them. SD has, however remained, as a rather abstract concept that is brought into discussion through the slogan "People, Planet, Prosperity, Participation, Peace" or by referring generally to the documents of the Brundtland Commission, Johannesburg Summit and Millennium Ecosystem Assessment. In these SD has been defined broadly as well-being of nature and people and as socio-cultural interaction that secures the prerequisites of good life for the present and future generations all over the world, and in decision-making and activities endeavouring equally to account for the environment, people and economy (WCED 1987, Millennium Ecosystem Assessment 2008).

When expressed in so grandiloquent but general terms, the concept may remain obscure and the noble principles are not easily translated into action. In addition, SD is still often also understood narrowly so as to deal with environmental matters only (Ehrenfeld 2008), and even the environmental matters tend to be reduced to those regarding climate change. Confusion arises also, because "environment" may refer to the physical - natural or constructed - environment or it may be understood more broadly comprising both the physical environment and the social environment of human relations (Hesselink et al. 2000, Wals 2001, OECD & CERI 2006). The need to operationalise

the goals of SD in some societally significant context that can be connected with the global sustainability challenges has been lately emphasised (DeVries & Petersen 2009, Scoullos 2009, van Ginkel 2009, Kauffman 2009). Re-establishing the connection between people and the origin of food in their own surroundings is regarded as important means to bring sustainability concept into action (e.g. Marsden 2000, Marsden 2004, Halberg et al. 2006, Sonnino et al. 2008). Here, the concept of SD is concretised by considering the aims of SD and their realisation in the practical context of Finnish public catering, inclusive school catering.

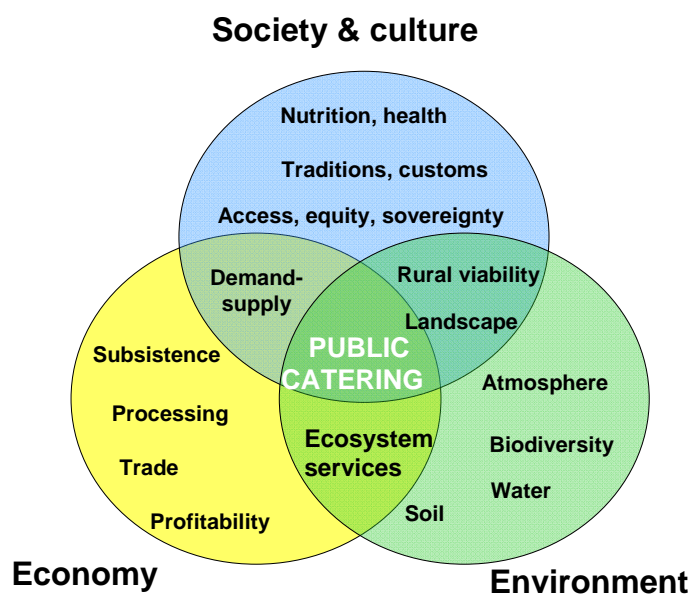
In Finland, statutory public catering provides over half of all meals eaten outside homes, and the great majority, 83%, is at the response of the municipalities and the state (HORECA 2007). Free warm meal is served daily to all children and pupils in the Finnish kinder gardens, primary schools and in secondary general and vocational schools. About one third of the population uses public catering services on weekdays, and all Finnish citizens are within its reach at some point of their lives (HORECA 2007). The emphasis in public catering and in school catering is on healthiness and nutrition, and the results of this civic education are evident in gradual change of food consumption habits such as increased use of vegetarian products and decreased use of salt and saturated animal fats. However, because of the continuously shrinking economic resources the price has become practically decisive factor in public food procurements. There is a risk that the price-competitiveness overrides the sustainability goals and in search for immediate cost savings the societal significance of proper nutrition and the consequent long-term benefits for national economy and national health are forgotten.

During the past years, the Finnish public catering services have been increasingly centralized and rationalized, and the amount of prepared meals has increased; in 2002 provided 420 million meals, but today this amounts to 440 millions. At the same time the number of institutional kitchens has reduced by nearly 20%, from 6000 in 2002 to 5000 in 2007 (Finfood 2008, Mikkola 2009a, Syyrakki 2009).

The aim is to find means to improve sustainability of the catering services and to conceptualise sustainability education in schools through food education and school lunch. The focus is the statutory municipal catering that is publically financed. The aim is in the first phase of the research a general picture of the present state of affairs was obtained by clarifying the understanding of SD among the actors within municipal catering as well by capturing their experiences and development ideas about SD. Regarding specifically schools, the focus was on food education, school lunches and their connection to the schools' educational goals in general and to sustainability education in particular. The paper at hand presents the results from the first phase and discusses future perspectives of improving sustainability within public catering in light of the results.

## **Research framework, materials and methods**

With focus on food and eating, the various dimensions of sustainable development reach into the everyday experiences and natural bio-physical principles. The human communities are fundamentally dependent on the ecosystems for food production. Therefore, the question of allocating these ecosystems to the human populations becomes critical. The baseline criteria for sustainable agro-ecosystems allocation are food security and environmental stewardship. Any food system that provides people with equitable share of the agro-ecosystem products, and maintains the productivity for future generations, may be considered as sustainable (Helenius et al. 2007). Environmental impacts of production deal with impacts on soil, water, air, biodiversity and landscape, while economic dimension is approached through questions dealing with subsistence and profitability of food production and social dimension is opened through welfare of the people involved in food production, and their working conditions as well as through food security, sovereignty and equity, health and nutrition and viability of rural areas. In addition, food has deep roots in the culture, and eating is an aesthetic and socially unifying experience, and there are also ethical questions concerning food production. These couplings are accounted for in sustainable food provisioning (Fig. 1).



**Figure 1.** Framework for sustainable food provisioning. The figure is modified from IAASTD 2009.

The study is based on the results of two extensive Webropol surveys carried out and analysed in 2008-2009. The first survey was directed to the responsible actors within the municipal catering, and it was sent to all Finnish municipalities, exclusive the Swedish speaking municipalities in the archipelago. The aim was to compile basic information dealing with the practicalities of municipal catering as well as to get an overall picture on the viewpoints of the actors as to how they understand SD, how it is accounted for and how it can be promoted in their work.

The second survey was sent to all Finnish and in Swedish speaking first grade schools of basic education in Finland. Along with the basic information the questions dealt with food and sustainability education and the role of school meals in these. Additionally, the questions concerned subject-specific educational goals, pupils' participation in the practicalities of the lunch arrangements, within school co-operation among the educational and catering personals and food-related out-of school activities. In addition, a content analysis of about 300 school curricula was carried out in search for references linking school lunch or food in general to SD in educational goals and/ or in everyday activities.

About 30% of the respondents answered the questionnaires. The responding schools and municipalities were located in different parts of Finland. Regarding the population and the municipal type they represented proportionally the different categories, thus improving the generalizability of the results.

The surveys contained several types of questions ranging from numerical data to simple statements and Likert-scaled options with a possibility to open comments with free wording by the respondents to fully open expressions of opinions. The results of the surveys were scrutinized by compiling the basic numerical data. Based on these, eventual differences among the types of the municipalities representing sparsely populated, core and urban adjacent rural areas and urban areas as well as differences as well as differences among Finnish and Swedish speaking schools were looked for. However, the emphasis was on the qualitative content analysis of the comments and answers of the open questions and of the schools' curricula. In the analysis the following sustainability criteria were used:

- (1) Healthiness and safety; food has to meet the requirements of both nutrition and of the hygienic quality
- (2) Security, sovereignty, justice and equity of food consumption; availability of basic food items is secured nationally and globally, and the decisions regarding food are made by local actors

- (3) Economic feasibility; the producers have fair compensation and basic food is available for everyone at reasonable price
- (4) Cultural distinctiveness; seasonal variation and local food traditions are reflected in the food the basis of which is in domestic and local raw materials.
- (5) Ethics; food production fulfils the ethical norms regarding the well-fare of the production animals, workers and the environment.
- (6) Ecological sustainability; the natural resource basis of production is secured and the environmental impacts are managed.
- (7) Aesthetics; food is tasty, the meals are composed by paying attention to the visual and aromatic harmony and it is served without haste in pleasant surroundings.

## Results

The major target group of the public statutory catering is children and youth. 80% of the catering services within the reach of this survey concern kinder gardens and schools, whereas catering services for the elderly people comprise about 10%. The practical arrangements are highly variable, the responsible municipal sector may be technical, educational, social, general administration or the responsibility is shared among two to several sectors of any of the possible combinations.

Central municipal kitchen is very important; in over half of the responded municipalities it provides the meals alone or together with the institutional service or distribution kitchens. In about 10% of the municipalities the service is taken care of municipal-owned enterprise, but completely externalized service is a rare exception.

The municipal catering services are firmly based on domestic products, only as regards to fruit and to lesser extent also to fish the share of import is considerable. The only fruit that grows in Finland in volumes of any practical significance is apple, and during the season 35% of the responded municipalities rely in their fruit offering mostly on domestic apple. The monotonous selection of fruit is compensated with a variety of domestic berries that are also abundantly used. The caterers are interested in local products, seasonal products and fish being the most commonly used items. Instead, organic products are used only in a couple of the responded municipalities, and Fair Trade products are practically non-existent in municipal catering.

The situation reflects the decisive role of the price in food procurement, which has to be submitted to the suppliers' open competitive bidding according to public procurement regulations. In addition, the purchases are often concentrated to purchasing units, and the decision-making is beyond the catering personnel, which decreases their possibilities to influence the repertoire of the food items. Although the catering personnel appreciates domestic and local food, the respondents do not necessarily consider domesticity as an important perspective in future. Thus, the preferences of the respondents are not always in line with their perceptions about the development trends.

The customers of public catering receive information, when they ask, but they are not actively informed about the origin, environmental impacts of production, price formation, nutritional quality or about activity of the catering service. On the other hand, customers' feedback is enquired regularly at least a couple times a year, and the feedback is one of the corner stones in developing the services. The information regarding school-food is in the hands of the school's catering personnel, and with increasing concentration of food services in the hands of the teachers.

The actor network around the catering services is extensive and comprises the professionals in their own as well as in other institutional kitchens, municipal authorities, elected officials, employees, producers, representatives of whole sale and retail, suppliers, logistics, waste management, extension organizations and research as well as customers and their guardians/relatives. The communication within the network was clarified by asking how often the catering personnel communicate about work-related matters with the other actor groups. Professional colleagues and

customers or their guardians are those with whom the communication is most regular and most frequent: The great majority of the respondents discusses weekly or more often with the personnel of their own kitchen and 40% of the respondents also with the customers or their guardians. The personnel of other kitchens are contacted also at least once a month. Discussions with the suppliers and representatives of the municipalities take place 1-2 times a year. Communication with other actor groups takes place now and then, 1-2 times a year or more seldom. The two groups mostly left outside the communicative network are the (food system) researchers and the representative of the waste management.

For the caterers, the concept of SD focuses on the ecological sustainability and environmental questions. The economic aspect is understood narrowly as cost savings and efficiency requirements and is seen rather as a hindrance for realisation of sustainability goals. Domestic and local food is appreciated and it is linked to SD both through reduced need of transports and through food culture and strengthening societal cohesion.

Although not consciously connected to SD also other criteria of sustainable food provisioning seem to be to a varying extent present in municipal food services. The societal function of public catering is in promoting food security and welfare in the society, the nutritional recommendations are the axiomatic foundation and municipal law secures equity and justice. The cultural dimension is expressed by accounting for the various festivities and the associated food traditions, and also by providing options not only for health, but also for also ethic and religious reasons. Ethical aspects deal with concern about the wellbeing and working conditions of the catering personnel, but the concern is not extended so as to deal with the wellbeing of producers or production animals or with promoting Fair Trade. Neither is much attention paid to the aesthetic questions such as interior of the canteens, service layout and visual quality of food or the eating occasion itself.

In the schools' curricula, school meals are strongly linked to learning about health, nutrition and good manners. It is only very seldom mentioned in connection with SD or with subject-specific educational goals; if there is any interface to school subjects, it is to environmental knowledge and natural history. A more extensive concept of food education as part of sustainability education is not familiar, neither is it mentioned in the national core curriculum. Whereas environmental education is well known, education for SD is not, and it is mostly understood narrowly as environmental education with the emphases on recycling and source separation of wastes, energy and material efficiency and in nature protection. The positive contribution of personal behaviour to reducing the environmental impact is emphasised.

A remarkable notion is that no less than 75% of the respondents take their pupils out into the forest to pick berries and mushrooms, also fishing and farm visits in some form are very common. This kind of activity is usually slotted to the educational goals of the school subject environmental knowledge and natural history.

In about half of the responded schools the school has own kitchen, where the food is prepared from the beginning. Another 20% has a service kitchen where the meal is heated and/or partly prepared. These kitchens are used in many ways with the pupils, and the catering personnel participate actively in guiding the pupils in these situations as well as in planning various festivities and thematic activities and in their realisation. However, because of the many formal restrictions and rules, the pupils rarely participate in preparation or distribution of explicitly the school lunch. Instead, in about half of the responded schools the pupils help in clearing the canteen afterwards.

Both among the catering personnel and in schools the means to influence the decisions regarding food are experienced as meagre or non-existent; the decisions are made beyond the reach of catering and school personnel. Although the decisions are made by the municipal authorities, the actors within the catering service and in schools feel powerlessness and see themselves as being forced to adapt own activity to the continuously shrinking resources.

## **Discussion**

The northern location and severe natural circumstances greatly restrict the possibilities for farming and food production in Finland. In spite of this, municipal public catering is still today largely based on food of domestic origin. This fuses faith that even in even extreme circumstances national food security is possible. The actors of municipal catering also appreciate domestic and local food and link it to SD both through reduced need of transports and through socio-cultural considerations. However, food security is not perceived as constituting an essential ingredient of SD. This poses a risk that future development is not based on domestic products. The concern was brought up by the respondents, who feel that the decisions are made beyond their reach and without paying much attention to their preferences.

The results of the present study show that both in schools and among the municipal catering personnel SD is often seen only from the environmental viewpoint. The strivings to promote sustainability focus largely on sorting and recycling of wastes and on improvement of energy and material efficiency. There appears to prevail an illusion regarding the significance of personal behaviour and choices.

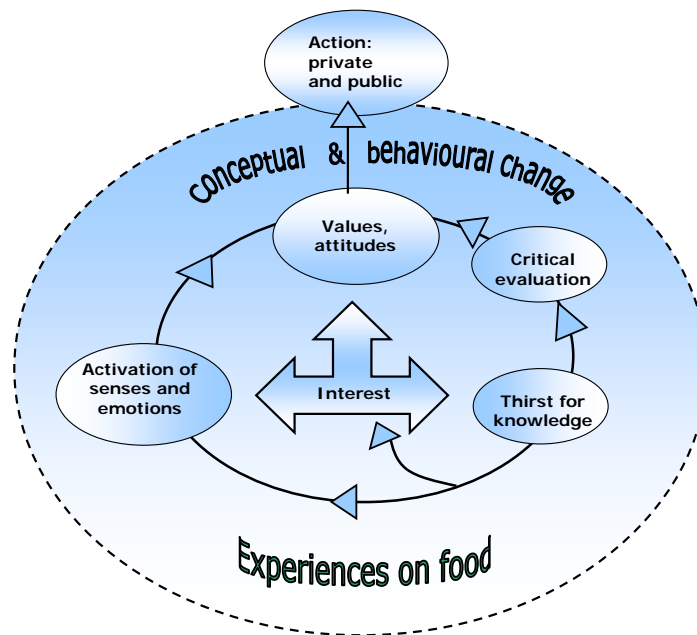
Despite the fairly narrow view on SD, many other of the criteria for sustainable food provisioning are accounted for in public food services, although not perceived as part of sustainability strivings. In Finland, public catering has had, and still has an important role in promoting healthy eating habits and has thereby contributed to reducing the costs of national healthcare. Through similar civic education public catering has all the possibilities to influence eating habits so as to promote SD also in other respects. This requires that the various dimensions of SD are clearly defined within the context of public catering and local food system. In addition, public catering may exert an influence and promote SD also through the sheer volume. It namely comprises one large and fairly homogeneous consumer group, the behaviour of which is through the statutory nature more predictable than that of the individual citizens.

The personnel of municipal catering service are aware of the development needs, and they have ample professional interest to gear their own activity towards improved sustainability (Mikkola 2009a, b). However, sustainable public food services should not only be the concern of the catering personnel, but the aims need be incorporated into the overall municipal development strategy (Collins and Fairchild 2007). In schools, implementation of this strategy is concretely expressed in form of school lunch.

The major customer group of public catering is children and young people. Therefore, much more attention should be paid to schools and their food education. Also many of the enduring eating patterns are created in the early age rendering the school meal system as an especially promising means to promote healthy and sustainable eating (Cho & Nadow. 2004). School lunch provides means to bring sustainability education into practical context by showing the connections of food to the environment, society, economy and culture both at local and global scale. It is important that the whole school community is committed to the goals of food and sustainability education. The commitment is strengthened when the so called whole school approach is applied; this means that the goals are formulated together and food education with school lunch as part of it is integrated into the educational goals of the school (Morgan & Sonnino 2008). Schools' catering personnel is already in many ways involved in various activities with the pupils, and experiences on good practices can be shared among the schools.

The survey revealed that the municipalities differ as to the foci and development needs. Therefore, there are no universal solutions, but the solutions have to be slotted to the prevailing local circumstances and reconciled in mutual understanding among the actors. Innovative networks involving municipal actors, researchers and an expert seem to provide one promising channel for finding the local way to improve sustainability of public catering dialogue (Mikkola, 2009b). This requires empowering the actors and encouraging the change in attitude from that of an outsider consumer towards participatory activities for sustainable food culture.

The key is food education, the transformative process of which is shown in Figure 2. The process is founded on the personal experiences on food. Experiences are acquired by tasting, smelling, doing, seeing, feeling and eating together. When positive these provide favourable substrate for new knowledge and skills. New experiences increase the interest and arouse the thirst to know more, which initiates active knowledge processing and critical evaluation. Simultaneously the attitudes and values are also modified; this creates basis for conceptual and behavioural change that is expressed as personal choices and practical actions. This part of food education is best implemented in practice by developing the every day eating in schools and working places as a pleasant occasion of social interaction.



**Figure 2.** The transformative process of food education. The figure is modified from Risku-Norja & Korpela 2009.

The success of food education is shown as changes in personal food choices, but focusing on individuals' personal behavior is not the way to promote SD. This is because the consumer behavior and attitudes towards food are not consistent; citizens have different perceptions about SD, they express various demands and wishes that change over time and depend on general overall trends and personal circumstances, including purchasing power. In consequence, the direct impact of the changes in individual food consumption habits is extremely restricted and can only be gauged over a very long time span, if at all. Therefore, an important part of food education deals with empowering the people by providing means and channels of citizen activity in order to influence decision-making. Responsibility for SD cannot solely be pushed onto the individuals.

In order to improve sustainability of public catering, the concept of SD has to be concretised to the actors. A frame of reference is provided by the premises of sustainability science, a new emerging field of research that is characterised by problem-based approach, normativeness and transformativeness, transdisciplinarity, interactive learning and linkage to challenges of global dimension (Clark & Dickson 2003, Luks & Siebenhuner 2007, Tappeiner et al. 2007, Morgan & Sonnino 2008). This frame is useful in contextualising the concept of SD and in constructing an action model for sustainable public catering in a participatory process together with the actors. The practical context of municipal, public food service defines the problem-based approach. Because the aim is to promote sustainability, research and development are implicitly normative and transformative or value-based aiming at conceptual and behavioural change. Transdisciplinarity is realised by using food services as the common framework for the various research fields and by producing data and defining goals in mutual understanding between the researchers and the various local actor groups involved in catering. An essential ingredient is interactive learning as a result of

which SD may gradually become a self-directing process where activities and goals are continuously adapted to changing circumstances and to new knowledge. The questions dealing with food security, equity and sovereignty link the public municipal catering to the global food system based on the network of sustainable local food systems.

## Conclusions

National food security is feasible even in climatically extreme conditions.

The link between food security and sustainability needs to be highlighted.

The awareness about the various dimensions of sustainability can be improved by contextualising the concept through problem-based approach.

The solutions of improving sustainability of food provisioning are not universal, but should be sought in a transdisciplinary process of learning, and tailored according to the local circumstances and in mutual understanding with the local actors.

More attention needs to be paid to food and sustainability education in schools and in kindergartens, since these are the major customers of the Finnish municipal catering.

The whole school approach involving both the educational and kitchen staff in schools into food education for sustainability is to be persuaded.

Responsibility for sustainability cannot solely be pushed onto the individuals. An important part of food education deals with empowering the people by providing means and channels of citizen activity in order to influence decision-making.

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